

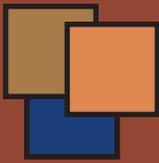
ILLINOIS PROGRAMS OF STUDY GUIDE

2009



Illinois State Board of Education
Illinois Community College Board





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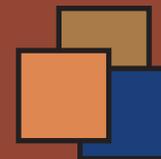
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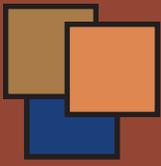
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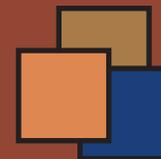
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July 31, 2009



CONTENTS

Introduction.....	1
■ Background	1
■ Guiding Principles and Design Elements	3
■ Perkins IV	4
■ Illinois' Career Cluster Model	5
■ From Tech Prep to Partnerships for College and Career Success.....	8
■ Illinois Programs of Study Development	9
The Guiding Principles of Programs of Study.....	10
Principle 1	12
Principle 2	18
Principle 3	24
Principle 4	30
Principle 5	36
Principle 6	42
Moving Forward.....	48
References	49
Appendices	53



This guide begins with background information useful to understanding Illinois' framework for implementation and evaluation of Programs of Study. We start with a visual depiction of the relationships between activity at the federal, state and local levels that evolved to the creation of Illinois' Career Cluster Model. This Model, which is based on the States' Career Clusters Initiative, is also discussed, along with a visual depiction of the relationship between the 16 career clusters, the 79 career pathways, and numerous Programs of Study. An example of this relationship is provided using the Health Science cluster since this cluster is one of the first tapped for statewide implementation in Illinois.

Following the introduction, we present the six guiding principles for implementation and evaluation of Programs of Study. Each principle has its own section with the following information:

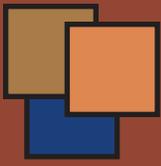
- The guiding principle statement: A brief, straightforward statement of the principle
- A principle overview: The what, why and how of implementation relevant to the principle
- An "In Practice" example: A promising practice in Illinois pertaining to the principle
- An "In Perkins IV" statement: Legislative language that is aligned with the principle
- "Design Elements at a Glance": Design elements associated with the principle
- Tools and Resources: Selected tools and resources for implementing the principle
- Appendices: A copy of one selected tool or resource, reprinted with permission of the publisher or author

The concluding section of this guide, titled Moving Forward, presents some activities planned for Illinois' journey with Programs of Study.

Background

Figure 1 (on the following page) depicts relationships between events and developments at the federal, state and local levels that have led Illinois to the current moment in time. The figure shows an important trigger point was the authorization of Perkins IV in 2006, which led to the adoption of the States' Career Clusters Framework and associated materials and templates that facilitate curriculum reform at the secondary and postsecondary levels. Illinois' development of six guiding principles and design elements is intended to help practitioners transform the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) legislation, the States' Career Clusters Initiative, and other educational initiatives into Illinois' Career Cluster Model, a customized approach that fits the state and local context. The ultimate goal of Programs of Study in Illinois is to facilitate educational change, through the development of collaborative partnerships, the alignment and reform of secondary and postsecondary curriculum and instruction in the form of Programs of Study, and the assurance that these programs are effective and accountable.





INTRODUCTION

Putting It All Together

Why? Perkins IV Federal Push To Strengthen Career and Technical Education

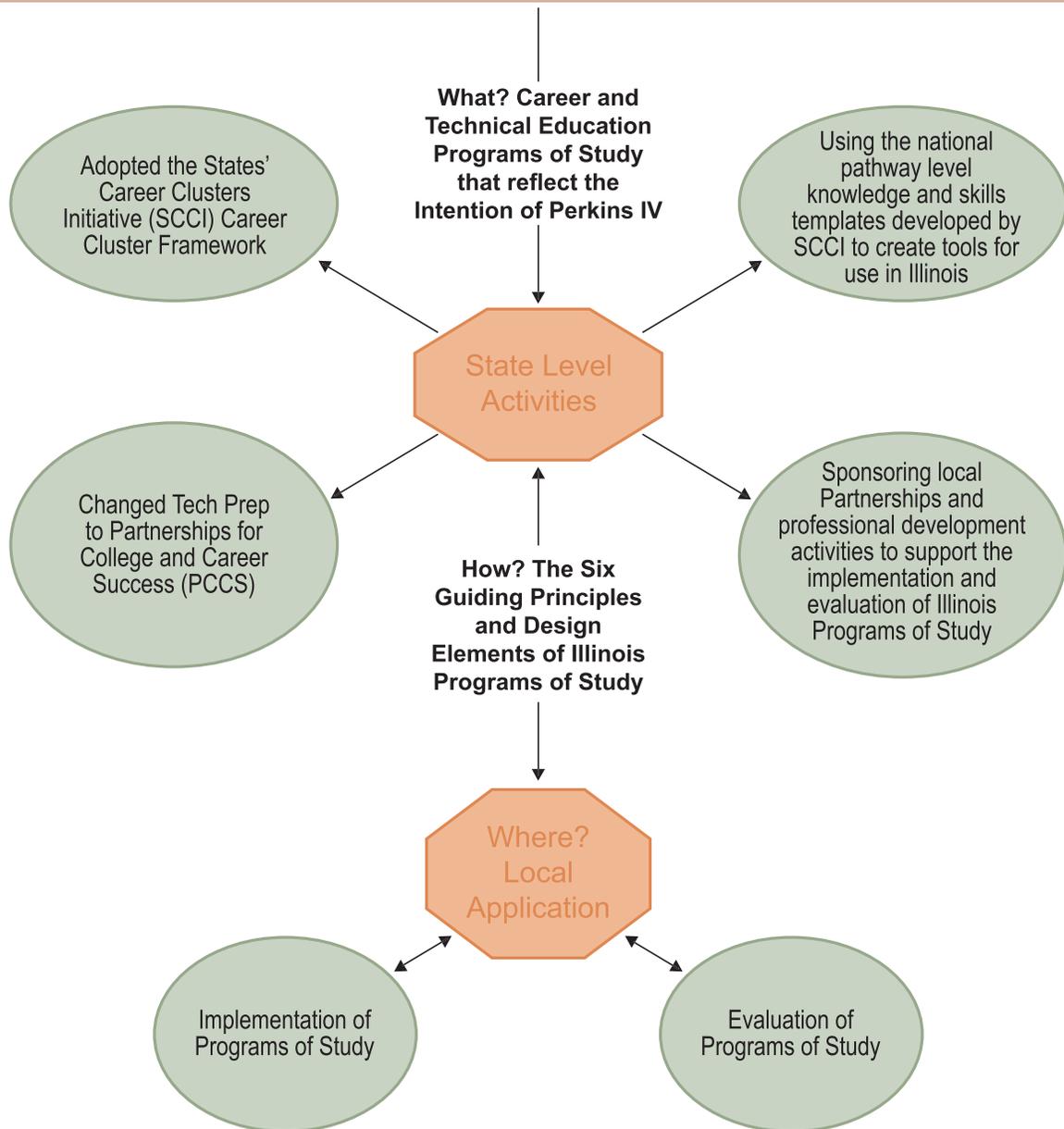
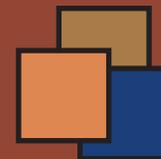


Figure 1. The relationship among federal, state and local activities that support Programs of Study.



In response to the federal legislative changes associated with Perkins IV, the Illinois State Board of Education (ISBE) and the Illinois Community College Board (ICCB) collaborated to provide guidance for local implementation of Programs of Study. The Perkins IV legislation passed in 2006 sparked state-level activities involving the ISBE, ICCB, and the Office of Community College Research and Leadership (OCCRL) personnel in meetings to plan for state and local implementation of Programs of Study. (Major accomplishments and decision points since 2006 are noted on page 9.) Two of the most significant decisions were the adoption of the States' Career Clusters Framework and the restructuring of Tech Prep consortia as Partnerships for College and Career Success (PCCS). These developments result in a broadening of the state's vision and scope of work, and they enhance the potential for CTE to make a substantial contribution to improving Illinois' P-20 educational system.

Guiding Principles and Design Elements

The guiding principles and design elements are intended to assist Partnerships in the implementation and evaluation of Programs of Study. The guiding principles foster systems thinking and change at all levels of education, especially the secondary and postsecondary levels. They are based on research and promising practices that support systemic reform, educational change, and continuous improvement. In particular, OCCRL staff's research drew upon Perkins IV and related legislation such as the 2002 reauthorization of the Elementary and Secondary Education Act, referred to as No Child Left Behind (NCLB), the Workforce Investment Act, and the Adult Education and Family Literacy Act. OCCRL staff's research extended to numerous educational change models, such as High Schools That Work (HSTW), the American Diploma Project (ADP), Building 21st Century Skills, and the newly adopted Common Core State Standards Initiative. In addition, various accreditation and accountability models were studied, and strategies linking postsecondary education and workforce and economic development, including the Illinois Critical Skills Shortage Initiative (CSSI) and Shifting Gears, were

investigated. These ideas were cross-walked with ideas associated with high school reform of the National High School Center and with higher education reform offered in the Spellings Commission and Illinois' own Public Agenda for College and Career Success, led by the Illinois Board of Higher Education (IBHE). Importantly, the guiding principles and design elements were cross-walked with Illinois' 5-year plan for implementation of the Carl D. Perkins IV Career and Technical Education Improvement Act, and funding guidelines prepared by the ISBE and ICCB for local implementation of Perkins IV in Title I, Career and Technical Education Assistance to the States, and Title II, Tech Prep Education.

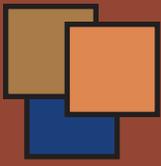
To extend the collaborative nature of this process and involve stakeholders, six workgroups comprised of Illinois practitioners and state agency personnel were led by personnel of OCCRL and the Illinois Center for Specialized Professional Support (ICSPS) at Illinois State University. About 60 practitioners reviewed and commented on the six guiding principles and design elements and their applicability and utility to serve as a framework for implementation and evaluation of Programs of Study. (The names of state and local practitioners involved in the workgroups can be found at <http://occrllinois.edu/projects/perkins/about>) These conversations culminated in the crafting of the Framework for Implementation and Evaluation of Programs of Study found in this guide.

A "guaranteed and viable curriculum is the #1 school-level factor impacting on student achievement."

Source: Marzano (2003, pp. 23-24)

To understand how Illinois' Programs of Study implementation strategy evolved, it is important to review the Perkins IV legislation associated with CTE. Representing the largest investment of federal funds at the high school level, Perkins IV helps to guide state and local implementation and evaluation of Programs of Study, though it is not the only framework. As shown above, Perkins IV is one

of many policies influencing systemic reform and educational change, and it should be viewed in this light. Its unique contribution includes its emphasis on secondary and postsecondary curriculum alignment, academic and CTE integration, and program improvement and accountability that seek to ensure improved education outcomes and employment opportunities for all students.



INTRODUCTION

Perkins IV

The intent of Perkins IV is to provide students with the academic and technical skills necessary to succeed in the 21st Century knowledge- and skills-based economy. Perkins IV also intends to facilitate student transition from secondary to postsecondary education and employment. Educational programs associated with Perkins IV should be held to specific accountability standards and align with relevant industry- and occupational-based standards. Perkins IV requires collaboration among secondary and postsecondary education, including public and proprietary institutions awarding two-year associate degrees and certificates as well as “institutions of higher education that award a baccalaureate degree” and “employers (including small business), business intermediaries, or labor organizations” (Perkins IV, Title II, Tech Prep Program, Sec. 203, p.56-57). These organizations need to work collaboratively with numerous constituencies including secondary and postsecondary administrators, counselors, and students (including special populations), and parents, when appropriate, to place students in high-skill, high-wage, or high-demand occupations. The overarching purpose of Perkins IV is “to develop more fully the academic and career and technical skills of secondary education students and postsecondary education students who elect to enroll in career and technical education programs” (Perkins IV, Title I, Career and Technical Education Assistance to the States, Sec. 2., Purpose, p.2).

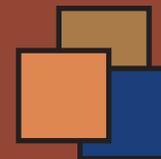
Since 1984, four federal bills on CTE (formerly vocational-technical education) have been named after Carl D. Perkins, a Kentuckian who served as a member of the House of Representatives from 1949 until his death in 1984. Representative Perkins’ leadership in the US Congress helped to lay the groundwork for the reauthorizations in 1990, 1998 and 2006 that funded Tech Prep education. In a nutshell, Tech Prep was authorized to prepare students through an integrated and articulated curriculum that improves their transition from K-12 to postsecondary education and employment. The integration of academic education and CTE, including applied academics and contextualized instruction, and the alignment and articulation of secondary and postsecondary curriculum have been central themes of Tech Prep since 1990, and they continue today. Similar to other states, Illinois implemented Tech Prep through federally mandated consortiums, typically involving a community college; multiple secondary schools; and business, industry and labor partners. In Illinois, about half of Tech Prep consortia were led by Education for Employment (EFE) regions and about half were led by community colleges (Kirby, Maciente, & Bragg, 2008). Illinois experienced growth in Tech Prep programs and student enrollments in the early years of implementation, followed by relative stabilization between 2001 and 2007, the final year data were collected for the annual Tech Prep outcomes report created by OCCRL as part of Illinois’ Tech Prep evaluation process.

In Illinois, the evolution of Tech Prep is recognized as providing the roadmap that directed the state to the current point of statewide adoption of Programs of Study. The “essential elements” employed by Illinois encouraged the development of articulation agreements; curriculum; inservice for teachers (to enhance instruction) and counselors (to enhance advising); equal access for all learners, including special populations; preparatory services; and work-based learning. These elements continue to provide a foundation for the development of Programs of Study that are supported by either Title I or Title II funds. To promote Programs of Study, it is important to continue to emphasize these practices as well as others (e.g., career development, dual credit, academic and technical assessment). Further, Perkins IV requires measuring student outcomes such as educational attainment (academic and technical), continuation in the major from secondary to postsecondary, certification, completion, and remediation (Meeder, 2008). This balance of program implementation and student outcomes is critical to implementation of Programs of Study and ultimately to demonstrating student success.

Overarching Themes in Perkins IV Legislation

The Association for Career and Technical Education (2006) identified five themes that appear consistently throughout Perkins IV:

- Accountability for results and program improvement at all educational levels
- Coordination within the career and technical education (CTE) system
- Integration of academic and technical education
- Connection between secondary and postsecondary education
- Involvement of business and industry



Illinois' Career Cluster Model

Illinois adopted the States' Career Clusters Framework (see: <http://www.careerclusters.org/>) that offers 16 Career Clusters, 79 Career Pathways and numerous Programs of Study. Each of these elements is further defined below.

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

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

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

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

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

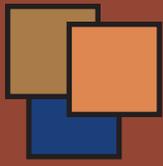
Programs of Study (POS) are sequences of courses that incorporate a non-duplicative progression of secondary and postsecondary elements which include both academic and career and technical education content. Programs of Study should start no later than the ninth grade and continue through at least two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

Why a Career Clusters Framework?

The framework of career pathways, career clusters, and Programs of Study organizes educational preparation and occupational choices into a unified concept (see Figure 2, page 6). By combining rigorous academics with CTE, students have a clear path to their future. Career clusters:

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





INTRODUCTION



Figure 2. Illinois' Career Cluster Framework

How a Career Cluster Flows into Career Pathways and Programs of Study

Figure 3 provides an example of the relationship between one of Illinois' five secondary and CTE areas (Health Sciences Technology), the related career cluster (Health Science), the five career pathways within that cluster, and sample Programs of Study within the career pathway. The figure also illustrates the essential knowledge and skills that are shared by all clusters, the cluster level knowledge and skills shared by all occupations within the pathways in the cluster, and the pathway level knowledge and skills specific to each of the five pathways. Too numerous to include in this model are the Programs of Study: a sequence of courses that are taken at multiple levels and lead to employment in related pathway occupations. Career exploration and development are integrated into all levels of the model. The model also shows an entry point for adults by including bridge programs that infuse cluster level knowledge and skills with adult education and developmental education course content.

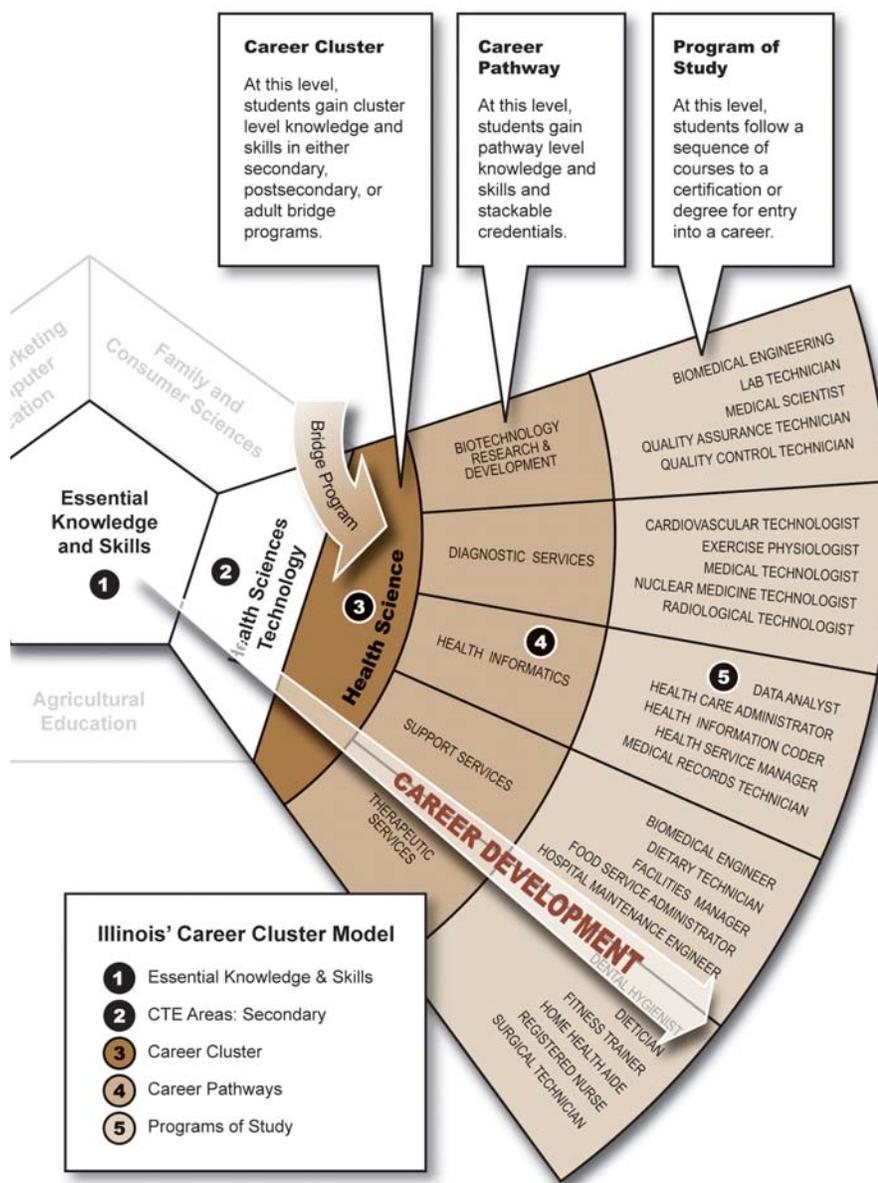
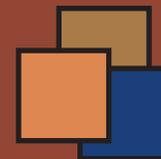
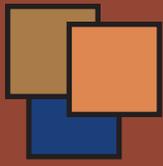


Figure 3. Illinois' Career Cluster Model shows the relationship between the secondary Health Sciences Technology area and the Health Science Cluster, the five career pathways and sample Programs of Study that prepare students for entry into the workforce.



INTRODUCTION

Career Cluster

The health science example shows how, at the career cluster level, students are exposed to the breadth of essential and cluster level knowledge and skills needed for multiple careers. This framework provides multiple entry and exit points for students as they progress through a Program of Study. For example, a high school student may participate and acquire cluster level knowledge and skills and dual credit while enrolled in the secondary system, and adults may acquire the same cluster level knowledge and skills as they progress through an adult bridge program in adult education courses or developmental education.

Career Pathway

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

Program of Study

Through the Program of Study, students are provided with the opportunity to receive stackable credentials, referring to credentials that build upon one another and align with segments of the curriculum that advances from secondary through the associate degree and in some cases, also the baccalaureate degree. Career clusters and career pathways offer the knowledge and skills required to complete a Program of Study that leads to the community college, an apprenticeship, and/or the university level and provides students with opportunities for certification and degree attainment along the way.

Career Cluster Partners

Implementing the career cluster model involves Partnerships including secondary education; community colleges; universities; business, industry, and labor; apprenticeships (youth and adult); adult education providers; community-based organizations (CBOs), and others. Without the involvement of a broad spectrum of partners, it is difficult to align curriculum and meet the needs of diverse students. Partners need to work together to align goals and decrease duplication in curriculum, enhance college readiness and reduce remediation, and foster transitions for students to improve their educational and employment outcomes.

From Tech Prep to Partnerships for College and Career Success

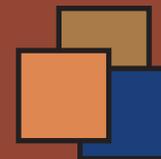
More than a Name Change

Tech Prep consortia in Illinois are now recognized as "Partnerships for College and Career Success" (called Partnerships in the remainder of this guide). Partnerships encourage collaborative work between the secondary education and postsecondary education and training levels, and they support the implementation and evaluation of Programs of Study. The creation of new Partnerships became effective July 1, 2008, with a charter to encourage and support Perkins IV implementation and evaluation. Specifically, Perkins IV, Title II dollars support local Partnership efforts to develop, implement and evaluate Programs of Study. Grant guidelines prepared by the ICCB charge Partnerships with addressing college and career success by providing coordinated programs and services that assist learners to achieve academic and technical competencies by transitioning from secondary to postsecondary education and employment.

Much more than a name change, the restructuring of Tech Prep consortia into Partnerships reflects the increased emphasis of Perkins IV (over prior federal legislation) on coordinating state and local efforts and transitioning students to the postsecondary level and into high-skill, high-wage, or high-demand employment. Funding eligibility in Illinois requires that Partnerships involve a broad-based group of constituents, including area secondary schools, Education For Employment (EFE) regions, area career centers, community college(s), and relevant business and industry partners. Community college districts are used to define the Partnership district, and if two or more community colleges are collaborating on one grant, the Partnership encompasses the combined districts. Partnership members may also include other postsecondary institutions, including four-year colleges and universities, adult education providers, labor and other organizations that support apprenticeships, community-based organizations (CBOs), and other groups needed to support student success.

Partnerships for College and Career Success

The Partnerships join secondary, postsecondary, employer, community, and other stakeholders in providing viable college and career transition opportunities for learners. Partnerships are required to develop and implement rigorous Programs of Study that incorporate numerous essential elements, such as academic and CTE content; coordinated, nonduplicative courses that align secondary and postsecondary education; activities that reduce remediation; postsecondary degree or certificate or apprenticeship options, and employment supports (see <http://www.iccb.org/partnerships.html>).



Illinois Programs of Study Development

The Perkins IV legislation requires all states to create at least one Program of Study by 2012, as defined by minimum requirements in the legislation. However, this level of implementation falls short of expectations of practitioners in Illinois where Partnerships are setting goals to implement Programs of Study on a larger scale. To launch this process, Illinois began conversations on the state and local levels to explore, develop, and plan the implementation of Programs of Study immediately after passage of the new legislation in 2006. Below is a brief chronicle of Illinois' progress during FY07, FY08, and FY09. It highlights especially noteworthy decisions, developments, events and milestones.

May 2007 – May 2008

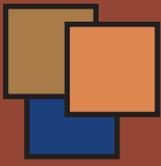
- ISBE, ICCB and OCCRL facilitated regional meetings involving over 150 practitioners throughout the state to formulate plans for systemic change, restructure and improve practice, and identify policy changes that enhance CTE programs statewide.
- ISBE, ICCB and OCCRL invited secondary and postsecondary educators to advise the state on findings from the regional meetings.
- The Program of Study State Leadership Team was formed with staff of the ISBE, ICCB, OCCRL, and ICSPS and began regular meetings.
- Illinois' state plan for Perkins IV was released to the public, and ISBE and ICCB conducted public hearings, and submitted Illinois' state plan to the United States Department of Education in April 2007.
- Illinois officially adopted the States' Career Clusters Framework (www.careercluster.org)
- ICCB and ISBE agreed to launch *Partnerships for College and Career Success (PCCS)* and solicited local applications for FY09 grants.
- ISBE and ICCB agreed on the roll-out of two career clusters: Health Science and Manufacturing

June 2008 – June 2009

- ISBE, ICCB and OCCRL released *An Introduction to Illinois CTE Programs of Study* formalizing the adoption of the States' Career Clusters Framework and Illinois' framework for implementation and evaluation of Programs of Study.
- Six workgroups consisting of secondary and postsecondary educators, administrators and state staff and led by OCCRL and ICSPS personnel reviewed and revised the guiding principles and design elements.
- Four workshops were held throughout the state to facilitate Partnership implementation of Programs of Study through a self-assessment process that encouraged reflection on existing programs, practices, and policies (see: <http://occrillinois.edu/projects/perkins/workshop>)
- Pilot projects were conducted with support of the ISBE and ICCB, providing insights into local efforts to implement the States' Career Clusters Framework, including pathway level knowledge and skills and related templates.
- Six webinars were conducted (one per month from January to June 2009) by OCCRL and ICSPS to introduce the field to the six guiding principles and design elements
- ICCB staff revised the existing Directory of Programs brochure to align with the state's adoption of the 16 national Career Clusters. A brochure and online directory (<http://ilprogramsofstudy.org>) were published by ICCB.
- ISBE continued its Curriculum Revitalization Project, focusing on CTE course-level reform and adoption, aligning this work with the States' Career Clusters Initiative.

July 2009 – June 2010 (anticipated)

- Continue implementation of Programs of Study by Partnerships, with support provided through professional development.
- Implement curriculum mapping as a potential practice to improve curriculum alignment and determine appropriate assessment methodology to measure student learning.
- Launch of Pathways to Results by OCCRL, linking Programs of Study implementation to process improvement and student equity and outcomes.



Guiding Principles of Programs of Study

This section of the Guide presents the six guiding principles for implementation and evaluation of Programs of Study. Each section is designated by a distinct color tab on the side of the page that leads the reader through the following information:

Principle Statement

The guiding principle statement.

Principle Overview

A brief overview provides the what, why and how of each guiding principle. It is intended to help practitioners understand each guiding principle and related design elements and apply them to the implementation and evaluation of Programs of Study.

In Practice

One example of a promising practice is featured for each guiding principle, recognizing that Illinois practitioners are actively improving programs. The practices selected for the guide are a small sample of promising practices implemented in the state. Most of the examples emerged from the conversations of Programs of Study workgroups that OCCRL staff led during Fall 2008. Some of the featured practices represent several guiding principles and design elements, underscoring their complementary nature.

In Perkins IV

The Perkins IV legislation is the foundation for the implementation and evaluation of Programs of Study, and the guiding principles draw heavily from the legislation, as well as the literature on educational change, systemic reform, and continuous improvement. This section highlights select language from Perkins IV as it relates to each guiding principle.

Design Elements at a Glance

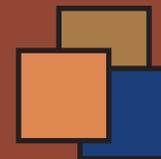
The design elements associated with each guiding principle are enumerated, with activities embedded within the design elements highlighted with bold text.

Tools and Resources

This section rearticulates each design element and provides useful tools and resources for each guiding principle. Nearly all tools and resources are provided in the form of links to Web sites, allowing readers to capitalize on online resources. A description of each tool and resource highlights its primary features.

Appendices

Finally, appendices are included in the guide that present one tool for each guiding principle, reprinted with permission of the publisher or author. These tools were identified by practitioners associated with the Programs of Study workgroups, state agency staff, and OCCRL personnel because of their usefulness to improving practice. Here and elsewhere in the guide, the selected tools are far from exhaustive, but rather indicative of the resources that are relevant and useful to implementation and evaluation of Programs of Study.



The Six Guiding Principles

Principle 1: Leadership, Organization and Support

Principle Statement: Programs of Study are developed, supported and led with guidance from collaborative partners.

Principle 2: Access, Equity and Opportunity

Principle Statement: Each and every student has access to educational opportunities and services that enable their success.

Principle 3: Alignment and Transition

Principle Statement: Education and training providers, with input from business and industry, enhance alignment that facilitates student preparation and transition through the educational pipeline.

Principle 4: Enhanced Curriculum and Instruction

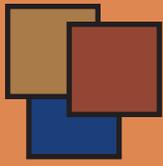
Principle Statement: Curriculum and pedagogy involve rigorous and relevant instruction that enhances learning and enables students to attain academic and technical standards and credentials.

Principle 5: Professional Preparation and Development

Principle Statement: Comprehensive and continuous professional development that impacts teaching and learning is delivered to enhance the recruitment, preparation and retention of qualified instructional and administrative staff.

Principle 6: Program Improvement and Accountability

Principle Statement: Data are collected, shared, and utilized to improve outcomes and demonstrate accountability.



PRINCIPLE 1: LEADERSHIP, ORGANIZATION AND SUPPORT

Principle Statement

Programs of Study are developed, supported and led with guidance from collaborative partners.



Principle Overview

The first guiding principle is Leadership, Organization and Support. No change is possible without leadership, and no systems change is possible without shared leadership. Systems change requires the active engagement of multiple stakeholders who act collectively to create and implement a shared vision, to execute short- and long-term goals and plans, and engage actively in strategic implementation that engenders change. Perkins IV presents both a challenge and an opportunity to better align systems at all levels – the federal, state and local levels as well as the K-12 through grade 20 levels. Alignment of education with the workforce, through partnerships with business, industry and labor is important, as it addresses the needs of diverse learners who desire opportunities to participate in postsecondary education and training and fulfill their dreams of having productive careers. Through shared leadership, organizational change and strategic support for implementation of Programs of Study can become a reality that addresses students' goals and enhances their outcomes.

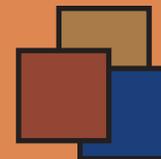
Leadership

Today's theorists look at leadership through new lenses, though some ways of viewing leadership have existed for a long time. A view that is especially pertinent to the implementation of

Programs of Study is *transformational leadership*. Gregson and Allen (2005) and Wonacott (2007) observe leadership associated with CTE has evolved from an autocratic, behavioral orientation to one that envisions leaders as transformational agents of change. Transformational leadership is “the process of perceiving when change is needed and influencing the group by such noncoercive means as persuasion and example in its efforts toward goal setting and goal achievement” (Moss & Liang, 1990, p. 5). Charisma, intellectual stimulation, individual consideration, and inspirational motivation characterize transformational leaders.

These ideas are also associated with the concept of *transforming leadership*, defined by Burns (1978) as the active engagement of leaders to “shape and alter and elevate the motives and values of goals of followers through the vital teaching role of leadership” (p. 425). Regardless of the chosen terminology, the idea is the same when applied to leadership of Programs of Study. Transformational leaders engage and empower others to change the educational system through implementation and evaluation of Programs of Study.

Another perspective on leadership that has special relevance to Programs of Study is *transformative leadership*. This idea suggests leaders are agents of change who are acutely aware of diverse learners' aspirations to access education, participate



in learning, and achieve successful outcomes. Transformative leadership builds on earlier notions of transformational leadership, but extends this idea to conceiving of leaders as advocates for equity and opportunity for all students, especially underserved populations (some of whom are referred to as special populations in Perkins IV). CTE programs enroll large numbers of diverse learners, heightening leaders’ responsibilities to ensure that Programs of Study achieve the dual goal of enhancing equity and improving outcomes.

Illustrating this idea, Jahan (2000) described transformative leaders as individuals who “demonstrate a strong commitment in the principles of equality, equity, and empowerment... [They] use power not as an instrument of domination and exclusion but as an instrument of liberation, inclusion and quality” (p. 3) (see Table 1). This perspective envisions leaders as not only visionary and influential but also as advocating for social justice and ensuring that all learners are supported in their efforts to achieve educational and employment goals (Anderson, 2008).

Table 1. Qualities of Transformative Leadership

A. Vision and Commitment	B. Institutional Behavior
■ Equality	■ Participatory
■ Equity	■ Egalitarian
■ Empowerment	■ Responsive
■ Human rights	■ Transparent
■ Peace	■ Accountable
■ Sustainability	■ Non-corrupt
■ Shared power, responsibility, well-being	■ Consensus-oriented
	■ Empowering

Source: Jahan, R. (2000). *Transformative leadership in the 21st century*, p. 3.

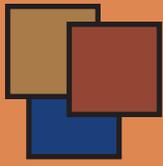
Ultimately, transformational and transformative leaders engage in practices of *shared or distributed leadership* (Elmore, 2000). They reject top-down, hierarchical, and secretive forms of leadership in favor of participatory, consensus-oriented, and transparent approaches (Jahan, 2000). They understand leadership is not the purview of one or a few, but a shared responsibility of many. They know there is no other way to achieve change than to work collaboratively with others who aspire to similar goals and outcomes, and they seek opportunities to nurture collaboration. This vision of leadership is evident in leader behaviors that encourage collective communications, actions, and attitudes that bring about real, deep and lasting change.

Collaboration

Partnerships with authority for Programs of Study need to have broad-based representation of organizations and people who are committed to student success. In Illinois, these groups include K-12 schools, including Education for Employment (EFE) regions and area career centers; various levels and forms of postsecondary education (community college, technical college, universities that are both public and proprietary); adult education providers; business, industry and labor groups including apprenticeship providers; branches of the military; CBOs and other community groups; and others. These groups play a critical role in Programs of Study, including carrying out such actions as assessing workforce and occupational needs; designing and developing curriculum; reviewing and assessing program quality; identifying relevant credentials (certificates, associate degrees, baccalaureate degrees); and helping to recruit, mentor and employ students. Without the concerted action of diverse stakeholders, partnerships often engage in half-hearted attempts at “playing at” partnering rather than engaging in genuine collaboration, an observation that Bragg and Mills (2005) made a few years ago when Perkins IV was beginning to take shape on the national scene. Based on their work with Tech Prep consortia, Bragg and Mills observed collaboration is never easy and cannot be sustained without shared leadership that is committed to collaboration and broad-based support for systems change.

The formulation of goals, activities and intended outcomes of engaged partners can be done through the development and adoption of a formal Memorandum of Understanding (MOU). MOUs should not be considered a magic bullet to success; rather, they provide a vehicle to engaging partners in a dialogue about shared goals and intended outcomes. Commitments of resources often follow these conversations, once partners know the potential of their shared endeavors and trust that they and others have the ability to follow through. Moreover, joint secondary and postsecondary advisory committees extend goal setting and enhance information-sharing. They provide the opportunity to enhance communication and coordination across the educational system, and they represent a means of increasing efficiency and reducing duplicative efforts that are costly and time-consuming. They provide a vehicle for internal and external stakeholders to engage actively in the implementation and evaluation of Programs of Study.

Collaboration is critical to the formation and sustenance of any successful partnership. Gray (1989) described collaboration as a process where “parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (p. 5). Recognizing that every organization has its



PRINCIPLE 1: LEADERSHIP, ORGANIZATION AND SUPPORT

own priorities, Gray's definition points to the importance of looking beyond immediate needs to promoting benefits for the good of the collective, what is sometimes referred to as the "public good". Amey, Eddy and Ozaki (2007) point out organizations invariably have goals they consider of paramount importance that get in the way of finding common ground, so leaders need to anticipate factors that contribute to differences and find points of intersection. Consensus-building is critical to any change process and absolutely essential to finding agreement among stakeholders associated with Programs of Study. Collaboration enables disparate values, goals, and expectations to coalesce into shared plans and meaningful approaches, including recruiting diverse student populations, offering aligned curriculum, assessing students' competencies, and enhancing their educational and employment outcomes.

Support

To achieve systems change, federal, state and local leaders need to provide adequate support to individuals and organizations that show a keen interest in and commitment to Programs of Study. They need to recognize that a small group of committed colleagues requires resources to fulfill their aspirations, and they need to support them to continue to expand Programs of Study in ways that benefit increasing numbers of learners. Time, money, technology, and materials are but a few of the resources that are crucial to effective collaboration and ultimately to achieving successful student outcomes. Unfortunately, these resources are often in short supply, and well intentioned leaders cannot give the level of tangible support they desire to provide. Beyond tangible resources, recognition and rewards can be powerful tools to help individuals and organizations remain dedicated to the hard work of educational change. Finding ways to recognize outstanding contributions is important to nurturing willing participants and creating a culture of change that results in enhanced student outcomes. An important study by Firestone (1989) of educational reform at the local district level shows the combination of will and capacity plays a critical role in educational reform. His research does not underestimate the benefits of tangible resources, including funding, but it does not stop there. Firestone's work demonstrates the importance of providing an array of resources, tangible and intangible, to support and sustain systemic reform and educational change over time.

In Perkins IV

Title II, SEC. 203. TECH PREP PROGRAM.

(a) GRANT PROGRAM AUTHORIZED.—

(1) IN GENERAL.—From amounts made available to each eligible agency under section 201, the eligible agency, in accordance with the provisions of this title, shall award grants, on a competitive basis or on the basis of a formula determined by the eligible agency, for tech prep programs described in subsection (c). The grants shall be awarded to consortia between or among—

(A) a local educational agency, an intermediate educational agency, educational service agency, or area career and technical education school, serving secondary school students, or a secondary school funded by the Bureau of Indian Affairs; and

(B)(i) a nonprofit institution of higher education that—

(I)(aa) offers a 2-year associate degree program or a 2-year certificate program; and

(bb) is qualified as an institution of higher education pursuant to section 102 of the Higher Education Act of 1965, including—

(AA) an institution receiving assistance under the Tribally Controlled College or University Assistance Act of 1978 (25 U.S.C. 1801 et seq.); and

(BB) a tribally controlled postsecondary career and technical institution; or

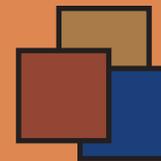
(II) offers a 2-year apprenticeship program that follows secondary education instruction, if such nonprofit institution of higher education is not prohibited from receiving assistance under part B of title IV of the Higher Education Act of 1965 pursuant to the provisions of section 435(a)(2) of such Act; or

(ii) a proprietary institution of higher education that offers a 2-year associate degree program and is qualified as an institution of higher education pursuant to section 102 of the Higher Education Act of 1965, if such proprietary institution of higher education is not subject to a default management plan required by the Secretary.

(2) SPECIAL RULE.—In addition, a consortium described in paragraph (1) may include 1 or more—

(A) institutions of higher education that award a baccalaureate degree; and S. 250—57

(B) employers (including small businesses), business intermediaries, or labor organizations.



In Practice

Transformational Leadership in Madison County

Cynthia Garcia, System Director of the Madison County Career and Technical Education System, models transformational leadership in her work to implement one additional ACT WorkKeys test in her local high schools. Through her committed leadership and empowerment of other local leaders, Ms. Garcia has championed the idea of having local high schools supplement the Prairie State Achievement Exam (PSAE) with a third WorkKeys test “Locating Information”. The PSAE includes the ACT exam; the ISBE Science test; and two WorkKeys tests, Applied Math and Reading for Information. The 3rd WorkKeys test, Locating Information, is needed for students to earn the WorkKeys National Career Readiness Certificate (NCRC). This certificate is valid for 5 years and documents employability skills. Her efforts involve a large contingent of education, training, employer, labor, and community groups, and they continue to grow.

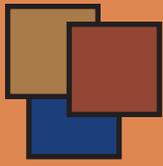
Starting two years ago, Ms. Garcia worked with two area schools and her efforts grew to include five high schools the next year. In addition, employers, local Workforce Investment Boards (LWIBS), Chambers of Commerce, Rotary Clubs, churches and other groups were encouraged to adopt WorkKeys scores and the NCRC as part of their employment criteria. Ms. Garcia’s communications were direct and clear: “The Madison County Career & Technical Education System would like to ask you to participate in an initiative that would provide you with an applicant sorting tool, provide value to the state high school test for students and help your local school district.”

When asked to describe the steps that she took to encourage so many groups to adopt the WorkKeys exams, Ms. Garcia outlined the following major steps:

- Visits were made to local Chambers of Commerce, Rotary Club meetings and other community events to share the idea of supporting WorkKeys, and ask these groups to make a minimum commitment of asking local high school students to provide their WorkKeys scores. Over 200 businesses were notified in two communities, and they told there is no charge to using the scores because they are provided directly to them by the students, creating a Win-Win-Win for the students, the schools and the employers.

- The third WorkKeys test was restricted to high school juniors enrolled in CTE courses, and they were prepared for the test. They were advised that local businesses were told about WorkKeys, and they were encouraged to be ready to give their scores to employers. They were encouraged to take the test seriously so that they could demonstrate their employability skills and readiness for employment, and the students showed enthusiasm. Students scoring level 3 or above on all three tests received the NCRC providing them with a credential that displays their workplace competencies in a highly visible and credible way to employers.
- The local Workforce Investment Board (LWIB) funded the 3rd WorkKeys test the first year, and the Regional Office of Education funded the project the second year (each test costs \$5, plus \$5 for the certificate, if the student qualifies). The LWIB leadership provided enthusiastic support and encouragement for the project, including helping to notify their clients of the project.
- Two community colleges, Lewis and Clark Community College (LCCC) and Southwest Illinois College (SWIC) have been part of the project, providing Ms. Garcia the opportunity to share information about the project with their employees, students, and other community members. SWIC has instituted a requirement that any teacher aid must take the WorkKeys test, and they administer it on their campus.
- Ms. Garcia advertised this idea widely within the local communities, including serving as a guest speaker for Chamber and Rotary Club meetings, doing mass mailings including a dedicated brochure for businesses, and writing newspaper articles. She described her efforts as reaching out to anyone who would listen, including speaking to small groups in church basements.

Reflecting on her efforts, Ms. Garcia recognizes the importance of vision, commitment, communication, and collaboration. She admits the project could never have been implemented by herself alone. She has met with numerous individuals who have helped to spread the word and engage others. Shared leadership and empowerment are key strategies employed by the group of leaders under Ms. Garcia’s guidance. Even beyond the local area, Ms. Garcia identified several other EFE regions that have similar initiatives, and she believes her efforts, along with others, are creating a network that has the potential for even greater change. For educational leaders, there is no greater reward than seeing their ideas shared, adopted by others, and making a difference for students, and that’s exactly what is happening in Madison County.



PRINCIPLE 1: LEADERSHIP, ORGANIZATION AND SUPPORT



Principle 1 Design Elements at a Glance

1. Leaders support authentic collaborative partnerships that include secondary and postsecondary education and encourage the active involvement of business and industry and labor organizations; community-based organizations and community members; student organizations; parent organizations; and other organizations and agencies that benefit student transition to college and careers.
2. Leaders establish and communicate a vision, mission, and goals that are aligned with enabling federal and state policies and important components of the larger educational system.
3. Leaders encourage individuals at all levels to engage in **shared decision making**, encouraging the perspective of individuals and groups not always active in curriculum reform and organizational change.
4. Leaders nurture a **collaborative culture** of respect, high expectations, and demonstrable student outcomes and benefits for partners.
5. Leaders formalize genuine collaborative partnerships, including the roles and responsibility of member entities and create a formal memorandum of understanding to ensure clarity and accountability.
6. Leaders encourage the planning, implementation and evaluation of Programs of Study that are guided by active, **joint secondary-postsecondary advisory committees**.
7. Leaders commit **tangible and intangible resources** including personnel, money, curriculum, technology, encouragement, and moral support.
8. Leaders encourage that partners receive **technical assistance and technology assistance** to support Program of Study implementation and continuous improvement.

Tools and Resources

Design Element 1

Leaders support authentic collaborative partnerships that include secondary and postsecondary education and encourage the active involvement of business and industry and labor organizations; community-based organizations and community members; student organizations; parent organizations; and other organizations and agencies that benefit student transition to college and careers.

- The Workforce Strategy Center provides a useful description of career pathway roles and responsibilities. http://www.workforcestrategy.org/publications/Career_Pathways_Partner_Roles.pdf
- Keith MacAllum, Carla Yoder, and Anne Rogers Poliakoff of the Academy for Educational Development (AED) provide a self assessment with seven dimensions on maximizing labor market responsiveness. <http://www.aed.org/Publications/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=1354>

Design Element 2

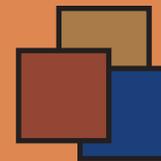
Leaders establish and communicate a vision, mission, and goals that are aligned with enabling federal and state policies and important components of the larger educational system.

- Hans Meeder provides a useful vision of CTE's contribution to the larger educational reform agenda in *The Perkins Act of 2006: Connecting Career and Technical Education with the College and Career Readiness Agenda*. <http://www.achieve.org/files/Achieve-CTEPolicyBrief-02-07-08.pdf>
- The Workforce Strategy Center offers a sample mission statement pertaining to career pathways development by partner organizations. http://www.workforcestrategy.org/publications/Sample_Mission_Statement.pdf

Design Element 3

Leaders encourage individuals at all levels to engage in shared decision making, encouraging the perspective of individuals and groups not always active in curriculum reform and organizational change.

- ChangingMinds.org provides resources on Transformational Leadership. http://changingminds.org/disciplines/leadership/styles/transformational_leadership.htm



- This tool, Characteristics of a Transformative Leader Self-Assessment, helps users determine areas of strength and needed improvement related to principles of Transformational Leadership. <http://literacy.kent.edu/Oasis/Leadership/over2.htm#char>

Design Element 4

Leaders nurture a collaborative culture of respect, high expectations, and demonstrable student outcomes and benefits for partners.

- James Anderson's book, *Driving Change Through Diversity and Globalization: Transformative Leadership in the Academy*, Appendix B (p. 183) includes an instrument measuring *Perceptions of Academic Leadership and Competency and Diversity Outcomes*.

Design Element 5

Leaders formalize genuine collaborative partnerships, including the roles and responsibilities of member entities and create a formal memorandum of understanding to ensure clarity and accountability.

- This tool developed by the Workforce Strategy Center provides essential points to consider when drafting agreements with employer partners. http://www.workforcesstrategy.org/publications/Employer_Engagement_Tool.pdf

Design Element 6

Leaders encourage the planning, implementation and evaluation of Programs of Study that are guided by active, joint secondary-postsecondary advisory committees.

- The Minnesota Department of Education provides a useful description of joint CTE advisory committees, including recommended processes and resources. <http://vfc6.project.mnscu.edu/>

Design Element 7

Leaders commit tangible and intangible resources including personnel, money, curriculum, technology, encouragement, and moral support.

- The Office of Community College Research and Leadership provides on its Web site a Programs of Study self-assessment that assesses partner roles, responsibilities and past and future contributions of education, business and industry, and other partners. <http://occrll.illinois.edu/sites/occrll.illinois.edu/files/Projects/perkins/Report/PoS-Self-Assessment.pdf>

Design Element 8

Leaders encourage that partners receive technical assistance and technology assistance to support Program of Study implementation and continuous improvement.

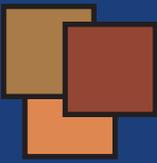
- The Community College Bridges to Opportunity Initiative funded by the Ford Foundation provides guidance on career pathways implementation. <http://www.communitycollegecentral.org/careerpathways/careerpathways03272007.pdf>

Appendix A

Appendix A includes a document developed by the Workforce Strategy Center that provides a useful description of career pathway roles and responsibilities.

“Leadership is not just the province of people at the top. Leadership can occur at all levels and by any individual... This notion is at the heart of the paradigm of transformational leadership. The principles derived from this theory are fundamental to effective leadership and are widely applicable to many segments of life, ranging from work to family to sport and classroom and, importantly, to issues of social change.”

Source: Bass, B. M., & Riggio, R. E. (2006, p. 2)



PRINCIPLE 2: ACCESS, EQUITY AND OPPORTUNITY

Principle Statement

Each and every student has access to equitable educational opportunities and services that enable their success



Principle Overview

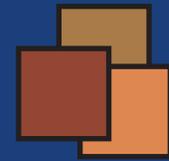
The second guiding principle is Access, Equity and Opportunity. Perkins IV supports development, improvement, and expanded accessibility to information regarding college and career awareness, planning, and preparation for students and parents, as appropriate. Perkins IV endorses equal access for students to a full range of academic and technical preparation programs and appropriate technology. Further, Perkins IV supports ‘special populations’ defined as individuals with disabilities, from economically disadvantaged families, in non-traditional fields, single parents, displaced homemakers, and individuals with limited English proficiency. Due to persistent efforts endorsed by Perkins IV and other federal and state legislation to reduce and eliminate barriers to access, equity, and opportunity, improvements have materialized. Nevertheless much more needs to be done to ensure that access, equity, and opportunity is a reality for all learners.

Access and Equity

Access and self-determination are frequently now a part of some people’s lives. However, many people are routinely excluded from, denied access to, and prevented from self-determined participation in opportunities that are linked to quality

of life (Blackorby & Wagner, 1996; Cameto & Levine, 2005; Wittenburg & Maag, 2002). In fact, while individuals, parents, leaders, educators, other professionals, and researchers continue to advocate for and work toward increased access, equity, and opportunity, it is far too common for people to experience barriers that preclude inclusion (DiLeo, 2007). This is especially true for those who have been historically under-represented, underserved, and labeled (e.g., students who are: ethnic and racial minority, first-generation college, low-income; immigrant; disabled or other special population).

The power of education is evident in the data. Youth who experience any one or more of the following predictors are more likely to leave school: 1) attend schools in urban school districts, 2) live at or below poverty, 3) are part of an ethnic minority group, 4) have a single parent, or 5) have a disability status. As a result of leaving, they are less likely to gain access to viable employment, further education, safe housing, supportive social relationships, and meaningful community inclusion (Swanson, 2008; Thurlow, Sinclair, & Johnson, 2002). Further, people with less than a high school education are nearly four times more likely to be unemployed than someone with some college education but no degree (Postsecondary Education Opportunity, 2008).



Access - permission, liberty, or ability to enter, approach, or pass to and from a place or to approach or communicate with a person or thing; freedom or ability to obtain or make use of something

Equity - justice according to natural law or right; *specifically*: freedom from bias or favoritism

Opportunity - a favorable juncture of circumstances; a good chance for advancement or progress

Source: Merriam-Webster Online <http://www.merriam-webster.com/>

and technical; special education; secondary and postsecondary education systems; and education, business and industry), low expectations, and insufficient professional development (Oertle, 2008). Nevertheless, halting the nation's decline in educational attainment requires diligent and persistent commitment to reforming policies, programs, and curricula that place students at a disadvantage and instead helping them to succeed (Green, 2006).

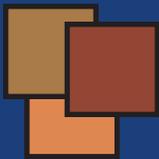
Various measures are being taken to address barriers to access, equity, and opportunity, resulting in some promising practices. Utilizing the resources and tools highlighted under this principle and its design elements has the potential to reduce and eliminate barriers for all learners by employing purposeful planning and design. With this approach, one expects and respects diverse learning using multiple strategies to connect teachers and students. This information is intended to provide access to evidence-based practices that offer policies, programs, and support services that maximize students' abilities through enhanced access, equity, and opportunity.

Education and Opportunity

Lower levels of educational attainment have been linked to poverty rates. Nearly 32% of people with no high school diploma live in poverty compared to 10% of people who have some college but less than a 4-year degree (Postsecondary Education Opportunity, 2008). The opportunity to earn a living and be self-supporting is a universally held goal. Access to meaningful education provides a connection to employment opportunities. The benefits of lifelong learning are powerful for individuals as well as for society-at-large. The connection between a person's educational attainment level and their quality of life is well established. Employment and independence are important pieces of the American dream, but achieving that dream requires a good education. Employment offers economic value, but also important social and psychological value (National Council on Disability, 2007). Student engagement in CTE supports the development of knowledge and skills that lead to accessing valuable education and employment opportunities.

The practices highlighted in this guidebook provide evidence-based ways for how to continue to improve educational outcomes by addressing the many barriers to education and employment that some students experience. Some of these systemic barriers include dropping out, limited access and opportunities for planning and preparation, inadequate self-determination knowledge and skills, limited opportunities for career development, lack of supportive relationships, inequity, fragile cross-system collaboration (e.g., general; career





PRINCIPLE 2: ACCESS, EQUITY AND OPPORTUNITY

In Perkins IV

Title I, SEC. 118. OCCUPATIONAL AND EMPLOYMENT INFORMATION.

(c) STATE LEVEL ACTIVITIES.— In order for a State to receive a grant under this section, the eligible agency and the Governor of the State shall jointly designate an entity in the State—

(1) to provide support for career guidance and academic counseling programs designed to promote improved career and education decision making by students (and parents, as appropriate) regarding education (including postsecondary education) and training options and preparations for high skill, high wage, or high demand occupations and non-traditional fields;

(2) to make available to students, parents, teachers, administrators, faculty, and career guidance and academic counselors, and to improve accessibility with respect to, information and planning resources that relate academic and career and technical educational preparation to career goals and expectations;

SEC. 122. STATE PLAN.

(c) PLAN CONTENTS.—The State plan shall include information that—

(9) describes the eligible agency's program strategies for special populations, including a description of how individuals who are members of the special populations—

(A) will be provided with equal access to activities assisted under this Act;

(B) will not be discriminated against on the basis of their status as members of the special populations; and

(C) will be provided with programs designed to enable the special populations to meet or exceed State adjusted levels of performance, and prepare special populations for further learning and for high skill, high wage, or high demand occupations;

In Practice

Men in Nursing at Lake Land College, Lake Land Partnerships for College and Career Success

In 2006, the Lake Land Partnerships for College and Career Success implemented an initiative aimed at promoting health careers for young men. Recognizing the nursing shortage in Central Illinois and that men are an untapped resource, the Partnership collaborated with Sarah Bush Lincoln Health Care Center, St Anthony Memorial Hospital, Pana Community Hospital, and Paris Community Hospital to implement the initiative.

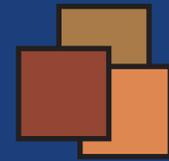
In the effort to increase male participation in health careers, key implementation strategies include:

- Creating a poster “Are You Man Enough to be a Nurse?” for use in high schools
- Hosting a one day intensive job shadowing event for males (sophomore and juniors)
- Organizing a Health Careers Camp for young men entering the 9th and 10th grades
- Designing an “Are You Man Enough to be a Nurse?” yearly planner/calendar
- Developing a transfer guide yearly planner/calendar

These strategies capitalized on promotional materials to inform prospective students about health careers, as well as deadlines for applications, testing and admission to the nursing programs. Lake Land Community College and the local Education for Employment System worked hard to distribute planners and materials to high school and college counselors, health occupation teachers and potential students. Evaluating their local efforts, over 90% of high school students participating in the program indicated they were interested in pursuing a nursing or other health care career field. The Partnership is hopeful of continued success as they make concerted efforts to recruit men into health careers.

“An educational system isn’t worth a great deal if it teaches young people how to make a living but doesn’t teach them how to make a life.”

Source Unknown



Principle 2 Design Elements at a Glance

1. Various strategies are used to recruit, enroll, and retain students including students who are **underserved, under-represented, and from special populations**.
2. Processes are in place to identify and overcome **gaps and barriers for learners** in order to foster access to education and inclusion in educational programs including flexible time and location of programs.
3. Processes are in place to assist students to overcome **barriers to initial entry or re-entry into secondary and postsecondary education**.
4. Appropriate **support services** are available to promote student success, help student become **college and career ready**, and meet their educational goals.
5. The physical, virtual, and learning spaces of programs and support services are **universally designed** to promote state-wide access to education and successful transition.
6. **Special population sub-groups** are clearly identified so that their progress and success can be quantified and compared with other populations.
7. Programs and support services reflect **learners' and their families'** perspectives and interests in education and transition while addressing changes in resources and family role across settings.
8. Students have **access to networks and resources** to assist with curriculum, their career exploration opportunities and work-based learning..

Tools and Resources

Design Element 1

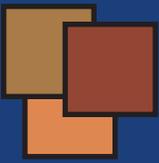
Various strategies are used to recruit, enroll, and retain students including students who are underserved, under-represented, and from special populations.

- Achieving the Dream is a multiyear Lumina Foundation initiative prioritizing community college student success and is primarily concerned about student groups that face significant barriers to success, including low-income and students of color. <http://www.achievingthedream.org/default.tp>
- The handbook, *Opening Doors to Postsecondary Education and Training*, assists students, parents, guidance counselors (secondary and postsecondary), and others on Individual Education Plan (IEP) teams to plan the postsecondary experience. <http://dpi.wi.gov/sped/pdf/tranopndrs.pdf>

Design Element 2

Processes are in place to identify and overcome gaps and barriers for learners in order to foster access to education and inclusion in educational programs including flexible time and location of programs.

- The Illinois School Psychologists Association provides many PowerPoint presentations, key readings and research, forms, documents, grants, calendar events, and more links related to Response to Intervention (RtI), Flex, Problem Solving, and 3-Tiered intervention models. <http://www.ilispa.org/modules/smartsection/item.php?itemid=52>
- The National Center on Response to Intervention is a well-recognized Web site for RtI information. <http://www.rti4success.org/>
- The New Look Project assists secondary and postsecondary CTE educators in identifying, developing, and strengthening programs for all special populations, with an emphasis on nontraditional for gender occupations. http://www.icspis.ilstu.edu/projects/index_newlook.html



PRINCIPLE 2: ACCESS, EQUITY AND OPPORTUNITY

Design Element 3

Processes are in place to assist students to overcome barriers to initial entry or re-entry into secondary and postsecondary education.

- Check & Connect focuses on students' behavior change, commitment to learning, and academic progress on multiple levels: academically, behaviorally, cognitively, and affectively. Begun at the K-12 level, Check & Connect is being expanded to students ages 18-30 who are at risk of dropping out of community college. <http://ici.umn.edu/checkandconnect/> and <http://www.evidencebasedprograms.org/static/interventions/education/checkconnect.htm>
- *Increasing Rates of School Completion: Moving From Policy and Research to Practice: A Manual for Policymakers, Administrators, and Educators* includes research about dropout prevention, summaries of a sample of dropout prevention programs, resources for more information, and reproducible handouts on the topic. <http://www.ncset.org/publications/essentialtools/dropout/intro.asp>

Design Element 4

Appropriate support services are available to promote student success, help students become college and career ready, and meet their educational goals.

- *AHEAD* is a professional association, actively involved in all facets of promoting full and equal participation by individuals with disabilities in higher education. <http://www.ahead.org/>
- *Guided Plan for Success (GPS)*, developed by the Horry-Georgetown Technical College Quality Enhancement Plan, is aimed at improving the total advising process to assist students to interact actively with their advisors to create a personalized academic plan, seek support services to enhance academic performance, and ultimately achieve academic goals. http://bluedasher.tynken.com/documents/hgtc//QEP_final.pdf

Design Element 5

The physical, virtual, and learning spaces of programs and support services are universally designed to promote state-wide access to education and successful transition.

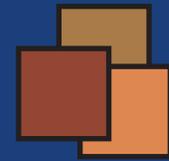
- Universal Design for Learning is a conceptual framework that combines knowledge, principles, and strategies from architecture, neuroscience, and education to create learning spaces that are inclusive and accessible for all learners by focusing on the person's strengths and preferences rather than their limitations. The following Web sites provide more information on Universal Design. <http://www.cast.org/research/udl/index.html>; <http://www.washington.edu/doit/Resources/udesign.html>
- The Center for Universal Design provides information on how physical spaces can be designed to be accessible to all by meeting the universal design principles. <http://www.design.ncsu.edu/cud/>

Design Element 6

Special population sub-groups are clearly identified so that their progress and success can be quantified and compared with other populations.

- The Diversity Scorecard provides a means to involve campus leaders in the generation of knowledge about student outcomes disaggregated by the various groups of interest (e.g., ethnicity, gender, disability). Baseline data provide a starting point for improvement and collective action that leads to equity. <http://www.uwsa.edu/oadd/equity/articles.htm>





- The Kuder Career Planning System offers innovative and comprehensive educational and career planning for all levels of involvement – middle school, high school, post-secondary, adults, and parents. <http://www.kuder.com/>
- The Self-Determined Career Development Model is based on the principles of self-determination and self-directed learning. At the heart of this model is self-directed planning for developing individual career goals and plans. <http://www.rcep7.org/MoreThanAJob/Mod1/02%20Model%2001.htm>

Appendix B

Appendix B includes a poster with tips for promoting equity in the classroom entitled, *18 Ways to Warm Up a Chilly Climate*.

Design Element 7

Programs and support services reflect learners' and their families' perspectives and interests in education and transition while addressing changes in resources and family role across settings.

- KnowHow2GO is a Lumina-funded, collaborative public-awareness effort designed to encourage students who are underserved, low-income in grades 8 to 12 and their families to plan for college. Web site information is available in both English and Spanish. <http://www.knowhow2go.org/index.php>
- EduGuide: Your Roadmap to Student Success is a non-profit community of parents, students, and educators who share what they have learned about the issues being faced. <http://www.eduguide.org/Parents/ParentsHome/tabid/107/Default.aspx>

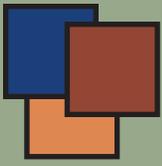
Design Element 8

Students have access to networks and resources to assist with curriculum, their career exploration opportunities and work-based learning.

- Career Cruising is an online, comprehensive career guidance system available to schools, employment agencies, libraries, colleges and universities. <http://www.career-cruising.com/>

“Persons without a high school education or equivalent are twice as likely to be unemployed and earn over \$8,700 less per year than high school graduates.”

Source: Illinois Department of Employment Security
(n.d., p. 2)



PRINCIPLE 3: ALIGNMENT AND TRANSITION

Principle Statement

Education and training providers, with input from business and industry, enhance alignment that facilitates student preparation and transition through the educational pipeline.



Principle Overview

Alignment and transition is the third guiding principle, and it addresses many of the structural components of Programs of Study. The implementation of Programs of Study under Perkins IV advances concepts and practices related to alignment and transition developed within Tech Prep programs under Perkins III. Programs of Study provide clear opportunities to strengthen the conversations and deliberate work of enhancing alignment among secondary, postsecondary, business and industry, and communities with the distinct goal of improving student transition through the educational pipeline.

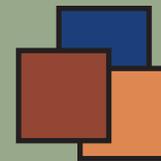
Why Alignment and Transition?

The need for enhanced alignment and transition is evident when one reviews existing student pipeline research and data. Reflective of national trends, Illinois' student pipeline data from 2004, based on a sample of 100 9th graders, show the declining rates of student outcomes at key transition points: 75.5% graduate from high school, 41.7% enter college directly, 28.4% enroll in the second year of college, and 19.9% graduate from college within 150% of the program time (Illinois Board of Higher Education, 2008). Consequently, the loss of students at each transition point represents missed opportunities to prepare students for further

education and viable careers. Just as importantly, these losses represent missed opportunities to enhance the state's economic, social and cultural well-being.

Each transition point in the pipeline can be disaggregated to better understand student transitions. For example, high school graduation rates by race/ethnicity for the Illinois class of 2005 are 83.5% for Asian, 83.2% for White, 56.3% for Hispanic, 52.4% for Black, and 34.4% for American Indian/Alaska Native (Diploma's Count, 2008). These data reveal a large disparity between graduation rates of Hispanic, Black, and American Indian/Alaska Native students and those of Asian and White students. These statistics highlight the need for increased alignment and transition for all students, including those enrolled in Programs of Study.

A key indicator of student success is found at the transition point between high school and college. Students who do not need to enroll in remedial/developmental education are more likely to complete their postsecondary degree or certificate than those who do. Data from a report of Illinois students enrolled in community college Tech Prep programs of study reveal that the percentage of first-year students who enrolled in at least one remedial college course was 41%, based on an average of 78% of consortia that reported these data (Kirby,



Maciente & Bragg, 2008). It is important to note that many postsecondary programs do not allow students who need remediation to formally enroll in the programs; this factor may account for the disparity between Illinois' five-year (FY03 – FY07) average rate of 40.6% and the 64.5% remediation rate reported in a national study of first year community college students (Adelman, 2005). Even though better than average, this statistic shows a large proportion of Tech Prep students finished high school underprepared for the transition to college credit-level courses.

These and other data on student transition illuminate the misalignment of educational systems. The need for enhanced alignment and transition is increasingly recognized at the national level with numerous educators, researchers, policy-makers, and organizations advocating for increased alignment between educational systems (see, for example, Bragg & Barnett, 2008; Conley, 2005; Venezia, Kirst, & Antonio, 2003; Lekes, Bragg, Loeb, Oleksiw, Marszalek, Brooks-LaRaviere, et al., 2007; and Karp, Calcagno, Hughes, Jeong, & Bailey 2007). Several publications suggest state and local activities to improve alignment and student transition include collaborative partnerships inclusive of multiple stakeholders; memorandums of understanding (MOUs) among partners; articulation agreements between educational entities; a commitment to secondary and postsecondary faculty engagement and communication; dual credit and dual enrollment; and the incorporation of valid and reliable standards.

Equally important is the use of reflective, thoughtful and sustained processes that systematically guide the state and local activities, including the use of evaluation, assessment and continuous improvement. In Illinois, many of these activities were initiated with the creation of local partnerships and the implementation of Tech Prep under Perkins III. Perkins IV and Programs of Study demand an expansion of these activities and processes to address, among other things, low high school graduation rates, educational gaps in student achievement, remediation, and the smooth transition to college and careers.

Alignment

This guiding principle addresses the necessity to align courses within Programs of Study with various academic and occupational standards at the state and national levels. At the state level, existing initiatives are underway to address the misalignment of educational standards across systems. Among them are the Common Core State Standards Initiative (CCSSI)

and the American Diploma Project (ADP), both national initiatives adopted by Illinois, and the College and Career Readiness Act passed by the state of Illinois in 2007. CCSSI and the ADP were adopted by Illinois in 2009 and 2008, respectively. The CCSSI (2009) initiative is led by the Council of Chief State School Officers and the National Governors Association (along with other partner organizations) aimed at “developing and adopting a common core of state standards” (n.p.) and increasing the rigor of state standards. Created by Achieve in partnership with the Education Trust and the Thomas B. Fordham Foundation in 2001, the ADP initiative has similar intentions but also seeks to align standards at all levels to improve transition. The College and Career Readiness Act was designed to prepare students for college and careers by engaging community colleges and high schools in a number of activities related to increasing college preparation, decreasing remediation, and improving alignment. Although preliminary, one-year evaluation results suggest that collaborations involving secondary and postsecondary schools improve alignment (Baber, Barrientos, Bragg, Castro, & Khan, 2009). These collaborative initiatives have relevance to Programs of Study as they seek to bridge the gap between secondary and postsecondary education to ensure the alignment of standards and curriculum, easing student transition.

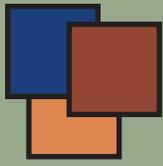
“Public high school students had on average 10 occupational programs available to them in 2002.”

Source : U.S. Department of Education (2009, n.p.)

Principle Three is strongly connected to Principle Four, Enhanced Curriculum and Instruction, particularly the design elements related to non-duplicative sequential curricula, standards alignment, and sequences of courses. One critical element of secondary and postsecondary alignment related to Principles Three and Four is the role of faculty involvement in the curriculum alignment process. Advocates of curriculum alignment emphasize the necessity for secondary and postsecondary faculty to jointly develop and periodically review curriculum to improve alignment, include appropriate standards, and create articulation agreements (Conley, 2005).

Advocates of curriculum alignment emphasize the necessity for secondary and postsecondary faculty to jointly develop and periodically review curriculum to improve alignment, include appropriate standards, and create articulation agreements (Conley, 2005).

One strategy strongly connected to Principles Three and Four is the curriculum mapping process. The National Research Center for Career and Technical Education (NRCCTE) used curriculum mapping with their Math-in-CTE model, currently in practice in some schools in Illinois. Curriculum mapping conducted as a part of this research project involved teams of teachers who first identified the essential CTE concepts and applications within the curriculum and then identified the related academic principles, aligning them to learning standards and other methods of assessment (Stone, Alfeld, Pearson,



PRINCIPLE 3: ALIGNMENT AND TRANSITION

Lewis, & Jenson, 2006). In this context, curriculum mapping concurrently addresses CTE and academic integration, standards alignment, and linkage to assessment and evaluation.

Another alignment process was developed by the Educational Policy Improvement Center (2009) and has relevance to Programs of Study. The Paired Course Alignment Process is designed to align a high school exit course with an entry-level college course to ensure students are college ready. The Educational Policy Improvement Center's process consists of six steps:

1. High school and college faculty submit syllabi and course documents through an online tool.
2. Faculty raters view submitted documents, rate the presence or absence of college readiness standards within each curriculum document, and determine where the alignment exists or is absent.
3. Results are integrated into a detailed discrepancy report containing an analysis of redundancies and gaps in the curriculum as measured by the degree of alignment with the college readiness standards.
4. Steering committees, curriculum experts, and design committees are established to guide pilot course development.
5. Faculty pilot paired courses in secondary and public institutions of higher education.
6. Moderation panels are developed to provide feedback to the course design teams, identifying any areas of concern regarding consistency and accuracy of college readiness preparation as presented by the developed course materials (Educational Improvement Center, 2009, p. 2).

Although this process involves two courses only (aligning high school exit with college entry requirements), it includes key tenants crucial to the alignment process, such as faculty leadership and collaboration between secondary and postsecondary education entities.

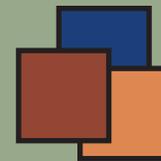
Transition

Just as alignment has connections to Principle Four, transition has similar connections to Principle Two: Access, Equity and Opportunity. Some design elements associated with Principle Two address support services and the people who implement them not only to ensure equity, but also to help prepare students for college and careers. As Programs of Study require pathways for students to transition to postsecondary education and careers, additional structures, programs and mechanisms are

necessary to enable smooth transitions. Successful transitions to college require students to have access to “college knowledge” that includes contextual skills and awareness (Conley, 2005, p. 30). According to Conley (2009), college knowledge includes “all the information – both formal and informal, stated and unstated – necessary to be eligible for admission, select an appropriate postsecondary institution, gain admission to a college, and obtain financial aid” (p. 25). In many secondary institutions, guidance counselors have the primary responsibility to provide students with college knowledge, but research suggests college counseling services vary widely for many reasons, and “schools face constraints on the availability of resources for college-related counseling” (Perna, Li, Rowan-Kenyon, Thomas, Bell, & Anderson, 2008, p. 153).

A federal program designed to provide support services for students from disadvantaged backgrounds is the TRIO Program. Part of the TRIO Program, Student Support Services, addresses college knowledge and college counseling, among other things, by providing non-academic (as well as academic) services such as admissions, financial aid counseling, and career guidance (Office of Postsecondary Education, 2009). Many state and local programs have similar efforts ultimately aimed at providing opportunities for more students to transition into college and improving those programs that currently exist. (See Principle Four for more about career development).





In Perkins IV

Title II, SEC. 203. TECH PREP PROGRAM.

(c) CONTENTS OF TECH PREP PROGRAM.—Each tech prep program shall—

- (1) be carried out under an articulation agreement between the participants in the consortium;
- (2) consist of a program of study that—
 - (A) combines—
 - (i) a minimum of 2 years of secondary education (as determined under State law); with
 - (ii)(I) a minimum of 2 years of postsecondary education in a nonduplicative, sequential course of study; or
 - (II) an apprenticeship program of not less than 2 years following secondary education instruction; and
 - (E) leads to technical skill proficiency, an industryrecognized credential, a certificate, or a degree, in a specific career field;
 - (F) leads to placement in high skill or high wage employment, or to further education;
- (3) include the development of tech prep programs for secondary education and postsecondary education that—
 - (A) meet academic standards developed by the State;
 - (B) link secondary schools and 2-year postsecondary institutions, and if possible and practicable, 4-year institutions of higher education, through—
 - (i) nonduplicative sequences of courses in career fields;
 - (ii) the use of articulation agreements; and
 - (iii) the investigation of opportunities for tech prep secondary education students to enroll concurrently in secondary education and postsecondary education coursework;

four levels of articulation are associated with the amount of alignment that exists or is required between high school and college courses. A description of the levels within this system follows.

Level 1: For programs that are offered only at the community college (e.g., Veterinary Technician), JJC has developed a prescriptive plan of study for students to take in high school that best prepares them for the postsecondary program. High school counselors can use this tool to advise students, helping them see the necessity to take the selected math and science courses that prepare them for the postsecondary coursework that leads to their chosen occupation.

Level 2: When courses or programs exist at both secondary and postsecondary levels, but there is a difference in course content between education levels, JJC coordinates an articulation meeting where faculty and department administrators from both levels review existing curriculum, identify gaps and implement a year-long effort to enhance high school curriculum to meet college level work.

Level 3: When at least 80% of secondary and postsecondary course content is aligned, an articulation agreement is signed by both entities. Upon successful completion of the course (a grade of a “B” or better) credit is held in escrow and awarded to students after their transition to JJC and completion of the next advanced course in the sequence. If the student completes the postsecondary course with a grade of C or better, the college credit held in escrow for the introductory course is then transcribed. The college is moving away from this model, replacing it with the dual credit model.

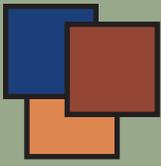
Level 4: For all dual credit courses offered in the district, the same content, texts, syllabus, expected outcomes and assessment instruments are required at both levels. Upon successful completion of the course, students earn high school credit and postsecondary credit, recorded on a JJC transcript.

In order to develop any of the four articulation agreements described above, teachers and administrators from the high schools and JJC attend a “Dual Credit Roundtable Meeting” where all content is reviewed by JJC faculty and articulation agreements are developed. All articulation agreements are revisited at least every two years and select agreements are revisited annually. The partnerships formed among JJC and surrounding secondary entities resulted in roughly 5,200 students participating in CTE dual credit courses. While the average transition rate for high school graduates to JJC is between 13% - 17%, nearly 30% of dual credit students transition directly to JJC after high school graduation in selected programs. According to Dan Kreidler, this has been a tremendously effective approach to increase CTE students transition to the College.

In Practice

BEST (Business and Education for Successful Transitions) Partnership Dual Credit Articulation at Joliet Junior College

Beginning Fall 2006, Dan Kreidler, former Tech Prep director at Joliet Junior College (JJC), collaborating with representatives from the 22 district high schools and two career centers developed a four-tier articulation system that has resulted in 182 articulation agreements for dual credit in CTE areas. The



PRINCIPLE 3: ALIGNMENT AND TRANSITION



Principle 3 Design Elements at a Glance

1. Non-duplicative curriculum is ensured through secondary and postsecondary collaboration for greater efficiency and alignment.
2. Course content and credit are aligned through articulation agreements which lead to industry recognized credentials and/or certification.
3. Curriculum is aligned with relevant educational, state, and industry standards and certifications.
4. Programs are designed with multiple entry and exit points to high-skill, high-wage, or high-demand occupations and encourage stackable credentials.
5. Programs include development of a coherent sequence of courses and programs that may lead to the baccalaureate degree.
6. Data-sharing agreements are developed for program improvement, program reporting, and the evaluation of student transition across educational levels to provide necessary support services and ensure student success.
7. Programs provide students with multiple opportunities to build and/or increase their “college knowledge” in order to make informed decisions about educational and occupational options.

Tools and Resources

Design Element 1

Non-duplicative curriculum is ensured through secondary and postsecondary collaboration for greater efficiency and alignment.

- The South Carolina Course Alignment Project is a multi-phase project that uses the *Paired Course Model* developed by the Educational Policy Improvement Center (EPIC) to align English, math and science to align content and skills, create pathways between high school and college, and improve a number of educational outcomes. http://www.epiconline.org/south_carolina/
- Current work in Illinois seeks to address alignment of standards across the educational system via the American Diploma Project. <http://www.isbe.net/ADP/default.htm>

Design Element 2

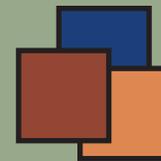
Course content and credit are aligned through articulation agreements that lead to industry recognized credentials and/or certification.

- The *California Statewide Career Pathways: Creating School to College Articulation* developed a number of articulation templates for CTE courses created by groups of secondary and postsecondary faculty in various content areas, including sample articulation templates and articulation agreements. <http://www.statewidepathways.org/index.html>
- Sample articulation agreements from the Arts/AV Technology & Communication Cluster in New Hampshire including outlines, goals, partner responsibilities, and terms and conditions. <http://www.ed.state.nh.us/education/doe/organization/adultlearning/career%20development/documents/VisualArtsArticulationAgreement.doc>

Design Element 3

Curriculum is aligned with relevant educational, state, and industry standards and certifications.

- The Common Core States Standards Initiative (CCSSI) was launched in early 2009 and is aimed at developing common core educational standards for all states. http://www.ccsso.org/federal_programs/13286.cfm



- National Occupational Competency Testing Institute (NOCTI) provides occupational competency assessments and services for secondary and postsecondary institutions, including sample assessments searchable by the 16 Career Clusters. <http://www.nocti.org/Cluster.cfm>
- The College Readiness Standards developed by ACT serve as predictors for future readiness with standards integrated with the Educational Planning and Assessment System (EPAS). <http://www.act.org/standard/>
- The Partnership for 21st Century Skills advocates for the infusion of 21st century skills into education, including core subjects and 21st century themes; learning and innovation skills; information, media and technology skills; and life and career skills. http://www.21stcenturyskills.org/documents/frameworkflyer_102607.pdf

Design Element 4

Programs are designed with multiple entry and exit points to high-skill, high-wage, or high-demand occupations and encourage stackable credentials.

- *Ohio Stackable Certificates: Models for Success* framework developed by Community Research Partners. http://www.communityresearchpartners.org/uploads/publications//Ohio_Stackable_Certificates_Models_for_Success.pdf
- Updated and relevant labor market data and employment projections are available at the Illinois Department of Employment Security (IDES) Web site. <http://lmi.ides.state.il.us/>

Design Element 5

Programs include development of a coherent sequence of courses and programs that may lead to the baccalaureate degree.

- *Improving Practitioner Knowledge to Increase Transfer (IPKIT)* is a module-based resource to facilitate student transfer from the community college to 4-year institutions, including institutional audits, focus groups, surveys, coding and data. <http://education.missouri.edu/orgs/ipkit/index.php>
- Applied baccalaureate degrees are offered increasingly by 2- and 4-year institutions providing transfer to the baccalaureate for students receiving applied associate degrees. Research is documenting the evolving status of these degrees and the extent to which they are implemented in the 50 states. <http://ocrl.illinois.edu/projects/lumina>

Design Element 6

Data-sharing agreements are developed for program improvement, program reporting, and the evaluation of student transition across educational levels to provide necessary support services and ensure student success.

- The Data Quality Campaign (DQC) provides a list of sample Memoranda of Understanding (MOU) and other types of data sharing agreements. <http://www.dataquality-campaign.org/resources/topics/28>

Design Element 7

Programs provide students with multiple opportunities to build and increase their “college knowledge” to make informed decisions about educational and occupational options.

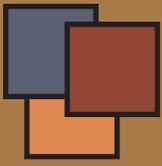
- David Conley’s book, *College Knowledge: What It Really Takes for Students to Succeed and What We Can Do to Get Them Ready*, is devoted to college readiness and provides a college readiness framework and standards for college success.
- City Universities of New York and the New York City Department of Education collaborated to implement the College Now program that allows high school students to take college courses, visit college campuses and learn college expectations and culture. <http://collegenow.cuny.edu/>

Appendix C

Appendix C includes an overview of the *South Carolina Course Alignment Project Design Process for Paired Courses*.

“Learning with understanding is more likely to promote transfer than simply memorizing information from a text or a lecture.”

Source: Bransford, J., Brown, A. L., & Cocking, R. R. (Eds.) (1999, p. 224)



PRINCIPLE 4: ENHANCED CURRICULUM AND INSTRUCTION

Principle Statement

Curriculum and pedagogy involve rigorous and relevant instruction that enhances learning and enables students to attain academic and technical standards and credentials.



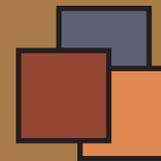
Principle Overview

The fourth guiding principle is Enhanced Curriculum and Instruction. Many educational reform efforts share a common goal: Improvement of curriculum and instruction. Illinois' approach to Programs of Study is centered on activities that improve the content and processes by which high schools and community colleges implement rigorous, non-duplicative coursework and effective instructional practices that result in more students achieving the credentials necessary to obtain high-skill, high-demand or high-wage jobs. To achieve this goal requires alignment within and across educational levels. Instructional practices need to be supported by proven and practical approaches that enable more students to transition to educational levels that ensure they are prepared for the dynamic environment of today's workplace. The eight design elements associated with Principle Four can achieve this goal, if implemented collectively.

Curriculum Reform

Lasting curriculum reform efforts require that teachers and administrators continuously explore innovative and proven curricular and pedagogical strategies that achieve student and program outcomes, including transition. Perkins IV requires "effective integration of academics and CTE and . . . scientifically

based research and data to improve instruction" (Association for Career and Technical Education, 2006, p. 86). Curriculum integration has been a fundamental curriculum reform strategy in the Perkins legislation. As one of five major emphases in Perkins IV, curriculum integration is intended to continue to develop and expand. It helps reverse the prolonged educational trend that separated academic subjects from applications in practice. The result was a dualistic curricular approach that limited the economic mobility of some students who chose, or were relegated to, vocational study. "Vocational education" acquired a reputation as a lesser form of education for students to simply "learn a trade" (Law, 1994). This consequence exacerbated as technical advances moved the industrial-based economy to a knowledge-based economy, one which requires knowledge workers who possess not only technical knowledge but also critical thinking and communication skills. Changing the name of 'vocational' education to 'career and technical' education was a deliberate strategy in Perkins IV to represent the necessity to prepare all students with the rigorous academic and career and technical skills that almost all careers require. Those careers also require that students transition to college, expanding access to include more students whose secondary education path includes concentration in CTE courses. According to many educational reform leaders, the core curriculum that all high school students should receive includes rigorous and relevant, academic and technical preparation. "Advances in career and technical edu-



cation pedagogy have demonstrated the value of rigor for high school graduates going directly into the workforce, along with the capacity to imbed rigorous coursework in an applied CTE curriculum” (Rainwater & Mize, 2008, p. 6).

Curriculum integration can be effectively implemented by contextualizing academic and occupational-related content. Contextualized instruction involves developing skills, knowledge, and attitudes drawn from the context in which they will be used, using relative or actual materials and situations from that context. In an iterative process, new information is presented in a context familiar to the learners and once understood, is again introduced in increasingly abstract applications. Bragg and Barnett (2009) reported that contextualized curriculum contributed to accelerated learning in several of six community colleges designed as leadership colleges involved in the Breaking Through initiative funded by the Charles Stewart Mott Foundation. For example, the Community College of Denver targeted developmental (math, reading and writing) curriculum for low-skilled adults and contextualized it with career exploration (Bragg & Barnett, 2009).

Improving Transition

Although alignment and transition comprise a separate guiding principle in the framework, details that relate to curriculum development are appropriate in this section of the guide. Teachers in the American secondary and postsecondary education system are described as working in isolation, not often able to coordinate or share lessons and activities within and across grade levels. “In many school districts, no forum exists for meeting and hammering out skill work both horizontally and vertically”, what Jacobs calls vertical planning. “As a result, communication about language [and other knowledge and] skills across disciplines has been hampered,” (Jacobs, 2006, p. 10). The process of curriculum mapping provides a forum for communication across and among levels; discovery of gaps and redundancies in content; identification of appropriate assessments, and; the creation of curriculum mapping documents that can be shared electronically among teachers at all grade levels. Jacobs identified three essential questions that teachers and administrators should consider when implementing the curriculum mapping process: (a) How can we structure school decision making to support cumulative learning? (b) How should we design our curriculum to prepare learners for their future? And (c) How does curriculum mapping serve as a hub for all initiatives regarding teaching and learning?

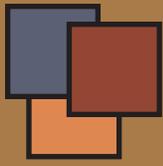
Within Programs of Study, alignment is necessary between orientation and training level courses. Orientation level courses provide career awareness, introduce and support basic work skills, and provide exposure to the essential knowledge and skills common to a broad range of occupations that fall within a career cluster. Orientation level courses must be aligned with

the more specific training level courses in which students acquire more detailed, pathway level knowledge and skills that prepare them for technical skill credentials and transition to college level work. Perkins IV emphasizes that secondary CTE courses, both at the orientation and training levels, contain the rigor necessary to prepare students for transition to college and careers.

Educators and employers agree that the educational preparation for college and careers must be the same. However, numerous reports reveal an alarming percentage of students are not academically prepared to enter college credit-level courses. Further, employers commonly complain that students are not proficient in basic math and literacy skills and the basic workplace skills of communication, teamwork, and more. “Lack of rigorous academic coursework at the secondary level contributes to students’ inability to enter college ready to engage in college-level studies, sometimes referred to as “college readiness” (Baber, Barrientos, Bragg, Castro, & Khan, 2009, p. 7). In 2007, the Illinois legislature passed the College and Career Readiness Act that encourages high schools to identify students who need additional academic preparation so they can receive the remedial instruction and supplementary services necessary that prepare them to enter college credit courses. Five pilot colleges in partnership with high schools are developing programs to prepare students for college level work.

While state policy and support of a few pilot projects is an important step, the goal of improving college readiness for Illinois’ CTE students will also benefit from coordinated and comprehensive career exploration and development activities that involve teachers, counselors, students, and parents. Perkins IV specifies students and their parents should be provided with career guidance and academic counseling about postsecondary education, including the baccalaureate level. If Perkins is to make a significant contribution to educational reform that increases student transition, implementation of Programs of Study should include a more deliberate effort to engage school counselors to provide more students and their parents with the requisite “college knowledge” needed to transition to education beyond high school. It is especially critical for students who are the first in their families to consider college or who are from low-income families. Studies show that low-income or first generation college students, including those with high levels of educational achievement, are much less likely to transition to college than their middle-income peers or those whose parents have some college experience (Vargas, 2004).

In 2008, the Illinois Career Development Task Force released findings and recommendations of its comprehensive study, calling for a more comprehensive and aligned career development system in Illinois. Recommendations for immediate action include determining and coordinating current resources including the state’s web-accessible career information sys-



PRINCIPLE 4: ENHANCED CURRICULUM AND INSTRUCTION

tem; integrating national career development standards with the state's learning standards; supporting enhanced networking among state and local leaders; and increasing funding. Other recommended efforts include capitalizing on Perkins Programs of Study and the career development-related suggestions in the Act (Williams, Bragg & Makela, 2008).

A curriculum reform effort that relies upon curriculum alignment and has been proven to increase transition to college is offering high school students the opportunity to earn college credit while still enrolled in high school. Dual credit courses exemplify the potential that rigorous preparation and aligned curriculum can have on students' transition to college. A recent report to the Illinois General assembly indicated that Illinois experienced a 120% growth in dual credit offerings between 2002 and 2008 (Illinois Dual Credit Task Force, 2008). The Task Force report, like other research on dual and concurrent enrollment programs, identified benefits for dual credit participants that include reducing college costs, speeding time to degree, improving curriculum options for high school students, facilitating the transition to college, enhancing the connections between education levels, and offering opportunities for improving degree attainment for underserved populations. In spite of well documented advantages for some students, there remain concerns related to implementing dual credit programs that apply to both academic and career and technical dual credit courses. Research conducted by staff at the Office of Community College Research and Leadership corroborates other national studies that point to questions that remain about quality, uneven distribution of dual credit opportunities to students, and the need for more rigorous research about this important educational reform effort (<http://ocrl.illinois.edu/taxonomy/term/11>). Educators and administrators who develop and expand dual credit opportunities for students enrolled in Programs of Study should devote effort and resources to reach the goals the Task Force identified: (a) ensure quality, (b) improve access, equity and attainment, and (c) increase accountability (Illinois Dual Credit Task Force, 2008).

Engaging Partners and Employing Technology

Educators increasingly rely on partners outside of education to provide students with resources and experiences not available within schools. As local and state budgets have experienced shortfalls, education has turned to the private sector to create partnerships, a trend that increased nearly 35% between 1990 and 2001 (Lesley, 2008). Too often, education approaches business to partner in a "paternalistic 'adopt us'" approach, not a sustainable model (Lesley, 2008, p 4). There is evidence that some partnerships made up of educational institutions and businesses are working to create more mutual and equal arrangements that achieve shared goals. Microsoft's Partners in Learning, a five-year global initiative designed to cultivate innovative uses of technology in education and teacher professional development, resulted in the discovery of seven critical

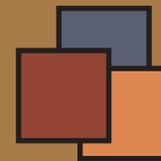
elements to consider when establishing a partnership: (a) the degree of mutuality; (b) the retention of organizational identity; (c) readiness and ability to communicate and collaborate effectively; (d) transparent partner motivations, expectations, and benefits; (e) leadership and shared vision; (f) willingness to embrace change and remain flexible, and; (g) a clear plan with goals, objectives, and accountability (Lesley, 2008, p. 5). Administrators and educators implementing Programs of Study and working with current or future advisory groups can learn from these elements as they continue to develop the external partnerships so critical to enhancing students' experiences in career and technical education.

Perkins IV requires that Programs of Study "build student competence in technical skills . . . [and use] educational technology and distance learning to involve all the consortium partners more fully in the development and operations of programs [that lead] to technical skill proficiency. . . ." (ACTE, 2006, pp. 65-66). Jenkins (2002) warned of the expanding "digital job divide" that separates workers with few or no technical skills in semi-skilled jobs that offer low wages from workers who hold "knowledge jobs" that require current technical and problem-solving skills and offer good salaries and career advancement potential (p. 4). The list of essential knowledge and skills that apply to all career clusters includes many related to the use of technology, specifically in the categories of *Communications* and *Information Technology Applications*.

The technical infrastructure of schools and the technical expertise of the instructors help shape the boundaries of learning. Many students' experiences outside of school are technologically rich, making it "increasingly difficult for educators to motivate and engage a large majority of students in academic learning with traditional pedagogy" (Partnership for 21st Century Skills, 2009, p. 17). At the same time, many students do not have access to information technology outside the school setting, resulting in inequality of literacy in this essential skill. Having access to information and diverse populations of people via the Internet and the ability to use educational games and simulation software stretches geographic and resource limitations of schools and students. Used effectively, technology allows teachers and students to mimic the technologically dependent, globally connected environment within which students will be eventually employed. According to a review of research review of seven major technology types used in primary and secondary education, across all uses in all content areas, technology provides a small but significant increase in learning when implemented with fidelity (Partnership for 21st Century Skills, 2009).

Assessing Outcomes

Seamless transition among educational levels requires not only that the curriculum be aligned among levels, but also include assessments that (a) accurately measure academic and technical skill attainment and (b) are aligned with further assessments that



In Perkins IV

Title II, SEC. 203. TECH PREP PROGRAM.

(c) CONTENTS OF TECH PREP PROGRAM.—Each tech prep program shall—

- (1) be carried out under an articulation agreement between the participants in the consortium;
- (2) consist of a program of study
- (3) include the development of tech prep programs for secondary education and postsecondary education that—
 - (A) meet academic standards developed by the State;
 - (B) link secondary schools and 2-year postsecondary institutions, and if possible and practicable, 4-year institutions of higher education, through—
 - (i) nonduplicative sequences of courses in career fields;
 - (ii) the use of articulation agreements; and
 - (iii) the investigation of opportunities for tech prep secondary education students to enroll concurrently in secondary education and postsecondary education coursework;
 - (C) use, if appropriate and available, work-based or worksite learning experiences in conjunction with business and all aspects of an industry; and
 - (D) use educational technology and distance learning, as appropriate, to involve all the participants in the consortium more fully in the development and operation of programs;

determine placement in college-credit courses and programs or achievement of industry recognized credentials. In Perkins IV, CTE teachers face increasing accountability measures that require the curriculum provides the technical and academic content necessary to demonstrate competence on local, state and national assessments of academic and technical skills. One way to accomplish that goal is to create or use “thoughtful measures of [a student’s] ability to apply and demonstrate knowledge in complex situations” (Partnership for 21st Century Skills, 2009, p.1). Student learning is best determined through multiple measures of assessment: traditional and authentic. Traditional assessment methods determine students’ acquisition of discrete facts or skills, typically through multiple choice and fill in the blank types of tests. Authentic assessments determine the compilation of multiple types and sources of information assessed in multiple ways e.g., scientific investigation, purposeful writing, issue debates, and solving real world problems. In this model, teachers first determine what students need to be able to do and then plan the lessons and activities that prepare students to apply their knowledge. Four steps that help teachers create authentic

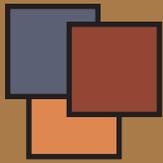
assessments include (a) identifying the standards; (b) developing tasks the students must perform that indicate they have met the standards; (c) identifying the criteria that if present, indicate acceptable performance, and; (d) for each criterion, identifying two or more levels of performance so that discrimination among performance levels can be determined (Mueller, 2008). This process can be enhanced by involving business and industry partners in course development and in identifying standards and assessment tasks that help determine performance levels. Wiggins and McTighe (1999) emphasize the critical role teachers play in assessment and the order in which assessment of learning should be considered in the curriculum development process. In their text, *Understanding by Design*, Wiggins and McTighe (2005) describe a 3-stage, “backward design” process in which determining appropriate, multiple assessments comes before designing lessons and activities. The text includes many graphic organizers, assessment prompts, review protocols, and curriculum-mapping tools.

In Practice

Creating a Health Occupations Orientation Course

A pilot project to develop a 9th grade Health Science Orientation Level Course was launched in 2008. Members of the team included The Career Partnership; a team of teachers and administrators from Wheeling High School; and representatives from the Department of Commerce and Economic Opportunity (DCEO), the Metropolitan Chicago Healthcare Council (MCHC), the Illinois State Board of Education, and the Illinois Community College Board.

Through the involvement of MCHC, professionals from a variety of healthcare occupations within the Chicago-land area played a major role in answering the question, “What do health services business partners deem as essential to entering health careers?” The business partners reviewed the essential and cluster level knowledge and skills for the Health Science cluster. Their validation process provided the solid foundation and rationale for the curriculum. Next, the pilot site team made up of science and health teachers, counselors, a principal, administrators, and parents (who were also healthcare professionals) further reviewed the essential and cluster level knowledge and skill statements to determine if the skills should be part of the curriculum and when they should occur in the program sequence. Each member contributed to the discussion to ensure that every aspect of the Illinois Program of Study design elements for Enhanced Curriculum and Instruction were met. The team also devoted a day to a meeting with DCEO and the Jewish Vocational League to review the curriculum and to crosswalk its intended outcomes with the high school’s Explore, PSAT, and ACT exams; the Illinois Learning Standards; and college transition assessments, including the ACT, COMPASS, and ISAT.



PRINCIPLE 4: ENHANCED CURRICULUM AND INSTRUCTION



Principle 4 Design Elements at a Glance

1. Programs **integrate** academic and career and technical content to create **contextual instruction** that engages student interest and improves learning outcomes.
2. Programs infuse **career exploration, development and guidance** throughout the educational system.
3. Programs strongly encourage **dual credit opportunities** in career and technical education and academic courses to accelerate student learning and encourage transition to and success in college-level occupational programs.
4. Programs involve **business, industry and community partners** to provide relevant instructional opportunities (e.g., work-based learning, access to current technology, mentoring and leadership development, cross-cluster projects).
5. Programs' cluster-level orientation courses have a rigorous foundation of **CTE and academic content** that prepares students for more advanced academic and training level CTE courses.
6. Curriculum and pedagogy are designed to include the rigor and support services necessary to reduce the need for **remedial/developmental education**.
7. Programs include **multiple measures of assessment** designed for diverse learning styles that accurately determine acquisition of both academic and technical knowledge and skills.
8. Programs develop, improve or expand the use of **technology** to foster students' technical skills and reach more learners.

The curriculum will debut Fall 2009 with a single instructor teaching two sections. Instruction in the orientation course involves contextual and problem-based learning and is aligned with training level courses that prepare students to take the certification exams for CNA and EMT. Students also have the opportunity to take three dual credit courses in the secondary sequence. Smartboard technology will be employed to help students and teachers communicate. Each student will be issued a laptop with mobile web access so they can review, practice, and improve their academic skills. Lessons will include the use of Career Cruising, a web-based research tool. Local business and industry partners will be requested to allow staged filming at area healthcare related worksites, avoiding violations with the healthcare privacy law.

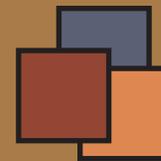
Karen Johnson, the EFE system director who led the effort, stated, "When it comes to pilot sites, leadership is everything. If the principal is also the curriculum leader in the building, put on your track shoes; you'll be running to keep up! Laz Lopez, the Principal at Wheeling High school, is this type of leader. His teachers are accustomed to teaming across curricular lines because he's established this practice. Working with a project like this and all the various groups and their agendas is a lot like democracy. It's not efficient and it's often times messy. But you learn so much in the process and the result is so much richer that it is well worth it."

Tools and Resources

Design Element 1

Programs integrate academic and career and technical content to create contextual instruction that engages student interest and improves learning outcomes.

- *A Contextualized Approach to Curriculum and Instruction* is part of a series of publications that reflect the research-based principles established by the National Institute for Literacy's Equipped for the Future (EFF) initiative. This document includes the research that supports contextualized learning, concepts and terms, examples of implementation, and suggestions for adoption. <http://eff.cls.utk.edu/PDF/03research-practice.pdf>
- The National Research Center for Career and Technical Education developed the Math-in-CTE model. Sample curriculum maps that show integration of academic and CTE content are provided. <http://www.cehd.umn.edu/NRCCTE/Math-In/CurriculumMaps.html>
- Scaffolding Learning is an example of the learning-centered teaching process, a model that builds upon connections from what the student already knows to new knowledge and skills. <http://www.myread.org/scaffolding.htm>



Design Element 2

Programs infuse career exploration, development and guidance throughout the educational system.

- The *National Career Development Guidelines* outlines the domains, goals, learning stages and indicators of a comprehensive career development system. <http://cte.ed.gov/acrn/ncdg/documents/NCDG.pdf>
- *Comprehensive Career Development for Illinois: Findings and Recommendations of the Illinois Career Development Task Force* presents the need for an enhanced, comprehensive career development system in Illinois. The report supports the alignment of career development with the P-20 approach that is being adopted in Illinois and includes recommendations to help guide state and local leaders in achieving that goal. http://ocrl.illinois.edu/sites/ocrl.illinois.edu/files/Projects/careerdev/Report/CDTF_Final_Report.pdf

Design Element 3

Programs strongly encourage dual credit opportunities in career and technical education and academic courses to accelerate student learning and encourage transition to and success in college-level occupational programs.

- The full report from the Illinois Dual Credit Task Force to the General Assembly includes specific strategies to help achieve the goals for increasing and improving dual credit courses. <http://www.ibhe.state.il.us/DualCredit/materials/DCTFReport.pdf>

Design Element 4

Programs involve business, industry and community partners to provide relevant instructional opportunities (e.g., work-based learning, access to current technology, mentoring and leadership development, etc.)

- *Building Effective Employer Relations* includes lessons learned about working with employers such as choosing the right partners, nurturing relationships, creating alliances, and establishing effective partnerships. <http://www.aspenwsi.org/Publications/04-062.pdf>
- *Establishing Public/Private Partnerships* is a White Paper produced by the Microsoft Corporation. It includes lessons learned from three case studies about the critical elements that business, governmental agencies and school districts should consider before engaging in a true public/private partnership. <http://www.metiri.com/PDFs/Microsoft-Metiri-PublicPrivatePartnerships.pdf>

Design Element 5

Programs' cluster-level orientation courses have a rigorous foundation of CTE and academic content that prepares students for more advanced academic and training level CTE courses.

- The *CTE Curriculum Revitalization Initiative* is a CTE resource center aimed at improving the instruction and the delivery of CTE content. <http://www.ilcte.org/>

Design Element 6

Curriculum and pedagogy are designed to include the rigor and support services necessary to reduce the need for remedial/developmental education.

- *Raising Graduation Rates in an Era of High Standards* is a White Paper, sponsored by Achieve and Jobs for the Future and directed at decision makers, including policy-makers and administrators. It illustrates five strategies that can achieve college readiness and graduation for all students. <http://www.pathwaystocollege.net/PCNLibrary/ViewBiblio.aspx?aid=17852>

Design Element 7

Programs include multiple measures of assessment designed for diverse learning styles that accurately determine acquisition of both academic and technical knowledge and skills.

- The *Authentic Assessment Toolbox* was created by a community college instructor in Illinois and includes basic information about authentic assessment as well as standards, tasks, rubrics, examples and a glossary. <http://jonathan.mueller.faculty.noctrl.edu/toolbox/index.htm>
- *Classroom Assessment Techniques (CATs)*, developed by Terry Angelo and Patricia Cross, include multiple strategies that teachers can use to determine student acquisition of knowledge. This Web site provides sample techniques including their description, what to do with the data, and the time required to implement them. <http://www.ntlf.com/html/lib/bib/assess.htm>

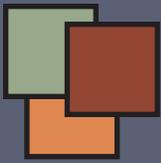
Design Element 8

Programs develop, improve or expand the use of technology to foster students' technical skills and reach more learners.

- The International Society for Technology in Education is a non-profit organization that provides leadership, advocacy, resources, publications and more to its members. The group established the National Educational Technology Standards. http://www.iste.org/Content/NavigationMenu/NETS/ForTeachers/2008Standards/NETS_T_Standards_Final.pdf

Appendix D

Appendix D includes a crosswalk of ICCB Administrative Rules and NACEP Standards originally found in Appendix G (pp 43 – 47) of the *Illinois Dual Credit Task Force Report to the General Assembly*.



Principle Statement

Comprehensive and continuous professional development that impacts teaching and learning is delivered to enhance the recruitment, preparation and retention of qualified instructional and administrative staff.



Principle Overview

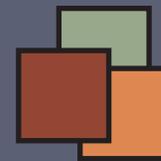
Professional Preparation and Development is the fifth guiding principle. With the reauthorization of the federal legislation, Perkins IV requires states to ensure that professional development is provided at both the postsecondary and secondary levels. According to the federal government, professional development “serves as the bridge between where prospective and experienced educators are now and where they will need to be to meet the new challenges of guiding all students to higher standards of learning and development” (U.S. Department of Education, 2000, n.p.).

Importance of Professional Development

Professional development offers multiple benefits to education professionals on all levels -- secondary and postsecondary -- including teachers, administrators, counselors, and others. Professional development ensures that instructors remain current with developments in the field and understand new technologies and practices in the workplace, allowing them to introduce innovative teaching and learning practices. As teachers continue to face an array of complex challenges, including teaching increasingly diverse student populations, integrating new technology in the classroom, and meeting rigorous academic standards and goals, it is critical that they are prepared to enhance and build on their instructional knowledge and

pedagogy (National Commission on Teaching and America’s Future, 1996). Career and technical education teachers’ roles are complex as they require skills that reach beyond the typical individual classroom, including teaching occupational skills, integrating academic and CTE content, coordinating school- and work-based learning, and preparing students for postsecondary education and training and employment.

Providing opportunities for professional development also ensures that teachers who have been trained and prepared at different levels have a consistent and solid foundation of knowledge and skills needed for success. Career and technical education teachers enter the teaching profession through a variety of traditional and alternative certification routes. Ruhland and Bremer (2002) compared CTE teachers’ perceptions of their first year of teaching based on their preparation in either a traditional or an alternative certification program. Results showed differences in CTE teachers’ perceptions, with traditionally trained CTE teachers perceiving themselves more prepared in pedagogy than alternatively prepared CTE teachers. By contrast, alternatively trained CTE teachers perceived themselves more prepared in subject matter knowledge than traditionally-prepared CTE teachers. Both groups indicated the need for professional development and ongoing support in classroom management and serving special populations, especially students with disabilities.



In addition to instructional staff, professional development is important for secondary and postsecondary administrators and staff to create a culture of continuous improvement. A key to school improvement is the willingness and ability of school principals to assume the role of staff developers who make it their mission to “alter the professional practices, beliefs, and understandings of school personnel toward an articulated end” (Fielding & Schalock, 1985, p. 14). Principals can fulfill this role by creating an environment that promotes the growth and development of staff and professionals in their schools. Newmann, King and Youngs (2000) found a strong association between comprehensive professional development and the leadership role exerted by principals. Sparks (2002) elaborates on high quality staff development by describing a “professional learning team whose members accept a collective responsibility for the academic achievement of all students” that affects the “knowledge, attitudes, and practices of individual teachers, administrators, and other school employees” (p. I-4). Ultimately, professional development is important because studies show strong links between high-quality teaching and student achievement (Sparks & Hirsh, 2000). According to Sparks (2002), increasing teacher effectiveness makes a difference in student learning. “In math, students whose teachers have received professional development in working with special populations outperform their peers by more than a full grade level, and students whose teachers have received professional development in higher order thinking skills outperform their peers by 40% of a grade level” (Wenglinsky, 2000, p. 7). The study also found a similar positive relationship between students’ science-test scores and their teachers’ participation in professional-development about how to provide hands-on laboratory skills (Wenglinsky, 2000).

Qualities of Effective Professional Development

When examining strategies for effective professional development, a number of important qualities emerge. The literature underscores the importance of professional development being coherent, sustained and comprehensive. Cook and Fine (1997) claim professional development “must become part of the daily work life of educators” (p. 1). Kedzior and Fifield (2004) also relate that effective teacher professional development should be a part of daily work and be an ongoing, coherent and integrated process. They list the following ten qualities of effective professional development:

- Content-focused: Focusing on subject matter considering students’ prior content knowledge
- Extended: Spanning a period of time, rather than single sessions
- Collaborative: Including peers, external researchers, program developers, and others

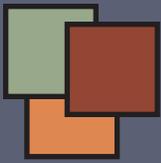
- Part of daily work: Integrating with day-to-day activities
- Ongoing: Including follow-up and support for advancement
- Coherent and integrated: Aligning with teachers’ goals, standards, and assessments
- Inquiry-based: Promoting ongoing inquiry and reflection
- Teacher-driven: Responding to teachers’ needs and interests
- Informed by student performance: Analyzing and using student outcomes data
- Self-evaluation: Incorporating reflective activities to guide development

Guskey (2000) examined 13 lists that identified characteristics of effective professional development. The three elements cited most often include starting with standards; aligning professional development with other reform initiatives; and offering professional development that is ongoing, career embedded, and sustained. These qualities directly relate to Perkins IV and also reflect many of the design elements associated with this principle.

Despite the literature emphasizing the importance of comprehensive and sustained professional development, many teachers receive the bulk of their professional development through one-day workshops. Survey data from the National Center for Education Statistics (NCES) revealed responses from teachers that in 2000, teachers typically spent 1 to 8 hours (a day or less) in professional development on any one content area. Consequently, the proportion of teachers who felt their professional-development activity significantly improved their teaching ranged from 12% to 27% only (NCES, 2001). In contrast, the Consortium of Chicago School Research found that “high quality” professional-development programs—i.e., those characterized by “sustained, coherent study; collaborative learning; time for classroom experimentation; and follow-up”—had a significant effect on teachers’ instructional practices (Smylie et al., 2001, p. 22).

Implementing Effective Professional Development

Hirsh (2004) described the process of creating a comprehensive professional development plan as including context, or policies to guide system planning and operations; process, or procedures for developing action plans; and content, or action plans that outline what adults will learn and do to achieve their goals. Hirsh believes that “a planning team knowledgeable and skillful in professional development” and system leaders who have connections to various schools should be involved to increase the quality of professional development (p. 14). The National Staff Development Council (NSDC), under the facilitation of Executive Director Stephanie



PRINCIPLE 5: PROFESSIONAL PREPARATION AND DEVELOPMENT

Hirsh, has developed a list of standards of staff development that are divided into the three categories of context, process, and content. These standards include leadership, data and research, collaboration, and quality teaching (<http://www.nsd.org/educatorindex.htm>).



Hassel (1999) outlined three steps for developing award-winning professional development programs. The first step is designing professional development, involving all relevant participants in the designing process. Additionally, designing professional development requires clear plans that include elements such as a needs assessment process, a review of relevant research, resources available to support the development, and professional development content that supports the organization's long-term plan. The second step of the process is implementing professional development. Hassel observes that once the professional development practice has been developed and launched, it is important to maintain ongoing research to stay aware of best practices in the field. Other key parts of this step are ensuring that school/district policies support the implementation of professional development, ensuring that resources are available to continue implementation of the practice, and making professional development a part of everyday life at school. The final step in creating effective professional development programs is evaluating and improving. Part of this evaluation includes determining evaluation measures, collecting necessary data, and using data to improve the professional development process.

In Perkins IV

Title I, SEC. 122. STATE PLAN.

(c) PLAN CONTENTS.—The State plan shall include information that—

(2) describes how comprehensive professional development (including initial teacher preparation and activities that support recruitment) for career and technical education teachers, faculty, administrators, and career guidance and academic counselors will be provided, especially professional development that—

(A) promotes the integration of coherent and rigorous academic content standards and career and technical education curricula, including through opportunities for the appropriate academic and career and technical education teachers to jointly develop and implement curricula and pedagogical strategies, as appropriate;

(B) increases the percentage of teachers that meet teacher certification or licensing requirements;

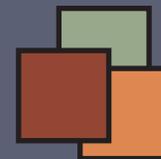
(C) is high quality, sustained, intensive, and focused on instruction, and increases the academic knowledge and understanding of industry standards, as appropriate, of career and technical education teachers;

(D) encourages applied learning that contributes to the academic and career and technical knowledge of the student;

(E) provides the knowledge and skills needed to work with and improve instruction for special populations;

(F) assists in accessing and utilizing data, including data provided under section 118, student achievement data, and data from assessments; and

(G) promotes integration with professional development activities that the State carries out under title II of the Elementary and Secondary Education Act of 1965 and title II of the Higher Education Act of 1965;



In Practice

Providing Specialized Professional Development in Illinois: Illinois Center for Specialized Professional Support

The Illinois Center for Specialized Professional Support (ICSPS) has over 30 years of experience in providing targeted professional development for CTE professionals concerning special populations. To connect various audiences and organizations, ICSPS offers presentations and an electronic networking directory of people at career centers, EFE systems, regional offices of education (ROEs), community colleges, special education agencies, and other resource agencies. ICSPS addresses comprehensive professional development which refers to professional development activities that provide follow-through.

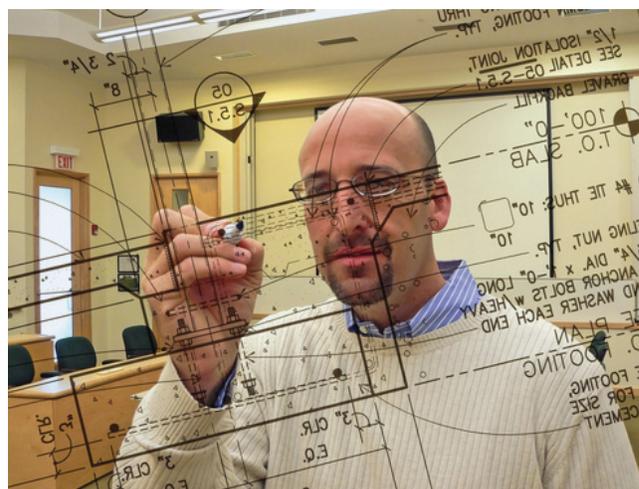
The New Look Project is an example of such a professional development program. In New Look, partnered teams engage in a year-long program improvement process resulting in research-based activities to enhance services and instruction for special populations. Teams receive support in the form of resources and a mini-award. The application process and three annual inservice workshops, along with ICSPS staff acting as liaisons to each team, undergird the program improvement process and ensure goal-reaching accountability. Winner of the 2006 Highest Recognition award from The National Alliance for Partnerships in Equity: Programs and Practices that Work, The New Look Project is an improvement model that supports CTE programs at several different levels of investment through monetary awards, technical assistance, and professional development.

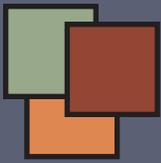
A newly emerging professional development offering is the state-wide *Ask the Expert* series that provides annual inservice sessions, each based upon a specific CTE special population. The first year's inservice events focused on Individuals with Cognitive Disabilities in CTE. This option was followed by FY09's sessions on English Language Learners (ELLs), and the topic for FY10 will be Single Parents and Displaced Homemakers.

The platforms through which ICSPS offers professional development include conferences like the *Forum for Excellence*; inservices like the pre-Connections Conference on *Supporting STEM: Nanotechnology*; facilitation for teams like the *Programs of Study Self-Assessment* workshops; and regional and local workshops like *Supporting the Success of Economically Disadvantaged Learners in CTE*.

“Professional development serves as the bridge between where prospective and experienced educators are now and where they will need to be to meet the new challenges of guiding all students to higher standards of learning and development.”

Source: U.S. Department of Education
(2000, n.p.)





Principle 5 Design Elements at a Glance

1. Professional development activities are coordinated with **teacher certification or licensing, in-service and pre-service learning**, other related professional development activities, or current local reform initiatives/school improvement plans.
2. Professional development activities are high-quality, sustained, intensive, comprehensive, and instruction-focused in order to have an impact on classroom instruction.
3. Professional development is designed to help all partners and stakeholders improve the **quality of instruction** in order to impact student achievement and meet the state annual adjusted level of performance (AALP).
4. Local leaders conduct needs assessments prior to designing professional development and involve stakeholders and partners in collaborative planning.
5. Professional development combines resources with other regions and organizations to **maximize resources**.
6. Professional development includes the sharing of best or **promising practices** based on scientifically-based research and data that demonstrate program effectiveness.
7. Professional development includes opportunities for secondary and postsecondary educators to collaborate to encourage **curriculum alignment and integration**.

Tools and Resources

Design Element 1

Professional development activities are coordinated with teacher certification or licensing, in-service and pre-service learning, other related professional development activities, or current local reform initiatives/school improvement plans.

- The Illinois Agricultural Education *Teacher's Toolbox* contains resources and tools related to agricultural career clusters, activities for the classroom and links to instructional videos. <http://www.agriculturaleducation.org/toolbox/default.asp>
- The Illinois University Council for Career and Technical Education (IUCCTE) is an organization devoted to the professional development of teachers, administrators, guidance counselors and support staff regarding CTE initiatives. Their Web site features past research as well as current projects. <http://www.iluccte.org/researchoutcomes.htm>
- This Teacher Education Materials Project is a database that features research and materials for professional development providers of pre-service and in-service K - 12 mathematics and science teachers. <http://www.te-mat.org/>

Design Element 2

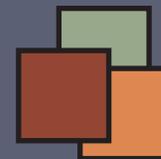
Professional development activities are high-quality, sustained, intensive, comprehensive, and instruction-focused in order to have an impact on classroom instruction.

- This comprehensive literature review prepared by ICSPS provides a list of resources related to professional development for CTE. <http://www.icsps.ilstu.edu/services/pd/comp-pd-lit-review.pdf>
- The National Staff Development Council (NSDC) lists 12 standards of staff development and provides an annotated bibliography of research and resources for each one. <http://www.nsdcc.org/standards/index.cfm>

Design Element 3

Professional development is designed to help all partners and stakeholders improve the quality of instruction in order to impact student achievement and meet the state annual adjusted level of performance (AALP).

- The Missouri Center for Career Education offers a comprehensive Web site that includes resources for professional development related to specific career clusters. <http://resources.mcce.org/>



Design Element 4

Local leaders conduct needs assessments prior to designing professional development and involve stakeholders and partners in collaborative planning.

- 21st Century Schools specialize in professional staff development and curriculum design. A survey tool helps identify specific professional development needs. http://www.21stcenturyschools.com/Assessing_PD_Needs.htm
- This study examines professional development needs and preferences of CTE teachers as related to students with special needs. <http://www.thefreelibrary.com/Professional+Development+Needs+Assessment+for+Secondary+Vocational...-a065805513>

Design Element 5

Professional development combines resources with other regions and organizations to maximize resources.

- Evalutech was developed by the North Carolina Department of Public Instruction and the Southern Regional Education Board (SREB) offering an online database of instructional materials, including links to lesson plans, policy information and resources about virtual learning, online professional development, and information about accessibility and research-based programs and materials. <http://www.evalutech.sreb.org/about/index.asp>
- This map, developed by the Illinois Association Regional Superintendent of Schools, highlights various professional development activities occurring in six distinct regions of Illinois. <http://www.iarss.org/development.asp>

Design Element 6

Professional development includes the sharing of best or promising practices based on scientifically-based research and data that demonstrate program effectiveness.

- The North Central Regional Educational Laboratory (NCREL) provides a comprehensive toolkit for those at the school and district levels to implement quality professional development, based on models of national professional development award winners. <http://www.learning-pt.org/pdfs/pd/lftb.pdf>
- The National Foundation for the Improvement of Education report, *Teachers Take Charge of Their Learning: Transforming Professional Development for Student Success*, provides results from a national survey of more than 800 teachers that explored conditions and policies needed to improve teacher professional development. http://www.nfie.org/publications/takecharge_full.htm

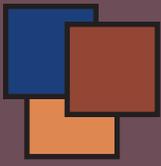
Design Element 7

Professional development includes opportunities for secondary and postsecondary educators to collaborate to encourage curriculum alignment and integration.

- The National Commission on Teaching and America's Future developed a toolkit that provides a network of links to help college and university presidents, campus leaders, and administrators review and improve the quality of teacher education programs. http://www.nctaf.org/strategies/assure/teacher_quality_assurance/investing-in-teaching.htm

Appendix E

Appendix E includes a *Promising Practice Checklist* developed by ICSPS.



Principle Statement

Data are collected, shared, and utilized to improve outcomes and demonstrate accountability.



Principle Overview

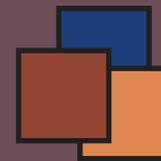
Program Improvement and Accountability is the sixth guiding principle. Principle Six provides a foundation from which Partnerships and other regional groups and local institutions develop processes to gather data, develop performance measures to monitor progress on specific performance outcomes, and trace student progression through the educational systems. By monitoring outcomes for these performance measures, Partnerships know their standing on these measures and can take action to improve their performance. In this way, Partnerships continuously monitor and improve on their performance results so that they are accountable to their stakeholders while making sure that they contribute appropriately to meeting the state's adjusted level of performance. To do this, Partnerships need to develop or review mechanisms to gather and analyze data on the different performance measures of Perkins IV for the state, the region, and the institution.

Performance Measures

Under Perkins IV, program improvement and accountability take on a more prominent focus than in previous Perkins legislation. Section 113, Accountability of the Perkins IV Act, addresses the establishment of state and local performance

accountability systems to document state CTE outcomes. The state performance measures consist of core indicators of performance, a state adjusted level of performance for each core indicator, and any additional indicators of performance identified by a state agency. Data need to be disaggregated, cohort-based, and meet state adjusted levels of performance on indicators. The performance indicators also set targets for improvement over time that require local Partnerships to consider (and reconsider) data sharing relationships and data collection mechanisms with the ultimate goal of improving and enhancing performance results (Watford & Malagon, 2008). If the performance indicators are not met or improved upon, then the Partnership must develop a written plan indicating the process, steps, and measures that will be taken to improve performance. This process uses data to set goals for improvement resulting in a continuous improvement process based around collection of evidence for quality reform.

An example of a tool that Partnerships can use to monitor performance measures is that of a data dashboard. A data dashboard is a visual representation of key performance measures that provides progress updates in an easy-to-read, understandable format (Rice & Taylor, 2003). There are two main ways to visually represent indicators in a data dashboard: first, that of a control panel wherein key performance indicators are shown



in green, yellow, or red depending on the progress on particular benchmarks; second, that of a one-page chart that outlines the indicators and progress. Data dashboards provide regular updates for Partnerships so that data can be used in a continuous improvement process, and provide “clear, detailed, and timely perspectives on what is happening in schools and classrooms as a consequence of their reform initiatives” (Supovitz & Weathers, 2004, p. 1). They also signal to Partnerships the priority placed on specific performance indicators in need of improvement.

Data dashboards are one example of tools for benchmarking and accountability. Regardless of the data monitoring tool Partnerships choose, it should be easy to use and understand by all members. The tools should also effectively communicate strategies and goals to Partnerships by monitoring performance of the most critical processes. Continual monitoring of performance for the purpose of improvement helps Partnerships analyze the root causes of problems by providing timely information and facilitating more effective decision-making (Eckerson, 2005). Tools should also foster a culture supportive of program improvement and focus on strategic performance goals (Edwards & Thomas, 2005).

Levels of Implementation

Principle Six addresses three levels at which program improvement and accountability efforts are aimed: state, regional (Partnership), and local. The state level includes performance outcomes related to the Perkins IV measures reported to the federal government as well as policy such as the state’s forthcoming P-20 Longitudinal Education Data System Act. This legislation seeks to create a P-20 data system to track students’ educational paths from pre-school to grade 20, or graduate school, with the goal of understanding what makes students successful. The bill requires the ISBE, ICCB, and IBHE jointly establish and maintain a longitudinal data system by entering into one or more agreements that link early learning, elementary, and secondary school student unit records with institu-

tions of higher learning student unit records. At the time of this publication, the bill is on the Governor’s desk. Examples of states with similar longitudinal data collection systems include Florida, California, and Oregon.

At the regional or Partnership level, Principle Six addresses the use of current and projected labor market data for determining relevant local Partnership and regional economic and workforce needs. Labor market data can be used at the regional level to identify occupational skill shortage areas,

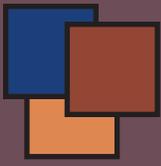
which can help Partnerships determine which Programs of Study should receive priority for development. This analysis can help ensure that partners are responding to economic development needs and the needs of their students.

At the third level, the local level, data are primarily used for program improvement. Program improvement provides a process to identify local status and progress in areas of increased national attention to student outcomes, such as academic achievement gaps and high remediation rates. Without data, progress at reaching targets for improving achievement gaps or lowering dropout rates could not be determined. In Perkins IV, the focus on improving performance adds

to the importance of improving programs and enhancing student achievement, thus linking improvement to accountability. These types of measures require that the education levels involved in Programs of Study have established data sharing agreements to track students between and within the educational system. Data sharing agreements are developed so the entire Partnership can understand the paths students take and how successful they are in traversing them (Leinbach & Jenkins, 2008). Partnerships, for purposes of program improvement, need to collect data that are consistent with existing and new state longitudinal data systems. Regardless of the pace of data alignment efforts at the state level, data sharing agreements should be developed and reviewed regularly at the local level. Partnership data are critical to improve programs and determine local needs (National Alliance for Partnerships in Equity, 2006).

“The number of career majors increased between 1990 and 2004 among both associate’s and bachelor’s degree seekers (from 3.8 to 4.4 million and from 4.2 to 5.3 million, respectively), while the number of certificate-seeking undergraduates majoring in career education decreased (from 2.1 to 1.0 million).”

Source: U.S. Department of Education (2009, n.p.)



PRINCIPLE 6: PROGRAM IMPROVEMENT AND ACCOUNTABILITY

Continuous Program Improvement

Program improvement is a continuous process, and there are multiple continuous improvement models that identify and describe process steps such as reviewing programs and locating areas for improvement or areas of strength (Dwyer, Millett, & Payne, 2006). A basic continuous improvement model in education is the 5-step program improvement process developed by the National Alliance for Partnerships in Equity in relation to the Science, Technology, Engineering, and Math (STEM) Equity Pipeline Project. The 5-step process includes:

1. Documenting performance results: Describing performance on core indicators over time
2. Identifying root causes: Analyzing performance data, additional information, and methods to determine causes of performance gaps
3. Selecting best solutions: Identifying and evaluating potential solutions by examining underlying logic and evidence
4. Pilot testing and evaluating solutions: Evaluating solutions prior to full implementation
5. Implementing solutions: Implementing fully tested solutions and evaluate performance (National Alliance for Partnerships in Equity, 2006).

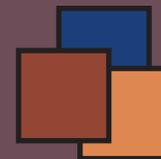


The program improvement process includes a feedback loop to the beginning of the 5-steps and repeats over time. To create a culture of continuous program improvement, professional development is necessary for faculty, staff, administrators, and others. For example, it's important to not overlook the critical role faculty play in a comprehensive and continuous data improvement process. Ideally, the use of data becomes a collaborative effort and a shared responsibility.

Programs of Study is an improvement strategy, and in order for it to be effective, local and state administrators and faculty must know whether their efforts are yielding the results they seek. According to ICCB, "POS will be used as a primary vehicle for reducing remediation, increasing curricular alignment, supporting dual credit and improving student success." This requires measurement, analysis, diagnostics, solution development and implementation of solutions; i.e., a continuous improvement process.

Increased Accountability

Accountability is the practice of holding educational systems responsible for the quality of their outcomes. Increased accountability is a major theme addressed in Perkins IV and closely linked to program improvement. Some accountability models incorporate continuous program improvement into institutional processes. One such program is the Higher Learning Commission's Academic Quality Improvement Program (AQIP) which offers institutions of higher education an alternative process for program review and accreditation. The AQIP process focuses on the internal workings of the institution and how critical processes are related to the mission or focus of the institution (Spanghehl, 2000). From there, the institution is responsible for implementing data collection and dissemination processes for the purposes of improvement. This means institutions report on the data and research gathered as well as the implications of those data on the stated processes. An institution involved in the AQIP process produces data that guide the ways institutions can grow and improve educational experiences for students.



In Perkins IV

Title I, SEC. 113. ACCOUNTABILITY.

(a) PURPOSE.—The purpose of this section is to establish and support State and local performance accountability systems, comprised of the activities described in this section, to assess the effectiveness of the State and the eligible recipients of the State in achieving statewide progress in career and technical education, and to optimize the return of investment of Federal funds in career and technical education activities.

(b) STATE PERFORMANCE MEASURES.—

(1) IN GENERAL.—Each eligible agency, with input from eligible recipients, shall establish performance measures for a State that consist of—

(A) the core indicators of performance described in subparagraphs (A) and (B) of paragraph (2);

(B) any additional indicators of performance (if any) identified by the eligible agency under paragraph (2)(C); and

(C) a State adjusted level of performance described in paragraph (3)(A) for each core indicator of performance, and State levels of performance described in paragraph (3)(B) for each additional indicator of performance.

Title II, SEC. 203. TECH PREP PROGRAM.

(e) INDICATORS OF PERFORMANCE AND ACCOUNTABILITY.—

(1) IN GENERAL.—Each consortium shall establish and report to the eligible agency indicators of performance for each tech prep program for which the consortium receives a grant under this title. The indicators of performance shall include the following:

(A) The number of secondary education tech prep students and postsecondary education tech prep students served.

(B) The number and percent of secondary education tech prep students enrolled in the tech prep program who—

(i) enroll in postsecondary education;

(ii) enroll in postsecondary education in the same field or major as the secondary education tech prep students were enrolled at the secondary level;

(iii) complete a State or industry-recognized certification or licensure;

(iv) successfully complete, as a secondary school student, courses that award postsecondary credit at the secondary level; and

(v) enroll in remedial mathematics, writing, or reading courses upon entering postsecondary education.

(C) The number and percent of postsecondary education tech prep students who—

(i) are placed in a related field of employment not later than 12 months after graduation from the tech prep program;

(ii) complete a State or industry-recognized certification or licensure;

(iii) complete a 2-year degree or certificate program within the normal time for completion of such program; and

(iv) complete a baccalaureate degree program within the normal time for completion of such program.

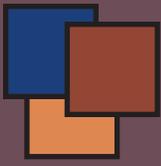
(2) NUMBER AND PERCENT.—For purposes of subparagraphs (B) and (C) of paragraph (1), the numbers and percentages shall be determined separately with respect to each clause of each such subparagraph.

In Practice

Multiple Measures: Examining and Interpreting Data

Anne Cothran, director of EFE System 040, reported on a process of data collection and program improvement that offers lessons for other practitioners. In this case, the EFE was approached by a high school principal within the region who noticed a high failure rate of students in CTE classes. The observation initiated an internal action research study that examined the course grades of approximately 1,200 CTE students in the region. The study used SPSS (a statistical analysis software program) to correlate CTE grades and corresponding grades in math and English for the same group of students. The correlations showed that students failing CTE courses were also failing math and English courses, shifting the focus of the study from specific CTE courses to a broader issue dealing with a student sub-population in need of supplementary instruction and more aggressive intervention.

At first glance, the data appeared to tell one story: of a teacher and a class that was showing high failure. But upon closer study the data revealed a problem of wider scale: failure that was attributed to high absenteeism. As a result, the schools designed interventions to address absenteeism, and they developed new data collection and analysis processes for the region. The decision to analyze previously unnoticed student sub-populations' academic and CTE course-taking and grades resulted in a permanent change in data collection and analysis that bridged academic and CTE curriculum.



PRINCIPLE 6: PROGRAM IMPROVEMENT AND ACCOUNTABILITY



Principle 6 Design Elements at a Glance

1. All programmatic activities, including professional development are evaluated for improvement and accountability using **multiple forms of assessment and measurement**.
2. Data are used to inform a **culture of program improvement** that uses data to improve instruction and programs.
3. Data are used within the organization and shared with partners to foster **local improvement and regional development**.
4. Relevant **labor market data** are used to inform program development and implementation.
5. A data collection system is developed with the capacity to collect **longitudinal data** on core indicators, performance measures, and workforce placement.
6. Procedures are implemented to collect **reliable and valid data** at each educational level and point of data collection.
7. Partnerships **set specific performance targets** and establish measurable goals for participant outcomes based on state adjusted level of performance on each indicator and are responsible for meeting those targets or providing plans of improvement.
8. Collected data are **disaggregated and cohort based** to provide gap analysis on different student groups for purposes of equity.

Tools and Resources

Design Element 1

All programmatic activities, including professional development are evaluated for improvement and accountability using multiple forms of assessment and measurement.

- The Council of Chief State School Officers Web site offers evaluation tools, resources and annotated bibliographies on assessing professional development activities. http://www.ccsso.org/projects/Improving_Evaluation_of_Professional_Development/Resources/
- The Center for Educational Effectiveness provides a guide on how to create a data dashboard for school directors. Data dashboards are a helpful tool for monitoring performance measures and assessments for improvement. <http://www.wssda.org/wssda/webforms/en-us/Publications/dataguide.pdf>
- For an example of a data dashboard in Illinois, see Joliet Junior College's Institutional Research Web site. <http://www.jjc.edu/about/college-info/institutional-research/Pages/dashboard.aspx>

Design Element 2

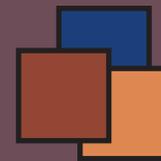
Data are used to inform a culture of program improvement that uses data to improve instruction and programs.

- The Lumina Foundation presents three examples of institutions that moved from using data as snapshots of students at a moment in time to using data to improve student success. <http://www.luminafoundation.org/publications/LessonsWinter2008.pdf>
- The Academic Quality Improvement Program (AQIP), of the Higher Learning Commission, provides a process or example of a process that integrates continuous improvement into all aspects of an institution and its programs. <http://www.aqip.org/>

Design Element 3

Data are used within the organization and shared with partners to foster local improvement and regional development.

- The Data Quality Campaign has multiple briefs on data utilization and accessibility. Tips are included on how to move from simply collecting data to using cleaned and synthesized data to share with other stakeholders (e.g., parents, educators, administrators, and policymakers) so that all are involved in the continuous improvement of student performance. http://www.dataqualitycampaign.org/files/Publications-Reporting_and_Analysis_Tools_Education_Data-090107.pdf



- The National Alliance for Partnerships in Equity presents a guide that includes examples of using the 5-step improvement process, and information specific to Perkins IV accountability. <http://www.napequity.org/pdf/Nontrad-TAFinal.pdf>

Design Element 4

Relevant labor market data are used to inform program development and implementation.

- Information on labor market trends is located at the Illinois Department of Employment Security (IDES). Occupational Employment Statistics (OES) has wage information on entry level, median, and experienced hourly (and annual) wages for Illinois, the Metropolitan Statistical Areas (MSAs), Economic Development Regions (EDRs), counties and the Local Workforce Areas (LWAs). <http://lmi.ides.state.il.us/wagedata/wage.htm>
- Illinois Worknet includes career information, local, regional, and national employment statistics, and sector specific resources for Illinois key sectors (such as health and manufacturing) and others. http://www.illinoisworknet.com/vos_portal/business/en/Benefits/LaborData/

Design Element 5

A data collection system is developed with the capacity to collect longitudinal data on core indicators, performance measures, and workforce placement.

- The Community College Research Center (CCRC) presents examples based on an analysis conducted for the Washington State Board for Community and Technical Colleges (SBCTC) to assist in identifying momentum points and milestones for different groups of students by tracking student progress over time. <http://ccrc.tc.columbia.edu/Publication.asp?UID=570>

Design Element 6

Procedures are implemented to collect reliable and valid data at each educational level and point of data collection.

- The California Benchmarking Project is designed to develop an evidence-based model of assessment for improvement by using practitioner expertise to produce equitable transfer outcomes and movement through developmental education courses. A PowerPoint is provided below for Partnerships interested in repeating this process. http://www.usc.edu/dept/education/CUE/projects/CBP_docs/10.31.08%20Event%20Presentation.pdf

- The Educational Testing Service provides a model for improving performance through three measurement types: student input, output, and change. It also provides recommendations on choosing peer groups for comparison purposes. http://www.ets.org/Media/Resources_For/Policy_Makers/pdf/cultureofevidence.pdf

Design Element 7

Partnerships set specific performance targets and establish measureable goals for participant outcomes based on state adjusted level of performance on each indicator and are responsible for meeting those targets or providing plans of improvement.

- This PowerPoint presented by Carol Brooks of ISBE from the Forum for Excellence on September 18-19, 2007, provides information on Perkins IV secondary indicators. <http://occr1.ed.uiuc.edu/Projects/perkins/files/Resources/PerkinsIVSecondaryIndicators.ppt>.
- The Illinois 6-year plan provides an overview of Illinois' CTE performance measures at the postsecondary level. http://www.isbe.state.il.us/career/pdf/perkins_state_plan0713.pdf
- The State Directors of CTE highlight student success based on four indicators: attainment of academic and vocational skills, completion of a diploma, transitions to and retention in postsecondary education and the workforce, and participation in and completion of non-traditional programs. http://www.careertech.org/uploaded_files/Core_Indicator_Research.doc

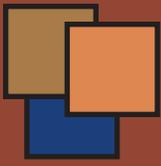
Design Element 8

Collected data are disaggregated and cohort based to provide gap analysis on different student groups for purposes of equity.

- School Board Data provides information on how to disaggregate data and presents ideas on what can be learned when data are disaggregated. http://www.schoolboard-data.org/chapter_three/disaggregated_data.pdf
- A middle school principal seminar held in Austin, Texas in 2004 presents a gap analysis useful to forming a continuous improvement plan, including templates and examples of how to proceed. http://www.utdanacenter.org/downloads/presentations/gapanalysis_march04.pdf

Appendix F

Appendix F includes the *STEM Equity Pipeline Project 5-step Improvement Model*.



MOVING FORWARD

Perkins IV signals an important development for the state, encouraging Partnerships to implement Programs of Study. As Illinois moves forward, continued effort needs to be made to facilitate state-level planning, engage and empower more stakeholders, offer and encourage participation in professional development, identify and disseminate promising practices, and pilot outcomes assessment and continuous improvement.

State Leadership

Illinois' state leadership team comprised of staff of the ISBE, ICCB, OCCRL and ICSPS will meet regularly to facilitate, promote and support the implementation and evaluation of Programs of Study, encouraging the roll-out of Illinois' Career Cluster Model.

Stakeholder Engagement and Empowerment

Historically, Tech Prep consortia drew upon past relationships between selected secondary schools, community colleges, and sometimes business and industry. Most other organizations were marginally involved or missing altogether. Moving forward, more stakeholders need to play a central role in Programs of Study, including business, industry and labor partners, four-year colleges and universities, CBOs, adult education providers, and others.

Professional Development

More professional development will be offered to ensure that all partners' personnel have the knowledge and skills to participate in and maximize implementation of Programs of Study. This professional development will be targeted and continuous, avoiding one-shot approaches that are known to have limited impact. They will focus on increasing the capacity of the state to implement the Guiding Principles: leadership, organization and support; access, equity and opportunity; alignment and transition; curriculum and instruction; and program improvement and accountability.

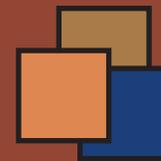
Promising Practices

This guide lays the groundwork for foundational implementation and evaluation of Programs of Study by sharing of a few promising practices. As state and local practitioner knowledge and experience grows and deepens, the sharing of more promising practices is critical to advancing beyond the status quo and bringing about system change on a larger scale. More will be done to identify, document and disseminate promising practices.

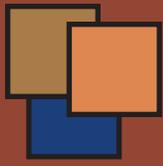
Continuous Improvement

Implementation of Programs of Study requires enhanced use of performance measures, indicators and data systems to establish baseline performance and track the progress of Programs of Study. Another important step includes involving Partnerships in a new initiative called "Pathways to Results" to enable Partnerships to assess student outcomes and identify ways in which to tell the story of educational change and student outcomes associated with Program of Study.

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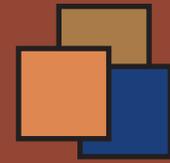
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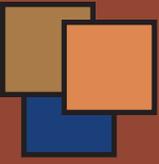
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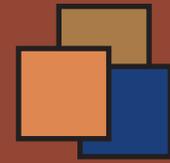
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Supplemental resources are available on the OCCRL Web site
<http://occrll.illinois.edu/projects/perkins/resources>





APPENDIX A: PRINCIPLE ONE: LEADERSHIP, ORGANIZATION, AND SUPPORT

Career Pathways Partner Roles and Responsibilities

http://www.workforcestrategy.org/publications/Career_Pathways_Partner_Roles.pdf

Career Pathways Partner Roles and Responsibilities, developed by the Workforce Strategy Center, is reprinted with permission granted from Julian Alssid on June 26, 2009.

APPENDIX B: PRINCIPLE TWO: ACCESS, EQUITY, AND OPPORTUNITY

18 Ways to Warm Up a Chilly Climate

http://www.napequity.org/e107_images/custom/18.ways.poster.pdf

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APPENDIX C: PRINCIPLE THREE: ALIGNMENT AND TRANSITION

South Carolina Course Alignment Project Design Process for Paired Courses.

https://www.epiconline.org/files/pdf/V1%20Design%20Process%20for%20Paired%20Courses%20SC_Layout%201.pdf

The *South Carolina Course Alignment Project Design Process for Paired Courses*, developed by the Educational Policy Improvement Center, is reprinted with permission granted from Terri Ward on July 9, 2009.

APPENDIX D: PRINCIPLE FOUR: ENHANCED CURRICULUM AND INSTRUCTION

The Crosswalk of ICCB Administrative Rules and National Alliance of Concurrent Enrollment Partnerships (NACEP) Standards.

<http://www.ibhe.state.il.us/DualCredit/materials/DCTFReport.pdf>

The *Crosswalk of ICCB Administrative Rules and NACEP Standards*, Appendix G of the *Illinois Dual Credit Task Force Report to the General Assembly*, is reprinted with permission granted from Brian Durham on July 13, 2009.

APPENDIX E: PRINCIPLE FIVE: PROFESSIONAL PREPARATION AND DEVELOPMENT

Promising Practice Checklist

http://occr1.illinois.edu/files/Projects/perkins/PD_checklist.pdf

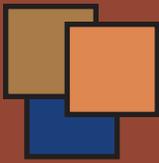
The *Promising Practice Checklist*, developed by the Illinois Center for Specialized Professional Support, is reprinted with the permission granted from Lynn Reha on July 13, 2009.

APPENDIX F: PRINCIPLE SIX: PROGRAM IMPROVEMENT AND ACCOUNTABILITY

STEM Equity Pipeline Project 5-Step Improvement Model

http://www.stemequitypipeline.org/_documents/5step.process.handout.pdf

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Career Pathways Partner Roles and Responsibilities

OVERVIEW

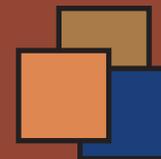
For career pathways to succeed, multiple organizations must collaborate to support career entry and job advancement in the target sector. Career pathways partnerships often involve educational entities, workforce and economic development organizations, community organizations, and employers. While the composition and roles in an actual partnership will depend on the goals of the effort, the pre-existing relationships among the prospective partner organizations, and the capacities and resources of each, some typical partner roles are described below.

INTERMEDIARY ORGANIZATIONS

The intermediary brings together local stakeholders in order to help build and pursue a strategic plan for creating a competitive workforce and developing career pathways initiatives. Although the intermediary's role may vary based on the needs of the partners, this lead organization is often tasked with the overall development of the project framework, including the establishment of partnership agreements, development of operations and implementation plans, and coordination of the partners to develop pilot programs. The intermediary will also work with project partners, local and state governmental agencies, and private foundations to formulate a resource funding package to develop pilot programs and ensure that they are sustainable. Finally, it is the role of the intermediary to ensure that goals are set, milestones are met, and the system is functioning on a day-to-day basis.

SECONDARY EDUCATIONAL INSTITUTIONS

Secondary school partners play a major role in preparing students for their college education and career training. The schools maintain high standards established by their state, including grade advancement and graduation requirements. They focus on strategies that will eliminate, or at least reduce, the need for remedial work in college. Secondary schools provide early academic and career counseling to motivate students and make them aware of their postsecondary options and the value of their academic and career



accomplishments. In addition, the schools negotiate articulation agreements with postsecondary officials to develop and offer credit-bearing transitional coursework that will smooth student advancement from high school to college.

BRIDGE TRAINING PROGRAMS

Bridge programs provide adults with the basic skills they need to enter and advance in postsecondary education and career training. Specifically, bridge training could include GED preparation, English as a Second Language instruction, workplace literacy, and/or college remedial or developmental courses. These programs typically incorporate basic and vocational skills training with exposure to workplace literacy.

POSTSECONDARY EDUCATIONAL INSTITUTIONS

Community and technical colleges and other postsecondary education partners provide the education and training that lead to career track employment. They develop curriculum in partnership with the identified employer community, to ensure that individuals receive the skills and credentials needed to enter and advance in a high-demand field and/or degree-granting academic program.

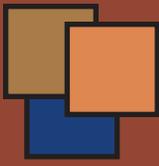
The college partners also provide the infrastructure for curriculum development, instructor recruitment and certification, negotiation of course fees, and the delivery of the training. Often, the colleges work hand-in-hand with One-Stops, social service organizations, and other partners to develop effective recruitment and assessment strategies.

INDUSTRY PARTNERS

Industry partners play a critical role in identifying the workforce challenges associated with building a competitive workforce and designing a career pathways system. They provide current information on industry trends and the workforce issues that are impacting their businesses. On a micro level, industry partners help to define the skills that they need workers to possess, to review curriculum, to visit training classes, and to provide opportunities for work experiences, internships, employment, and upgrade training for incumbent workers. They may also provide resources that help sustain career pathways.

WORKFORCE INVESTMENT SYSTEM

The Workforce Investment System, which includes state and local Workforce Investment Boards and One-Stop Career Centers, oversees the professional development resources that support the preparation of a region's unemployed and underemployed population. Along



APPENDIX A

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with education partners, the Workforce Investment System partners serve as information and relationship brokers. The One-Stop Career Centers connect a wide array of federal programs and community resources into a single access point for both business and job-seekers. Overall, the Workforce Investment System is responsible for integrating the career pathways framework into other public sector investments.

ECONOMIC DEVELOPMENT AGENCIES

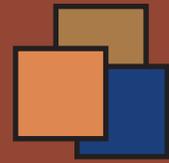
Economic development agencies may play a number of different roles in building career pathways. They often provide economic information during the gap analysis phase and throughout the planning and implementation, ensuring that collaboration partners are made aware of plant closings or new employers entering a particular region. They may also connect career pathways partners to employers who can support the collaboration or hire student participants. In addition, economic development partners may promote and market the career pathways framework to attract new businesses to the region. They can also offer funding or in-kind contributions to support regional efforts.

COMMUNITY-BASED ORGANIZATIONS AND SOCIAL SERVICE AGENCIES

Community-based organizations and social services agencies often provide recruitment and support services to individuals isolated from postsecondary education and career opportunities. They can assess candidates, supply them with case management services, and connect them to health care, child care, transportation, or other needed services. Additionally, these organizations may host classes or workshops, enabling community colleges or adult basic education programs to bring training opportunities directly to the students.

STATE AGENCIES

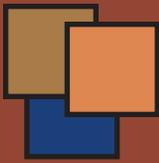
Agency leaders and policymakers may support competitive workforce strategies and career pathways from a statewide perspective. They may also provide a statewide vision, engage and support regional and local players, work to align policies and programs among various state agencies, and provide funding for the planning and implementation of the career pathways framework. Additionally, state agencies may establish parameters for measuring the performance of a career pathways system and help align its goals and outcomes with other state policies and investments.



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REGIONAL FOUNDATIONS

Regional foundations throughout the country are becoming involved in career pathways initiatives. They often play a convening role and provide support for planning and capacity building. As a partnership matures, regional foundations may be helpful in funding documentation, evaluation, and dissemination.



18 WAYS TO WARM UP A CHILLY CLIMATE



1. Examine your teaching behavior to see which students get the most and best responses from you. Have someone video your class if possible, or use a tape recorder. Analyze who talks the most, who talks the least, whom you call on to speak, who gets praise, criticism and feedback, who gets called by name, who gets coached, who gets credit for a contribution, etc., and develop a plan to increase participation of those who need to participate more.

Examine how you use the following:

- praise for a specific achievement
- criticism or evaluation (feedback on performance)
- remediation or correction (help and suggestions for improvement)
- acceptance (such as "OK" or "uh-huh.")

The first three are important in student learning; the last, acceptance, merely acknowledges that a student has spoken, and passively implies that nothing very good or very bad was said.

2. Use praise as a deliberate strategy, coupled with feedback about the quality of work and what if anything needs to be done. Praise about appearance, or "uh-huh" or "OK" does not count as praise and bears little relationship to learning or intellectual self esteem. Praise good answers for all students. Sometimes males are praised for their talents ("You're really smart,") and females for their hard work ("I can see you put a lot of work into this.")

3. Give criticism in the form of a question, where possible. ("How would your answer be if you took into account the environmental impact" rather than "Your answer is wrong because you did not mention the impact of the environment.") Include praise along with criticism and include specific ways to improve, such as "I know you can do better. You need to redo the experiment and keep an eye on the fluid levels," or, "This isn't up to your usual standard of very good work. You need to include more descriptions of the problems."

4. Don't always call on the first hand that goes up. Tell everyone to think about the answer and not to raise their hand until you tell them to do so. Alternatively, ask students to write down their answer for themselves (or one element of the answer) and only then ask for their comments. (Males are more likely to raise their hands quickly and organize their answer as they speak, while many females, along with some males, are more likely to organize their answer first and then raise their hand.) Many students are more willing to participate once they have worked out their response.

5. "Coach" females as well as males, especially in mathematics, the sciences and computer usage. Coaching conveys the belief that the student is bright enough to say more. Use questions such as "Why do you think that is?" or statements such as "Tell me more about this." Using questions that have no "wrong" answer, such as "What kinds of questions do you have about today's [yesterday's] lesson?" also encourages students to participate.

6. When you ask the class a question, look at all students, not just males, not just the students you consider bright, not just the white students or those you expect to respond. Be sure to look at females as well. Eye contact often indicates to students that you expect them to respond and often they will.

7. Listen attentively to all students when they speak, even if their answer is wrong, even if they speak slowly or hesitantly, or speak English as a second language. Listening attentively to males, such as nodding and gesturing, but shuffling papers, looking elsewhere and avoiding eye contact, is a common form of differential treatment of female students.

8. Intervene when male students show disrespect for female students (or the reverse) through overt comments or negative body language.

9. Do not allow students to interrupt each other. (Male students often interrupt female students.) Examine your own interruptions of students.

10. Use small groups to foster cooperative, rather than competitive learning. Tell all students that one of the aims of working in small groups is

for everyone to encourage each other to participate, to take turns speaking, and to respect each others' contributions; otherwise, the groups replicate sexual stereotyping, with males as the more active participants. Students need to know why it is important to learn to work in groups. (One teacher tells students how that many decisions in the workplace and work itself are often accomplished by groups.) Leadership should be rotated, with group leaders told that part of their responsibility is to encourage everyone to speak. (Note: females are not singled out.)

11. Avoid stories, jokes and comments that denigrate women and girls. Most jokes about women demean females. Talking about sex or women in a humorous way makes many females uncomfortable. Comments that lump all females (or males) together can often be harmful. Even positive comments, such as "The women in this class are much more responsible and they all turn in their assignments on time," can create a chilly climate, especially since it is likely to untrue for all females and likely to be true for some males. It is better to single out individuals for praise, feedback and criticism/remediation, and to characterize or group students in ways other than by gender, race or ethnicity.

12. In giving credit to students' contributions, be sure to give it to females as much as males and to the right person. Often males get more credit for their contributions, and sometimes even get credit for something a female said. Giving credit ("What Mary said summarizes the issue perfectly," is a very powerful form of praise.

13. Judge females' (males') contributions to the class by the contents of their ideas rather than by the style of their speech. Do not assume that an incisive, assured style equals knowledge, or that a hesitant style equals ignorance. Do not assume that females (or males) who preface their remarks with an apology ("I don't know if this makes sense but...") are not bright or do not know the materials.

14. Use parallel terminology in describing both genders, such as "men and women," or "boys and girls," not "girls and men." Use "he or she" rather than the generic "he" or words such as "mankind." Doing so communicates a concern about gender equity, and shakes up stereotypes about gender behavior. Additionally, research shows that the use of the generic "he" is typically viewed by listeners as pertaining to males only.

15. Do not group students by gender, since such groupings often imply that females are not as qualified as males. Do not group people by gender in order to have each gender compete with the other. In most instances, grouping students by gender violates Title IX, which prohibits sex discrimination in education.

16. Do not make seemingly helpful remarks that disparage females' abilities, such as "I know that a lot of females have trouble with math so I'll be happy to help anyone who needs extra assistance."

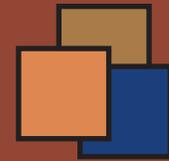
17. Ask males and females the same kinds of questions; avoid asking males the critical thinking questions and females the factual and easier questions.

18. Call females by name as well as males. Often teachers are surprised to learn they know more names of male students than those of females, and call males by name more often. Be sure to use parallel names, such as all last names or all first names. Calling males by their last name and females by their first name implies that the women are seen as less serious students.

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South Carolina Course Alignment Project *Design Process for Paired Courses*

The **South Carolina Course Alignment Project** (SC CAP) is a statewide collaborative effort to develop sequences of “paired courses” in English/Language Arts, mathematics, and science. The term “paired courses” refers to a sequential set of courses: an exit-level high school course and an entry-level college course. Each course is aligned with its pair and with the South Carolina College Readiness Reference Standards.

The goal of the project is to strengthen alignment between high school and college so that South Carolina students experience a seamless transition from high school to postsecondary learning. Aligning secondary and postsecondary courses will help:

- **reduce** the need for remedial instruction;
- **improve** college retention and graduation rates;
- **create** clear pathways and **reduce** curriculum redundancy between high school and college; and
- **provide** explicit information on the content and skills necessary for post secondary success so that high school students can better prepare for the expectations of college.



Additional information and updates about the project can be found at the project website:
www.epiconline.org/south_carolina

Course Design and Development Teams

Design and Development Teams in English/Language Arts, mathematics, and science will meet regularly during the 2008–2009 academic year to create example pairs of courses and accompanying syllabi in their respective subject areas. Each course will have clear performance standards that connect to state standards and examples of performance tasks. Course pairs will be developed in the following subjects:

- English/Language Arts
- Mathematics
- Biology
- Chemistry
- Physics

Selection Criteria for Design and Development of Team Members

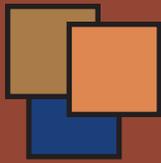
Members of the SC CAP Steering Committee and other interested South Carolina educators will nominate the Design and Development Team members. Project staff at the South Carolina Commission on Higher Education, in consultation with staff at the Educational Policy Improvement Center (EPIC), will select team members using the following criteria:

- Knowledge of academic field
- Respected leader in South Carolina education
- Type of institution (*high school, technical college, university*)
- Ability to devote the required hours (*estimated to be approximately two hours per week for 20 weeks for the course design phase in 2008–2009*)
- Geographic location

Design and Development Team Composition

Each of the three teams (English/Language Arts, mathematics, and science) will include faculty from high schools, technical colleges and universities. Each team comprises six members in the following roles:

- two content experts from secondary education in South Carolina;
- two content experts from postsecondary education in South Carolina;
- one content expert with experience designing paired courses from secondary education outside South Carolina; and
- one content expert with experience designing paired courses from postsecondary education outside South Carolina.



APPENDIX C

Role of Participating Instructors

Participating instructors will provide information about the courses they teach, including how their courses align with the South Carolina College Readiness Reference Standards. This information is then used by the Design and Development Teams as explained in the next section. Participating instructors are high school and postsecondary faculty who are nominated by their principals or higher education administrators. This process is described in detail at: https://www.epiconline.org/south_carolina.

Before team members attend an initial meeting, EPIC staff will analyze the information provided by participating instructors in order to identify areas of alignment and non-alignment between existing courses and the South Carolina College Readiness Reference Standards. These analyses will help Design and Development Team members develop the content of the example course pairs. In addition, EPIC staff will identify any existing courses that Design and Development Team members might elect to choose as example course pairs.

Duties of Design and Development Team Members

After reviewing the alignment data, team members will create example syllabi with supporting course documents that demonstrate how to align paired course elements with the South Carolina College Readiness Reference Standards. After the Design and Development Teams have concluded their work, the example course pairs will be transmitted to the members of the Design and Implementation Team.

The Design and Implementation Team will be composed of invited faculty who have participated in the course alignment process, faculty who are nominated by their administrators, faculty who self-nominated for participation in the project, or faculty who are nominated by a member of the Steering Committee.

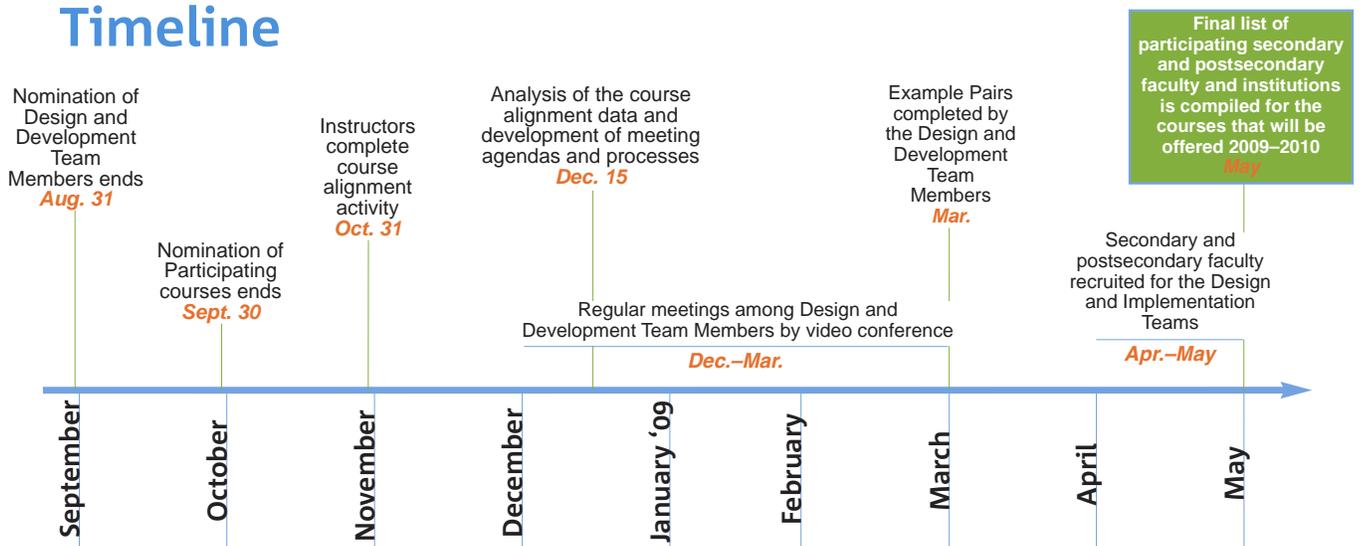
Design and Implementation Team Composition

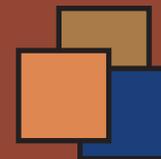
The primary role of the Design and Implementation Team members will be to pilot an example course from the course pairs. Members will be provided with the example course pairs developed by the Design and Development Team in their subject area. They may use the example pairs “as is” or they may adapt them to suit the particular needs of their institutions and students. These adaptations will be expected to match the integrity and goals of the example courses. In this fashion, team members will have the opportunity to implement as well as to design the courses.

Duties of the Design and Implementation Team Members

To facilitate the work of all design teams, video conferencing and other strategies will be employed to reduce travel time and to encourage regular attendance at meetings. EPIC staff will organize and handle the logistics for all meetings and will provide technical assistance and clerical support for the teams.

Timeline





Crosswalk of ICCB Administrative Rules & NACEP Standards

NACEP Overview

Prologue:

The National Alliance of Concurrent Enrollment Partnerships (NACEP) was established during the annual meeting in Utah in November 1999 as an organization of education professionals who administer or participate in **Concurrent Enrollment Partnerships (CEP)**.

Mission:

NACEP links college-school programs offering college courses in high schools. NACEP supports and promotes its constituent programs through quality initiatives, program development, national standards, research, and communication.

Definition:

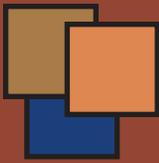
Through concurrent Enrollment Partnerships, qualified students can earn college credit prior to high school graduation. CEP's differ from other pre-college credit programs because high school instructors teach the college courses during the normal school day. Such programs provide a direct connection between secondary and post-secondary institutions and an opportunity for collegial collaboration.

Although courses in some CEPs may have some elements or characteristics of the programs stated below, CEPs are distinct programs from the following:

- Programs in which the high school student travels to the college campus to take courses prior to graduation during the academic year or during the summer.
- Programs where college faculty travel to the high school to teach courses to the high school students.
- The College Board Advanced Placement Program and the International Baccalaureate Program where standardized tests are used to assess students' knowledge of a curriculum developed by a committee consisting of both college and high school faculty.

Standards Purpose:

NACEP Standards are measurable criteria of CEP elements that are the basis of quality programs. College or University NACEP members have met and submitted evidence of implementation of the NACEP standards. College or University Provisional Program Members are in the process of meeting the standards. Each standard includes: (1) Standard Statement, (2) Categories of Evidence and (3) Illustrative Case Example.



APPENDIX D

ICCB Recognition for the Illinois Public Community College Districts Overview

Prologue:

Recognition is a statutory term describing the status of a district which meets instructional, administrative, financial, facility, and equipment standards as established by the Illinois Community College Board (Section 805/2-12f and 805/2-15). Community colleges must be recognized to be eligible for state funding. Based on a five-year cycle, ICCB staff conduct recognition evaluations to assure that colleges are in compliance with these standards. All colleges are evaluated on a select number of standards during the same five-year cycle.

Objectives of the Recognition Evaluation

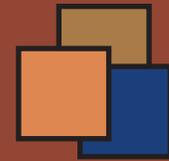
The following are the objectives of the ICCB recognition evaluation process:

1. Determine district compliance with standards established by the Public community College Act and ICCB Administrative Rules.
2. Provide assistance to districts in achieving compliance with the Act and Administrative Rules.
3. Identify issues which may be of concern to the community college system and gather basic data about these issues.
4. Identify exemplary district practices/programs that can be shared with other districts.

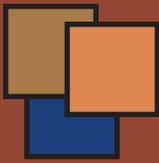
The Recognition Process:

The recognition evaluation process takes advantage of the substantial amounts of information that the colleges provide to the Board on a routine basis. Evaluations include quality indicators in addition to standards that are strictly compliance-oriented. If issues arise during the disk audit evaluation that cannot be resolved through off-site contact with the college, a visit to the college concurrent with the credit hour claims audit visit will be arranged to view materials available on campus and/or to discuss issues with college personnel.

	ICCB Administrative Rules	National Concurrent Enrollment Partnership Standards
State Laws and Regulations and Accreditation Standards	All State laws, ICCB regulations, accreditation standards specified by the North Central Association, and local college policies that apply to courses, instructional procedures and academic standards at the college apply to college-level courses offered by the college on campus, at off-campus sites, and at secondary schools. These policies, regulations, instructional procedures and academic standards apply to students, faculty and staff associated with these courses.	
Curriculum	<i>Course Offerings.</i> Courses shall be selected from transfer courses that have been articulated with senior institutions in Illinois or from the first year courses in ICCB approved associate in applied science degree programs.	1. College or university courses administered through a CEP are catalogued courses and approved through the regular courses approval process of the college or university. These courses have the same departmental designation, number, title, and credits;

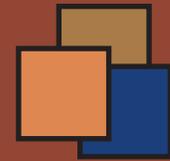


	<p><i>Course Requirements.</i> The course outlines utilized for these courses shall be the same as for courses offered on campus and at other off campus sites and shall contain the content articulated with colleges and universities in the State. Course prerequisites, descriptions, outlines, requirements, learning outcomes and methods of evaluating students shall be the same as for on-campus offerings.</p>	<p>additionally these courses adhere to the same course description.</p> <ol style="list-style-type: none"> College or university courses administered through a CEP are recorded on students' official academic record of the college or university. College or university courses administered through CEPs reflect the pedagogical, theoretical and philosophical orientation of the colleges and universities sponsoring faculty and/or academic department.
<p>Faculty</p>	<ul style="list-style-type: none"> The instructors for these courses shall be selected, employed and evaluated by the community college. They shall be selected from full-time faculty and/or from adjunct faculty with appropriate credentials and demonstrated teaching competencies at the college level. 	<ol style="list-style-type: none"> Instructors teaching college or university courses through the CEP meet the academic requirements for faculty and instructors teaching in post-secondary institutions as stipulated by the respective academic departments. The post-secondary institution provides the high school instructors with training and orientation in course curriculum, assessment criteria, course philosophy, and CEP administrative requirements before certifying the instructors to teach the college/university's courses. Instructors teaching the CEP sections are part of a continuing collegial interaction, through annual professional development t, required seminars, site visits, and ongoing communication with the post-secondary institutions' faculty and CEP administration. This interaction addresses issues such as course content, course delivery, assessment, evaluation, and professional development in the field of study.
<p>Admission</p>	<p><i>Admission of Students</i> b) Students Currently Enrolled in a Secondary School Program. Students currently enrolled in a secondary school program may be accepted into a college course(s). If such courses are offered during the regular school day established by the secondary school or are offered for secondary school credit, prior approval of the chief executive officer of the secondary school must be received.</p>	
<p>Students</p>	<p><i>Qualifications of Students</i></p> <ul style="list-style-type: none"> Students accepted for enrollment in college level courses must have appropriate academic qualifications, a high level of motivation and adequate time to devote to studying a college-level course. The students' course selections shall be 	<ol style="list-style-type: none"> High school students enrolled in courses administered through a CEP are officially registered or admitted as degree-seeking, non-degree or non-matriculated students of the sponsoring post-secondary institution. Post-secondary institutions outline specific course requirements and prerequisites.

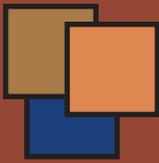


APPENDIX D

	<p>made in consultation with high school counselors and/or principals and ordinarily are restricted to students in the junior and senior years of high school.</p> <ul style="list-style-type: none"> The students shall meet all college criteria and follow all college procedures for enrolling in courses. <p><i>Placement Testing and Prerequisites.</i> Students enrolling in college-level courses must satisfy course placement tests or course prerequisites when applicable to assure that they have the same qualifications and preparation as other college students.</p>	<ol style="list-style-type: none"> High school students are provided with a student guide that outlines their responsibilities as well as guidelines for the transfer of credit.
<p>Assessment</p>		<ol style="list-style-type: none"> CEP students are held to the same standards of achievement as those expected of students in on-campus sections. Every section of a course offered through a CEP is annually reviewed by faculty from that discipline and CEP staff to assure that grading standards meet or exceed those in on-campus sections. CEP students are assessed using the same methods (e.g. papers, portfolios, quizzes, labs, etc.) as their on-campus counterparts.
<p>Program Evaluation</p>	<p><i>Review and Evaluation of Programs.</i></p> <ol style="list-style-type: none"> Each college shall have a systematic, college wide program review process for evaluating all of its instructional, student services, and academic support programs at least once within a five-year cycle. The minimum review criteria for program review shall be program need, program cost, and program quality, as defined by each college. Each college shall develop a schedule that shows when each program will be reviewed during each five-year cycle. Occupational programs shall be scheduled in the year following their inclusion in the ICCB follow-up study unless the college obtains an exception in writing from the ICCB. The review of general education objectives of the academic programs shall be scheduled annually, but may focus each year on areas specified by the Illinois Board of Higher Education and ICCB. The ICCB may request the college to include special reviews of programs that have been identified as a result of state-level analyses, legislative resolutions, or Illinois Board of 	<ol style="list-style-type: none"> The CEP conducts annual program assessment and evaluation of its practices including at least course evaluations by CEP students and follow-up of the CEP graduates who are college or university freshmen. Qualified evaluators/researchers and/or the college's or university's institutional research office conduct and analyze evaluations and assessments. The CEP conducts, every 5 years, an impact study of the CEP on participating high school instructors, principals and guidance counselors. Qualified evaluators/researchers and/or college's institutional research office conducts evaluations and assessments. The CEP conducts, every 5 years, a follow-up of CEP graduates who are seniors in a college or university. Qualified evaluators/researchers and/or college's institutional research office conducts evaluations and assessments.



	<p>Higher Education policy studies by notifying the college of this request prior to January 1 of the year the special review is to be conducted.</p> <p>5) Each college shall keep on file for ICCB recognition purposes a copy of its current program review process, its five-year schedule for program review, and complete reports of program reviews conducted during the past five years.</p> <p>6) Each college shall submit to the ICCB by August 1 each year a summary report of its previous year's program review results in a format designated by the ICCB and a copy of its current five-year schedule of program reviews.</p>	
<p>Concurrent Credit</p>	<p>The determination of whether a college course is offered for concurrent high school and college credit shall be made at the secondary level, according to the school's policies and practices of the district.</p>	
<p>Tuition</p>	<p>Each community college district will establish its own student tuition rates for in-district residents, in-state out-of-district residents, out-of-state residents, and out-of-country residents in accordance with the state policies prescribed in the Illinois Community College Act (110 ILCS 805/6-4) and in this Section.</p> <p>a) In-District Tuition. The local community college board of trustees may set the tuition rates for in-district residents within the following policies:</p> <ol style="list-style-type: none"> 1. The local community college board of trustees may set tuition rates for its in-district residents including variable rates for each of its programs, terms, time of enrollment, courses, delivery method, or other identifiable grouping of courses as long as the weighted average of the tuition for all credit courses including adult education is no more than 1/3 the college district's per capita cost. The method of calculating the per capita cost will be as prescribed in Section 6-2 of the Illinois Community College Act. 	



APPENDIX E

Promising Practice in Professional Development

Comprehensive and continuous professional development that impacts teaching and learning is delivered to enhance the recruitment, preparation, and retention of qualified instructional and administrative staff.

Promising Professional Development Program Title/Name:

Presenting/Sponsoring Organization:

Intended Audience:

Group(s) Served (check all that apply): Secondary Postsecondary Business/Industry

The purposes of this project are :

Primary Secondary

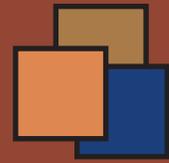
Please check all that apply.

<input type="checkbox"/>	<input type="checkbox"/>	Meet AALP
<input type="checkbox"/>	<input type="checkbox"/>	Impact student achievement
<input type="checkbox"/>	<input type="checkbox"/>	Encourage curriculum alignment
<input type="checkbox"/>	<input type="checkbox"/>	Improve the quality of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Collaborate to maximize resources
<input type="checkbox"/>	<input type="checkbox"/>	Provide high quality CTE instructors
<input type="checkbox"/>	<input type="checkbox"/>	Impact classroom teaching and learning
<input type="checkbox"/>	<input type="checkbox"/>	Provide an adequate supply of CTE instructors
<input type="checkbox"/>	<input type="checkbox"/>	Encourage participation in professional development
<input type="checkbox"/>	<input type="checkbox"/>	Encourage excellence in CTE, both content and pedagogical knowledge
<input type="checkbox"/>	<input type="checkbox"/>	Meet current workforce needs and expectations, including business and industry “methods”

This project has the following essential elements of strong professional development:

Please check all that apply.

<input type="checkbox"/>	An integrated and ongoing part of teaching	<input type="checkbox"/>	Plans for the inclusion of a wide audience
<input type="checkbox"/>	Planned with a variety of stakeholders	<input type="checkbox"/>	Pre-service teachers
<input type="checkbox"/>	Incorporated into each Program of Study	<input type="checkbox"/>	Newer teachers
<input type="checkbox"/>	Coordinated and aligned with:	<input type="checkbox"/>	Experienced teachers
<input type="checkbox"/>	Teacher certification and licensing	<input type="checkbox"/>	Uses data-driven program improvement including:
<input type="checkbox"/>	Professional organizations	<input type="checkbox"/>	Documents performance results
<input type="checkbox"/>	Business and industry methods and needs	<input type="checkbox"/>	Researches root causes of issue
<input type="checkbox"/>	Courses across the curriculum	<input type="checkbox"/>	Selects improvement strategies
<input type="checkbox"/>	State and local professional development	<input type="checkbox"/>	Sets goals
<input type="checkbox"/>	Aligned with pre-determined instructional standards	<input type="checkbox"/>	Enacts activities
<input type="checkbox"/>	Offered in a wide variety of formats, including webinars and mentoring	<input type="checkbox"/>	Reviews, evaluates and feeds back to planning process
<input type="checkbox"/>	Embedded in a plan with follow-up	<input type="checkbox"/>	Knowledge-Increasing
<input type="checkbox"/>	Focused on instruction	<input type="checkbox"/>	Content
<input type="checkbox"/>	Aligned with good recruitment practices	<input type="checkbox"/>	Pedagogy
<input type="checkbox"/>	Sustained	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Intensive	<input type="checkbox"/>	Other:

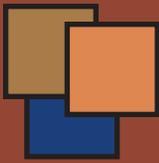


Brief description of the professional development opportunity

Include how the program achieves the purpose(s) and implements the essential elements selected.

This professional development opportunity meets the following Design Elements of strong professional development :

	Professional development activities are coordinated with teacher certification or licensing, in-service and pre-service learning, other related professional development activities, or current local reform initiatives/school improvement plans.
	Professional development activities are high-quality, sustained, intensive, comprehensive, and instruction-focused in order to have an impact on classroom instruction.
	Professional development is designed to help all partners and stakeholders improve the quality of instruction in order to impact student achievement and meet the state annual adjusted level of performance (AALP).
	Local leaders conduct needs assessments prior to designing professional development and involve stakeholders and partners in collaborative planning.
	Professional development combines resources with other regions and organizations to maximize resources.
	Professional development includes the sharing of best or promising practices based on scientifically-based research and data that demonstrate program effectiveness.
	Professional development includes opportunities for secondary and postsecondary educators to collaborate to encourage curriculum alignment and integration.



APPENDIX F

STEM Equity Pipeline

“Expanding Options for Women and Girls in Science, Technology, Engineering and Math”



The STEM Equity Pipeline Project is a collaborative effort between State Teams and an Extension Services Group of leading researchers and practitioners in gender equity and STEM education to:

BUILD the capacity of the formal education community to implement research-based approaches proven to increase the participation and completion of females, including those with disabilities, in STEM education;

INSTITUTIONALIZE the implemented strategies by connecting the outcomes to existing accountability systems; and

BROADEN the commitment to gender equity in STEM education.

Step 1: Document Performance Results.

The first step in the process is to describe state and school/college performance on the core indicators by comparing performance levels between schools/colleges, student populations, and programs over time. This step uses summary statistics and basic graphs and charts to document performance and identify improvement priorities.

Step 2: Identify Root Causes.

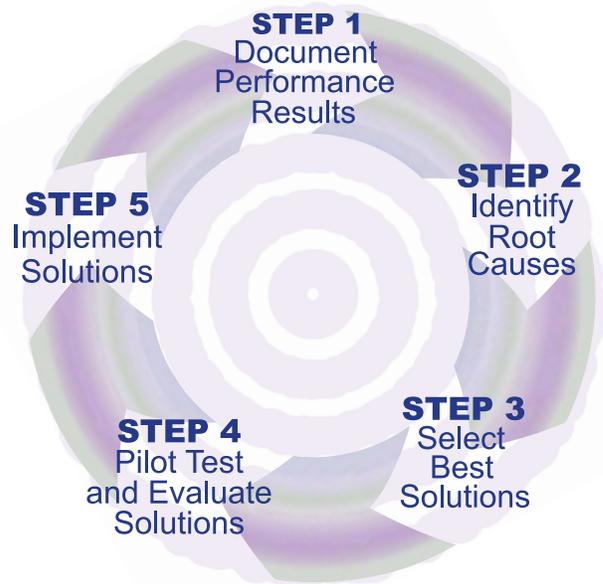
The second step is to analyze performance data and use additional information and methods to determine the most important and most direct causes of performance gaps that can be addressed by improvement strategies and specific solutions. This step encourages states to use multiple methods to identify and evaluate potential causes and select a few critical root causes as the focus of improvement efforts.

Step 3: Select Best Solutions.

The third step is to identify and evaluate potential solutions to performance problems, including both improvement strategies and program models, by reviewing and evaluating the underlying logic of these solutions and the empirical evidence of their effectiveness in achieving performance results.

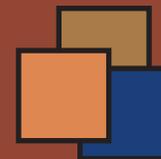
Step 4: Pilot Test and Evaluate Solutions.

The fourth step is to conduct pilot testing and evaluation of solutions. This step presents practical yet rigorous methods and tools for evaluating solutions before full implementation at the state or institutional levels.



Step 5: Implement Solutions. The fifth step is to implement fully tested solutions based on plans that evaluate the success of the solution in reaching the expected performance results. This step also addresses how to use evaluation results to plan the next steps in state and local improvement efforts.





STEM-Related Career Clusters

Today's global economy has presented great challenges for the U.S. In order to compete effectively in the current global economy the U.S. must bring together industry leaders and educators to increase the population's skills in STEM (Science, Technology, Engineering and Math). The need for qualified individuals in scientific and engineering-related fields has far outgrown the needs of the general workforce.

Science, Technology, Engineering, and Mathematics (STEM)

- Engineering and Technology
- Science and Mathematics

Architecture & Construction

- Design/Pre-Construction
- Construction
- Maintenance/Operations

Agriculture, Food, and Natural Resources

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

Health Science

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

Information Technology

- Network Systems
- Information Support and Services
- Interactive Media
- Programming and Software Development

Manufacturing

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

Transportation, Distribution, and Logistics

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

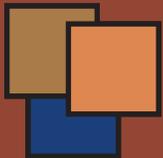


Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

www.stemequitypipeline.org



The Office of Community College Research and Leadership (OCCRL) was established in 1989 at the University of Illinois at Urbana-Champaign. Our primary mission is to provide research, leadership, and service to community college leaders and assist in improving the quality of education in the Illinois community college system. Projects of this office are supported by the Illinois Community College Board (ICCB) and the Illinois State Board of Education (ISBE), along with other state, federal, and private and not-for-profit organizations. The contents of our publications do not necessarily represent the positions or policies of the University of Illinois or funders. Comments or inquiries about our publications are welcome and should be directed to OCCRL@illinois.edu.



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