THE GOALS, USE, AND POTENTIAL IMPACT OF OCCUPATIONAL SKILL STANDARDS IN ILLINOIS

Debra D. Bragg, Ph.D.
Professor and Project Co-Director

James Bartlett II, Ph.D.
Assistant Professor and Project Co-Director

Matthew R. Marvel, MBA
Graduate Research Associate

Office of Community College Research and Leadership
University of Illinois at Urbana-Champaign
51 Gerty Drive
Champaign, IL 61820
217-244-9390
http://occrl.ed.uiuc.edu

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EXECUTIVE SUMMARY

Knowing that the Illinois Occupational Skill Standards initiative has been operating for several years, it is indeed logical and appropriate to assess the goals, use, and potential impact of the initiative. It is particularly important to examine occupational skill standards from the perspective of various key stakeholders who have contributed to the effort. Ultimately, this project is designed to help state leaders understand what has happened to implement skill standards in the past in order to identify viable options for the future.

The key objectives for the study follow:

- Document the goals, expectations, and intended outcomes sought by various key stakeholder groups associated with occupational skill standards in Illinois.
- Describe products and other outputs developed by the Illinois Occupational Skill Standards and Credentialing Council (IOSSCC).
- Identify uses of key products and outputs of Illinois' occupational skill standards according to various key stakeholder groups, especially employers, educators, and government agencies.
- Discuss the implications of Illinois' Occupational Skill Standards approach and describe alternative options for the future.

To carry out this study, a mixed-method design was implemented, drawing upon qualitative and quantitative data. In addition, the research team took a continuous process improvement perspective, seeking ways to better understand Illinois' occupational skill standards initiative by identifying gaps in the current process and benchmarking other leading states in the national skill standards movement. Information was also gathered on how well Illinois' initiative aligns with the National Skill Standards Board (NSSB).

To begin the research, the team engaged in a review of literature, websites, and documents relative to Illinois' initiative and similar activities conducted nationally in the 50 states. State leaders, experts, and national leaders of the NSSB provided pertinent information via telephone. A survey (via e-mail and fax) was conducted with employers; government agencies (specifically workforce training providers); and secondary and postsecondary educators associated with career-technical education, including tech prep and education to careers. Finally, the co-director of this project, Dr. James Bartlett, accessed data from his national study on skill standards implementation to provide a more thorough picture of how skill standards are used by community college educators in Illinois.

Major Results

<u>Goals, Expectations, and Intended Outcomes</u>

- Overall, there is high level of support for the concept of skill standards and the role these standards can play in guiding education and training to prepare a more qualified workforce. Even so, there is a lack of consensus about what Illinois' occupational skill standards initiative is intended to achieve and what its intended outcomes should be.
- State statute specifies the end goal of Illinois' occupational skill standards as "to identify occupations for the development of standards and to verify nationally-developed standards", under the authority of ISBE, with the IOSSCC acting in an advisory capacity. Yet, a perception exists that the IOSSCC has moved beyond an advisory role into providing

leadership and direction, with ISBE consultants and project staff supporting the IOSSCC's work.

- ISBE consultants have engaged in the state standards project, sometimes blurring the lines between occupational skill standards and curriculum duty and task lists. At the same time, a perception exists that Illinois' occupational skill standards have not gone far enough to avoid duplication with nationally recognized and industry-based standards and certifications.
- Assessment and certification is viewed as an important piece of Illinois' skill standards initiative for all parties, but these activities have not been supported adequately. A number of reasons are given for limited support, including funding limitations, the need to employ specialists in testing and measurement, and the high priority placed on the sequential development of skill standards with assessment and certification following curriculum implementation.
- With so much attention on standards at the state level, local educators worry about the continuing role of their local employer advisory committees and how to resolve differences between standards advocated at the state and local levels. Career-technical education programs do not want to alienate local employers, because their expertise is vital, and local employers hire graduates and offer resources to keep curriculum and laboratories current.

Funding, Products, and Outputs

- Over the past 10-year period, the state has invested approximately $5 million dollars in the Illinois occupational skill standards initiative. Despite the resources dedicated to the project, funding is viewed as too modest to support the full implementation of the state's skill standards initiative, including development and implementation of standards, assessments, and certifications. As an unfunded mandate, uncertain funding on a year-to-year basis creates discontinuity in executing a coherent, on-going project plan.
- A review of products and outputs shows that 46 skill standards have been produced in a wide range of occupational areas, several of which are aligned with National Skills Standards Board (NSSB) and other industry-based skill standards. Even so, there are a large number of industry-based skill standards that are not yet addressed by Illinois' skill standards initiative.

Awareness and Use of Skill Standards

- A high percentage of education respondents are both aware of and using occupational skill standards. In contrast, 100% of all businesses affiliated with the IOSSCC and its sub-councils and 75% of workforce training respondents are aware of the Illinois occupational skill standards but only 25% or less of these groups are using them.
- Business partnerships with employers, educational institutions, and other employers provide mechanisms for communicating about occupational skill standards. For education, awareness of the skill standards is universally high. Results show the Illinois Occupational Information and Coordination Committee (IOICC) is the group most likely to familiarize businesses with the skill standards, ISBE is the organization that familiarizes educators with skill standards, and IDES familiarizes workforce training providers with skill standards.
- Twenty-four of the 42 occupational skill standards (57%) included are not used by businesses responding to our survey, including the accounting service cluster, agricultural machinery service technician, chemical process technician, housekeeping management, insurance cluster, and others. On the other hand, some occupational skill clusters are experiencing a fairly high level of usage. Over 70% of the educational institutions indicate they use the automotive technician cluster, nursing cluster, and information processing cluster. It is

noteworthy that all of these clusters are tied to occupations where certifications are useful or necessary to secure gainful employment.

- Looking at group means for tasks that utilize Illinois skill standards, the task of "developing learning objectives" is rated high by all three respondent groups (business, education, and workforce training). "Revising curriculum" is rated 1st by educators, 4th by workforce training providers, and 6th by business. Workforce training providers rate the task of "assessing program outcomes" highest, whereas educators rate this task 9th, and business rates it 7th. Educators rate "articulating with secondary skills" quite high (3rd) but this task is rated much lower by business and workforce training, 25th and 15th respectively. These results reinforce an earlier finding concerning a lack of consensus regarding the purpose of skill standards, suggesting some commonalities among groups but also important differences in each group's reasons for using them.
- None of the surveyed groups show strong support for using their own resources to fund skill standards. This conclusion reflects the fact that the lowest rated item for all three groups is that "their organization is funding skill standards in Illinois", suggesting most are not engaged in actively funding skill standards with local dollars.
- Business and education is aligned similarly on their support for the importance of integrating academic and occupational education. Workforce training providers did not rate this item as highly as business and education even though they, along with the other two groups, rated it in the top half. In rating various items associated with the perceived impact of skill standards, business and workforce training providers report the largest impact is on partnerships whereas educators see skill standards as a means of enhancing career-technical education.
- Business differs from educators and workforce training providers in perceiving impact related to taking ownership of skill development, with business rating this item higher than the other two groups. Business seems to see skill standards as a mechanism to encourage individuals to take responsibility for personal career development, while education and government are less likely to view it that way.

Future Options

Based on the quantitative and qualitative results, three sets of options are articulated to enhance future implementation of skill standards in Illinois.

❖ <u>Shift from an Input to an Outcomes Orientation</u>

- Consistent with Illinois' commitment to enhancing public education, emphasize a locally-vested, outcomes-driven occupational skill standards initiative that is based on a clearly-developed, sustainable plan supporting state leadership and coordination and rewarding local educators and employers for playing an enhanced role.

- Change the current emphasis of Illinois' skill standards initiative from *inputs* tied to *development and use* of skill standards to *integration of existing nationally-recognized, industry-based skill standards and certifications*, with heightened emphasis placed on *measuring outcomes and impact*.

- Ensure continued partnerships among key stakeholders because broad-based support is critical to enhancing utilization of skill standards at the state and local levels, with diverse constituents such as business, education, and workforce training.

- ❖ Shift the State Role to Adoption or Adaptation of Skill Standards

  - Utilize the *adoption* of skill standards from nationally-recognized industry organizations as a first choice, basing decisions to adopt on a clear set of criteria widely agreed upon by key constituents, including the existence of nationally-recognized industry assessments and certifications. This adoption strategy should be accompanied by research to determine the quality and utility of skill standards that are under consideration for the state of Illinois. Adoption may entail re-formatting or creating guidelines to support local implementation, but it does not involve new development work.

  - *Adaptation* should be the state's second choice in implementation of skill standards. Adaptation should occur when a set of skill standards is shown to meet an established set of criteria (referred to above) as evidenced by research. Adaptation should include new development only when an undisputable void is evident in an industry/career cluster that is pivotal to the state's economic well-being.

  - As a last resort, the state should have the authority to develop and implement brand new skill standards in highly critical industry/career clusters when there is plentiful evidence that the skill standards are needed, but this step should be taken only when it is shown to meet a clear set of criteria (mentioned above).

  - In adopting, adapting or developing skill standards, the state should use a consistent framework that is tied to quality indicators. To avoid spreading resources too thin, the state should focus on highly targeted industry/career clusters that have established assessments and certifications. The integration of skill standards into education and training curricula should follow logically once a decision is made to adopt selected certifications.

- ❖ Shift More Responsibility for Skill Standards from the State to the Local Level

  - Encourage a broad-based advisory role for employers, educators, workforce providers, employees, and students/graduates to insure skill standards, assessments and certifications are valid and reliable, but also to encourage greater buy-in and use on the local level.

  - Engage local employers, educators and workforce providers in decisions about adoption and adaptation to increase their ownership. At present, many local groups are involved in limited fashion until they are informed that a set of skill standards is being developed and distributed. Engage these groups earlier in a more systematic manner to increase their commitment to skill standards

  - Incentives and rewards are needed to encourage local employers, educators, and workforce providers to integrate skill standards on the local level. To encourage their use, careful thought needs to be given to incentives and rewards that encourage local implementation. Moreover, beyond the program review processes conducted by ISBE and ICCB, more attention needs to be paid to accountability in using skill standards and assessment of outcomes and impact.

  - Increase technical assistance from the state level to the local level including high schools, area career centers, community colleges, 4-year colleges and universities, workforce training providers, and places of employment where skill standards should be used on a wider scale. Create user-friendly tools and techniques to facilitate local use, implementation, and impact.

❖ Enhance Evaluation of the Effectiveness of Illinois Skill Standards

- Currently, the Illinois skill standards initiative does not have a strong evaluation component, and this needs to be changed. More emphasis needs to be placed on not only monitoring and measuring the use of skill standards but the outcomes skill standards have on students/employees, education and training programs, and employers, the workforce and economy.

- Support systematic evaluation activities that produce results that are needed to mobilize the business/employment community, workforce training providers, and other key stakeholders, including measures of student/graduate/employee quality, retention, advancement, and productivity. Such efforts are bound to help potential stakeholders understand the benefits of skill standards and become more engaged in integrating them into their work.

- Create rewards and incentives for programs that demonstrate success in integrating skill standards, including evidence of particularly high levels of use of skill standards and strong evidence of student/graduate/employee success. This effort can be modeled after the National Center for Career and Technical Education's national exemplary career-technical education project, headquartered at the University of Illinois at Urbana-Champaign and The Ohio State University.

- Disseminate the results of evaluation efforts widely to achieve greater visibility for and acceptance of the state's skill standards initiative, and to provide needed information to improve state and local efforts to implement skill standards and fulfill their intent of enhancing the qualify of Illinois' workforce.

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BACKGROUND

During the 1990s, the need for improved academic and vocational curriculum and instruction came to the forefront at the federal, state, and local levels. Federal legislation dealing with academic and vocational or occupational/career-technical curriculum, including the Carl D. Perkins legislation and the School-To-Work Opportunities Act (STWOA), precipitated the need for states to emphasize standards to a higher degree than had occurred previously. At the same time, states were engaging in systematic reform initiatives in all of education, focusing on the development and implementation of learning standards in grades K-12. As such, the state adopted the Illinois Learning Standards and implemented them through the Illinois State Board of Education (ISBE) (see http://www.isbe.state.il.us/partnerships/Default.htm.) During the 1990s, the state also established an initiative addressing occupational skills in education and employment, called the Illinois Occupational Skill Standards (see http://www.standards.siu.edu/). This project is intended to delve into implementation and utilization of Illinois' occupational skill standards to inform state leaders on future policy and practice.

The Role of State Legislation

State legislation played an important role in the occupational skills standards movement, as the state passed the Occupational Skill Standards Act (Public Act 87-1210) of 1992. In this statute, the Illinois State Board of Education (ISBE), as sole administering agency of the federal Carl D. Perkins legislation, was charged with developing a system of core standards and measures of performance for vocational programs after consultation, advice, and input from the state Committee of Practitioners whose composition was prescribed by federal law. (See Appendix A for a copy of Public Act 87-1210.)

According to state statute, a 9-member Standards and Credentialing Council, named the Illinois Occupational Skill Standards and Credentialing Council (IOSSCC), was to be composed of representatives of business, industry, and labor, and the role of this group was to advise ISBE relative to the development of standards and credentialing systems. Appointment to the Council was a joint responsibility of the Governor's Office (5 members) and the State Superintendent (4 members). It is also noteworthy that this legislation provided no funding to support members appointed to the Council, specifically stating that "Members of the Council shall serve without compensation and without reimbursement of their expenses." Additional specific information about the responsibilities and administration of the group appears in the law, which appears in Appendix A.

Public Act 87-1210 specified *primary responsibilities* for the IOSSCC in the following way:

> The primary responsibility of the Council shall be the identification of occupations for development of standards and the verification of nationally developed standards…. In developing the standards and measures included in such a system the State Board of Education shall take into consideration:
>
> (1) standards and measures developed under job opportunities and basic skills training programs established and operated under a plan approved by the U.S. Secretary of Health and Human Services that meets the requirements of Section 402(a)(19) of the Social Security Act; and
>
> (2) standards prescribed by the U.S. Secretary of Labor under Section 106 of the federal Job Training Partnership Act. (p. 3646)

Public Act 87-1210 also specified that the ISBE, as the administering agency for the state and for federal vocational-technical education funds, where possible and appropriate shall:

(1) establish statewide academic, technical, and general employability skill standards for training occupations;

(2) establish a credentialing system for certifying the qualifications of individuals on these standards;

(3) publish those standards on a regular basis and promote the voluntary use of standards and credentialing systems in training programs;

(4) coordinate the development of occupational standards and credentialing systems with a consortia of states and existing national standards to avoid duplication of effort and resources and to provide for consistency among states and increase the employment opportunities of training program participants;

(5) utilize the expertise of business, industry, and labor in the identification, verification, and implementation of occupational standards and credentialing systems; and

(6) collaborate with other appropriate State agencies and service providers with responsibility for youth and adult workforce preparation. (Public Act 87-1210, p. 3647)

Alignment with National Skill Standards

Based on the state legislation, Illinois' occupational skill standards initiative was intended to be aligned with other standards and certification initiatives. Chief among these is the National Skill Standards Board (NSSB), which was established through legislative authority of Title V of the Goals 2000: Educate America Act. According to its website (see www.nssb.org), the NSSB has existed since 1995 as a coalition of leaders from business, labor, employee, education, and community and civil rights organizations. Its primary purpose is to build a voluntary national system of skill standards, assessment and certification to enhance the ability of the United States workforce to compete effectively in a global economy. These skills are identified by industry in partnership with labor, civil rights and community-based organizations. The standards are to be based on high performance work and portable across industry sectors.

The NSSB has categorized the workforce into 15 industry sectors, which are fairly comparable to the career clusters specified by the Office of Vocational and Adult Education (OVAE), United States Department of Education (USDE) (see http://www.ed.gov/offices/OVAE/). These career clusters are viewed as integral to the implementation of vocational education under the auspices of the Carl D. Perkins legislation of 1998. Under the guidance of the NSSB, members from each industry sector come together to form voluntary partnerships that are responsible for developing skill standards, assessments, and certifications for their respective industry sectors.

To date, industry skill standards have been developed in the manufacturing and the sales and service industry sectors, and the NSSB is working with the hospitality, utilities, and information technology industry sectors to facilitate skill standards and certifications. Table 1 presents the industry sectors and the current status of voluntary skill standards implementation by the NSSB.

Table 1
Industry Sector and Status of NSSB Skill Standards

Industry Sector	Status of NSSB Skill Standards
Agriculture, Forestry, and Fishing	----
Business and Administrative Services	----
Construction	----
Education and Training	----
Finance and Insurance	----
Health and Human Services	----
Manufacturing, Installation and Repair	Released standards for the manufacturing, installation and repair sector
Mining	----
Public Administration, Legal and Protective Services	----
Restaurants, Lodging, Hospitality and Tourism, and Amusement and Recreation	Recognized the Hospitality and Tourism Futures (HTF) as the Voluntary Partnership for the restaurants, lodging, hospitality and tourism, and amusement and recreation industry sector
Retail Trade, Wholesale Trade, Real Estate and Personal Services	Completed standards for the retail trade, wholesale trade, real estate and personal services sector
Scientific and Technical Services	----
Telecommunications, Computers, Arts and Entertainment, and Information Technology	Established the Information Technology and Telecommunications Research Project to commence development of vendor neutral, core skill standards and certifications in the Telecommunications and Information Technology industry sector
Transportation	----
Utilities and Environmental and Waste Management.	Established the Utilities Industry Group (UIG), a collaboration between the International Brotherhood of Electrical Workers (IBEW), Edison Electric Institute (EEI) and eight other electronic utility organizations to accelerate the development of skill standards for the electronic utility industry

Source: *2000-01 NSSB Annual Report* and NSSB website (see www.nssb.org)
Note: ---- indicates the standard has not yet been addressed formally by the NSSB

Similar to the goals of the NSSB, the Illinois occupational skill standards structure aligns with the concept of voluntary partnerships through 14 Illinois industry sub-councils. Further, the Illinois' Occupational Skill Standards initiative specifies the following intentions:

> The major purposes of skill standards and credentialing systems are to promote education and training investment and insure that this education and training enables students and workers to meet industry standards that are benchmarked to our major international competitors. Given these purposes, skill standards and credentialing systems have major benefits that impact students and workers, employers, and educators in Illinois.

The vision and intent of the IOSSCC is purportedly a "value-added" concept:

> It is the vision of the IOSSCC to add value to Illinois' education and workforce development system by developing and supporting the implementation of a statewide system of industry defined and recognized skill standards and credentials for all major skilled occupations that provide employment and earnings opportunities.
>
> The IOSSCC endorses occupational skill standards and credentialing systems for occupations that
> - Require basic workplace skills and technical training
> - Provide a large number of jobs with either moderate or high earnings, and
> - Provide career advancement opportunities to related occupations with moderate or high earnings.

Whereas this statement emphasizes education and training as paramount, it is important to acknowledge that multiple audiences or stakeholders are designated for the Illinois occupational skill standards. Students and workers, employers, and educators are identified explicitly as audiences for the skill standards. The Illinois Occupational Skill Standards website offers insights into possible uses of skill standards by selected groups, as follows:

Table 2
Possible Uses of Skill Standards According to Three Key Stakeholder Groups

Stakeholder Group	Uses of Skill Standards
Students and Workers	▪ Help workers make better decisions about the training they need to advance in their careers.
	▪ Allow workers to communicate more effectively to employers what they know and can do.
	▪ Improve long-term employability by helping workers move more easily among work roles.
	▪ Enable workers to help their children make effective academic and career and technical decisions.
Employers	▪ Focus the investment in training and reduce training costs.
	▪ Boost quality and productivity and create a more flexible workforce.
	▪ Improve employee retention.
	▪ Improve supplier performance.
	▪ Enlarge the pool of skilled workers.
Educators	▪ Keep abreast of a rapidly changing workplace.
	▪ Contribute to curriculum and program development.
	▪ Provide students with better career advice.
	▪ Strengthen the relationship between schools and local businesses.
	▪ Communicate with parents because educators have up-to-date information about industry needs.

Source: http://www.standards.siu.edu/

Besides the uses attributed to these specific groups, the NSSB goes beyond the state of Illinois in terms of the breadth of representation of stakeholder groups in the occupational skill standards process. Specifically, the NSSB identifies users such as labor organizations, training providers, community groups, and state and local governments. Addressing the needs of these many groups is necessary to help the NSSB accomplish its purposes.

According to its 2000-01 annual report, recent goals of the NSSB are to:

- Assist workers in acquiring the skills they need to succeed in today's dynamic workplace;
- Help businesses succeed and compete with global competitors by increasing the pool of skilled and productive workers;
- Become the cornerstone of a national strategy to improve workers' skills and broaden the availability of training to our nation's workers; and
- Link with vocational-technical education and job training programs to deliver relevant education to the nation's future workforce.

Based on careful analysis, Bunn and Stewart (1998) summarized the goals of the NSSB as to: (1) improve the workforce, (2) provide uniform standards for the international marketplace to use as measures, (3) provide portability of employment for workers, (4) increase accountability, and (5) meet the needs of business and industry. Other specific uses of skill standards, according to Bunn and Stewart, include the following:

- Enhance worker employment opportunities through portable credentials and skills
- Enhance worker career advancement and ability to reenter the workplace by obtaining skill credentials
- Increase opportunities for minorities and women to enter and advance in the workforce
- Facilitate the transition of workers to high performance work organizations
- Ascertain appropriate training services by training providers and educators
- Facilitate linkages with other complimentary initiatives aimed at workforce skill enhancement

Of note, the NSSB has conducted a number of pilot projects across the nation to enhance implementation of national skill standards. Although, Illinois was not selected for this work, it is useful to review the goals and intentions of these various initiatives to identify their focus and intended future direction:

Alaska Skill Standards Project – to integrate nationally recognized, industry-based skill standards and certifications into the policies, plans, and operational of WIA programs.

San Diego (California) Workforce Partnership Skill Standards Project – to integrate national skill standards into the training curriculum for a future work readiness certification that is intended to be a locally-determined, cross-business/industry, portable composite profile of the ideal entry-level employee in the county.

Palm Beach County/Treasure Coast (Florida) Workforce Investment Board (WIB) Skill Standards Project – to integrate national skill standards into the curriculum for a future portable work readiness certification for entry-level employees.

Georgia Skill Standards Project – to infuse NSSB core and concentration skill standards into the state's Certified Manufacturing and Customer Service Specialist program.

Louisiana Skill Standards Project – to identify, review, and implement nationally-recognized, industry-based certifications for use in occupational education (secondary and postsecondary) and workforce development skills training programs.

Michigan Skill Standards Project – to develop a state skill standards board.

Mississippi State Skill Standards Partnership Project – to incorporate nationally recognized, industry-based specialty certifications into secondary and postsecondary occupational classroom skills training programs.

Pennsylvania Skill Standards Project – to introduce nationally recognized, industry-based skill standards and occupational specialty certifications into WIA programs.

South Dakota Skill Standards Project – to incorporate nationally recognized, industry-based specialty certifications into secondary and postsecondary vocational-technical programs.

Virginia Skill Standards Project – to identify, review, and begin implementing nationally recognized, industry-based occupational specialty certifications statewide in secondary vocational-technical education programs.

What seems significant about these projects is that they all emphasize the importance of coordinating state and local skill standards and certification with national efforts. A common theme among these NSSB-funded projects is to facilitate the integration of nationally-recognized, industry-based skill standards and certifications in occupational (vocational-technical or career-technical) and WIA programs at the state and local levels (secondary and postsecondary). The focus on integration of national standards at the state and local levels is an unmistakable message from the NSSB, as is the importance of incorporating certifications that are nationally-recognized and industry-based.

Related Literature on the Use and Impact of Skill Standards

Since the idea of occupational skill standards was introduced nationally about a decade ago, they have been both applauded and criticized. Advocating for skill standards, Faulkner (2002), describes them as meritorious in articulating skills and knowledge required by front-line workers in high-performance environments and serving as "a benchmark that workers and businesses can use to maintain a competitive edge" (p. 1).

Spill and Osman (2002), both advocates for skill standards and active players in the national skill standards movement, claim benefits to employers include enhancements to the ability to communicate knowledge and skill performance requirements to new and incumbent employees, including determining proficiency levels and reducing costs and risks when hiring new workers and promoting existing employees. Individual employees and students benefit by being able to make informed decisions regarding spending resources for education and training, and they can better communicate their skills and knowledge to current and potential employers. Education and training providers benefit because they can "tailor course content to equip graduates with up-to-date knowledge and skills that meet the actual performance requirements of employers" (p. 20). Moreover, education and training providers that adopt skill standards and certifications are expected to see enrollment increases

as the successes of these providers' graduates become known. Finally public agencies, such as state and local education agencies and Workforce Investment Boards (WIBs), can benefit because they have a framework for organizing successful operations evidenced in improved customer satisfaction and enhanced workforce preparedness.

From the start of the national skill standards initiative, scholars and other experts have cautioned about the complexity in implementing skill standards, on any level. For example, Hoahlander and Rahn (1994) predicated the success of national skill standards on the establishment of the following four major tasks:

- Reaching consensus on what constitutes an industry and the occupations within it. *Should standards focus on industries as a whole, on sub-sectors, or on occupations?*
- Settling on specific and detailed lists of skills, and how they will be determined. *Are standards intended mostly for entry-level or novices, or should they address higher-level skill needs?*
- Determining how to set standards and who will decide. *What conceptual framework should guide skill standards development, and who makes decisions when differences of opinion/perspective emerge?*
- Figuring out how best to assess students and what certification signifies. *How will the potentially large cost of new performance-based or paper-pencil assessments and certifications be supported?*

Hoachlander and Rahn described the job of establishing a comprehensive, unified national system of industry standards as "formidable" (p. 20). They pointed to inconsistencies in goals and terminology, and they suggested that setting standards either too high or too low (as would inevitably happen) would lead to skepticism about their use. Cost was another reason that the standards would be difficult to implement, according to these authors. Plus, even though the standards are described as voluntary, they raise questions about what would happen if new and incumbent employees failed to meet the standards or refused to sit for certification exams. They asked, "What will happen to those who do not apply for certification or fail to obtain it? Will they be denied the opportunity to work? If not, what will certification really mean to those who do get it?"

Considering the likelihood that skill standards systems would be developed in different ways, Bailey and Merritt (1995) presented two logical approaches to skill standards development: the skill component model and the professional model. These two models differ in the extent to which they emphasize skills and the worker's role. In the case of the skill component model, the skills are conceptualized as tasks, and the workers' role is viewed as minor relative to the skills they perform. In contrast, the professional development model focuses on integration where skills are conceptualized as a part of the total role of the worker. To be effective, Bailey and Merritt argue that skill standards development should focus on the professional model to ensure that the long-term goals of the skill standards movement are met. Because of the rapid changes in the workplace, to focus narrowly on skills and tasks will ensure that the system becomes out of date relatively quickly, increasing the cost of on-going maintenance. It will also encourage a focus on entry-level occupations because of the ease of specifying detailed tasks and assignments at this level as compared to more advanced occupations that require more spontaneous reaction, critical thinking, and high-stakes decision making.

In reviewing the initial development of skill standards nationally, Losh (1995) expressed pessimism about the future of a national skill standards system. He pointed out problems inherent in not having a commonly defined parameter and standards formats and processes for the development and

implementation of skill standards. The NSSB's initial framework was criticized for its complexity, academic terminology, and focus on skill standards without adequate attention paid to assessment and certification (Dykman, 1996). Still quite complex, more recently a 22-step State Engagement Strategy was introduced by the NSSB, to encourage states to use nationally-recognized, industry-validated occupational certifications. The steps in this process are:

1. Determine stakeholders
2. Explain the process to stakeholders
3. Obtain commitments
4. Develop a work plan
5. Gather information
6. Identify three to five priority occupations
7. Designate criteria to evaluate existing nationally-recognized skill standards
8. Locate and research certifications pertaining to priority occupations
9. Review findings
10. Select appropriate nationally recognized, industry-based occupational certifications for initial implementation, or conduct additional searches
11. Hold discussions and negotiate agreements with certification providers
12. Delineate a plan for implementation of certifications
13. Secure and commit needed resources for start-up
14. Make required program modifications and operational adjustments
15. Complete certification implementation plans
16. Initiate related courses of study
17. Administer selected certification examinations
18. Evaluate overall examination results
19. Refine process, determining the approach necessary to successfully incorporate certifications on an on-going basis
20. Ascertain the next group of occupational certifications to consider
21. Start the access and utilization process again
22. Merge the process with the voluntary national system of skill standards and integrate products developed by the NSSB

Finally, little is known about the impact of the current skill standards movement. Even so, in one of the most comprehensive statements on skill standards and certification, Carnevale and Desrochers (2001) expressed optimism about the potential benefits of commonly defined standards, performance-based assessments, and industry-based certifications. However, they cautioned against narrowly conceived skill standards that focus on entry-level skills that do not prepare workers for the modern, high performance workplace. Carnevale and Desrochers argue that failing to integrate academic and vocational skills can lead to employees lacking adequate employability skills and general knowledge to perform effectively and advance in careers.

In another evaluation of national skill standards, Haimson and Hulsey (1999) noted inadequate resources to assist faculty to integrate skill standards at the local level and to fund needed equipment, though grants and donations from local employers could be an important means of ameliorating fiscal problems to some degree. Further, Haimsom and Hulsey found student motivation problematic, including motivating students to learn new skills. Finally, the authors observed that the continued tracking of vocational/career-technical students out of advanced academics creates barriers to successful implementation of skill standards, which is further complicated by weak career guidance systems in grades K-12.

GOALS OF THE PROJECT

Without question, the goals and intentions of the Illinois Occupational Skill Standards initiative are notable and ambitious. Having about a 10-year period to implement this initiative in the state of Illinois, it is important to assess what has transpired with occupational skill standards within the state. To understand their use and potential impact, a systematic assessment project was needed to determine what has happened in the state of Illinois, both in terms of new standards and the integration of nationally-recognized, industry-specific standards and certifications. As such, this assessment project was solicited by the state, to be carried out over a short time period from October 1, 2002 to November 19, 2002, with presentation of the results to the Illinois Workforce Investment Board (IWIB) on November 19, 2002.

Indeed this assessment is a timely endeavor. Changes in state-level leadership and administration of occupational/career-technical education are occurring, making it important to examine the goals, products, and potential impact of occupational skill standards from the perspective of various key stakeholders who have contributed to or possibly benefited from the effort. Nearly always, planning for the future is best done when leaders understand what has happened in the past. With respect to Illinois' occupational skill standards, leaders are undoubtedly best positioned for the future if they understand what has transpired and how useful these efforts have been for various stakeholder groups. With this information, the state is positioned more favorably to identify options for the future.

With an ultimate eye toward identifying future options for the state, this study addressed the following goals:

- Document the goals, expectations, and intended outcomes sought by various key stakeholder groups associated with occupational skill standards in Illinois.
- Describe products and other outputs developed by the Illinois Occupational Skill Standards and Credentialing Council (IOSSCC).
- Identify uses of key products/outputs of Illinois' occupational skill standards according to various key stakeholder groups, especially employers, educators, and government agency training providers.
- Describe implications of Illinois' Occupational Skill Standards initiative and present options for the future.

METHODS

To carry out this study, a mixed-method design was implemented by the research team. Qualitative and quantitative data were collected to provide as comprehensive a picture as possible of the state's initiative, given the time constraints of the project. In addition, the research team believed that the project would benefit from a continuous process improvement approach, drawing insights on process improvement from the work of Chang (1994), Senge et al. (1994), and others. In taking this perspective, the research team attempted to collect detailed information on goals and processes linked to Illinois' occupational skill standards initiative and other state systems engaged in skill standards implementation. As such, the team viewed its work as aligned with a modified "benchmarking" process (Camp, 1989), focusing on competitive gaps between Illinois' approach and what has been accomplished by other states considered "industry leaders".

To initiate the study, the team engaged in a thorough review and analysis of literature, websites, documents, and other materials relative to Illinois' occupational skill standards and related initiatives conducted nationally and in the 50 states, especially states having comparable educational, economic, and demographic systems. State leaders and experts associated with the National Skill Standards Board (NSSB) were interviewed, and leaders of other states identified as offering information pertinent to Illinois' initiative were interviewed via telephone. States sought out for these interviews include Georgia, Indiana, Kentucky, Minnesota, Ohio, Texas, and Washington state.

In addition, the research team conducted personal and telephone interviews with representatives of key stakeholder groups within the state to gain a clearer understanding of goals, expectations, intended outcomes, and outputs/products. Using this information, Illinois' Occupational Skill Standards initiative was compared to skill standards initiatives conducted nationally and by comparable states.

The research team also carried out a multi-faceted data collection approach to document use of occupational skill standards products and outputs. Employers, educators, and government agency workforce training providers were surveyed via e-mail and fax. Three rounds were used to collect the data. Table 3 provides a summary of the number of persons included in the sample and response rate by stakeholder group. The chart shows that the total number of persons surveyed was 574, with 161 persons responding. Therefore, the overall response rate is slightly less than 30%, providing a credible return rate given the short data collection period.

Data were supplemented with telephone calls to non-respondents, and telephone calls were used to collect in-depth information to gain a better understanding of the information provided by respondents. For example, when a high percentage of respondents indicated that they were using or alternatively were not using skill standards, the research team conducted telephone interviews to ask why. (Survey instruments used in this study are shown in Appendix C.)

Table 3
Sampling Frame for Illinois Skill Standards Survey

Name	Initial Number	E-Mail Returned	Number Sampled	Declined Participation	Respondents	Response Rate
Area Vocational Center Directors	12	5	**7**	1	**3**	**43%**
IDES Local Workforce Investment Area Address List (LWIA)	88	22	**66**	0	**24**	**36%**
Illinois Department Employment Security Rapid Response Agents	11	0	**11**	0	**6**	**55%**
Illinois Education to Careers Steering Committee	30	2	**28**	0	**3**	**11%**
Illinois Education to Careers Partnership Coordinators	34	3	**31**	0	**4**	**13%**
Standards Business Participation List	299	59	**240**	8	**41**	**17%**
Community College Employers	128	39	**89**	2	**8**	**9%**
Fortune 500	36	0	**36**	5	**6**	**17%**
Tech Prep Workshop Participants	66	0	**66**	0	**66**	**100%**

Added to these data collection methods, the research team reviewed results of surveys implemented previously by the Illinois State Board of Education (ISBE) and the Illinois Community College Board (ICCB). Comparisons of earlier results were made to findings associated with this study. In addition, Dr. James Bartlett is the director of a national study on implementation of skill standards in community colleges in the U.S. funded by the National Research Center for Career and Technical Education (NRCCTE), USDE/OVAE (see www.nccte.org). Bartlett's study examines the extent to which industry-based skill standards are implemented in community college career-technical curricula. Due to the large sample used for this study, Bartlett provided results on 13 community colleges in the state, supplementing the data sources for this study with an unbiased assessment of skill standards utilization by Illinois' community colleges. (See Appendix D for a copy of Dr. Bartlett's survey instrument.)

RESULTS

This section provides a summary of major results related to the four goals of the project. Tables, figures, and supplementary materials are provided in the main text and in appendices.

Goals, Expectations, and Intended Outcomes

To understand the goals, expectations and intended outcomes of various stakeholders, it is useful to first review Illinois' occupational skill standards legislation (Public Act 87-1210). According to state statute, the purpose of Illinois' skill standards initiative is to identify occupations for the development of standards and verify nationally-developed standards. This goal was to be accomplished with the IOSSCC acting in an advisory capacity for the Illinois State Board of Education (ISBE), wherein the ISBE would be responsible for establishing a statewide system of academic, technical, and general employability skill standards; a credentialing system for certifying the qualifications of individuals on these standards; publishing standards on a regular basis and promoting them on a voluntary basis; coordinating the development of occupational standards and credentialing systems with a consortia of states and existing national standards to avoid duplication and provide for consistency; and collaborating with other appropriate State agencies and service providers with responsibility for youth and adult workforce preparation (Public Act 87-1210, p. 3647).

The Skill Standards project conducted by Southern Illinois University (SIU) under the authority of ISBE indicates that the end goal of the state's skill standards and credentialing system is "to promote education and training investment and insure that this education and training enables students and workers to meet industry standards that are benchmarked to major international competitors" (see http://www.standards.siu.edu/). This goal is quite general but narrow, focusing primarily on education and training and the students and graduates of career/technical or workforce programs. Also, the goal specifies that students and workers will meet standards, but it does not go beyond that to specify the intended impact of enhanced student/worker preparedness on the individual, workforce, and society.

Further, the vision of the IOSSCC, as articulated on the website and within products available therein is to add value to Illinois' education and workforce development system by developing and supporting the implementation of a statewide system of industry defined and recognized skill standards and credentials for major skilled occupations that provide employment and earnings opportunities. As such, the IOSSCC endorses occupational skill standards and credentialing systems for occupations that:

- Require basic workplace skills and technical training,
- Provide a large number of jobs with either moderate or high earnings, and
- Provide career advancement opportunities to related occupations with moderate or high earnings.

Through telephone interviews, our research team discussed the intended goals, expectations, and intended outcomes with key stakeholders representing state agencies, local educators (secondary and postsecondary), and employers. Results of these interviews suggest a high level of appreciation for the idea of occupational skill standards. At the same time, a lack of consensus about what Illinois' occupational skill standards are intended to achieve is apparent, paralleling the concern articulated by Hoachlander and Rahn (1994) about constituents having difficulty reaching consensus. Whereas employers seem to characterize the skill standards as a vital ingredient in curriculum targeted at producing qualified workers, educators view the skill standards as having broader purpose and appeal.

They note the importance of employers using the standards in their own training and education programs; they also mention the potential to use the standards in hiring a more highly prepared workforce, though they are uncertain and sometimes skeptical about whether this is happening.

Some state staff and educators also perceive that the IOSSCC has moved beyond an advisory role in that the IOSSCC is providing leadership and concrete direction for the skill standards initiative while ISBE consultants, and by extension Southern Illinois University (SIU) personnel, operate as "staff" for the Council. Though the state statute is somewhat vague, it seems fairly clear in its intent is for the IOSSCC to be advisory to ISBE, specifying that ISBE is charged with administration of the Act.

To complicate matters for all parties, Public Act 67-1210 is essentially an unfunded mandate, in that state agencies, particularly ISBE, have to designate federal and state funds that could be dedicated to other functions under their purview to the state's skill standards initiative. When funding was more plentiful in the mid to late 1990s, ISBE officials observed that the project was manageable fiscally. Now, when state revenues are declining, the skill standards initiative has the potential to overwhelm ISBE's budget, threatening other priorities of the state's K-12 agency.

It is important to acknowledge that state staff do not lay blame on anyone's shoulders for the fiscal difficulties or complexities in implementation of skill standards. In fact, staff continue to believe in skill standards, with ISBE personnel mentioning the agency's strong, historic emphasis on curriculum tied to detailed occupational information. They note, for example, that the ISBE has played a role in developing task lists for secondary career-technical curriculum since at least post-WWII. Since that time, the ISBE has engaged its occupational consultants in curriculum efforts involving the development of duty and task lists. This is seen as both a blessing and a curse. Because of their long experience, state staff observed that there is the tendency for consultants to view this new skill standards initiative as an extension of the past in terms of developing contemporary, task-driven curriculum, which is a positive outcome. At the same time, staff complain that new skill standards "look too much like task lists" that describe fairly narrowly conceived, highly discrete aspects of jobs. One respondent complained that some of the skill standards focus on the "minutia" of a job, rather than broader, more transferable aspects. In responding to questions about how this situation came about, one respondent captured the sentiment shared by many when saying, "It's hard to say, the project seemed to take on a life of its own". Possibly, once the state's framework gained support from the IOSSCC, it became expedient to apply it across the board, including to areas where such detail was not needed as well as when industry-based skill standards and certifications already existed.

Among educators at both the state and local levels, there was the pervasive view that Illinois' skill standards initiative had not gone far enough to avoid duplication with nationally-recognized, industry-based skill standards and certifications. Staff point to state projects in areas where standards already existed, including the health, manufacturing, and utilities sectors. Often those interviewed had the impression that Illinois' initiative had not gone far enough to determine whether standards developed at the national level or from other states or professional groups could meet the needs of the state. Instead, there was the perception that the state prized the development of new standards under the "Illinois" label, resulting in a costly approach. Even when other standards were viewed as useful and potentially viable to the state, the state's process seemed to involve the same formalized process used for developing brand new standards. The extent to which this redundancy actually happened consistently is unknown, but it is important to note that the perception does exist.

Several state and local educators observed that the assessment and certification piece of Illinois' skill standards initiative is underdeveloped. Frustration was expressed by staff working closely with the IOSSCC and its sub-councils because of the lack of ability to move assessment and certification forward, due ostensibly to a lack of resources to support a stable, consistent effort in this direction. In

fact, more than one plan has been drafted to integrate assessment and certification into the state's skill standards initiative, though substantial progress has not been made. Part of the issue lies in the cost and complexity of this task. In addition to the highly specialized expertise that would be needed to develop exams tied to certification, the cost of developing new assessments is daunting. As one respondent put it, "all of this comes with a very hefty price tag!" At the same time, frustration was evident from those closely involved with the skill standards project who had advocated for an enhanced assessment and certification approach for some time. Referring our research team to proposals submitted by Northern Illinois University (NIU) on assessment and certification, there was a clear sense of disappointment about that state's not moving forward in a direction that seemed logical and appropriate.

Speaking to the issue of funding and the role of employers, experts from outside of the state helped to shed new light on Illinois' skill standards initiative. These individuals suggested that, while the benefits to employers are significant when educators reform curriculum and prepare a more qualified workforce, the potential for implementation of skill standards within their own places of employment are fairly weak. For example, how should employers resolve issues that arise when new job entrants who have met the new skill standards demonstrate competencies far higher than incumbent employees? How should human resource departments handle these potentially thorny situations equitably, both in terms of remuneration and career advancement? Apparently, in circumstances where industry-recognized skill standards are used by employers, it is largely when states mandate their use to gain access to state training dollars. But these circumstances are rare since skill standards at the national level and in most states are "voluntary". Without a reason to adopt, many employers fail to see the need to invest their own resources in an initiative that is viewed as a primary responsibility of public education and workforce training.

A final theme that emerged in interviews with constituents inside and outside the state dealt with confusion about the state's role in development of curricular frameworks without adequate attention to curriculum (program) development efforts at the local level. Historically, career-technical education programs have engaged employers in local advisory committees, utilizing these individuals to help guide decisions about curriculum offerings and local workforce needs. With so much attention on state-level standards, what should be the continuing role of local advisory committees? Who should resolve differences that emerge between the perspective of local educators and local advisory committees? Between the state's initiative and local efforts? Any instructor knows that the success of their career-technical program depends on grassroots support. Career-technical education programs flounder if they do not work closely with local employers to hire graduates and secure resources to insure that curricula and laboratories are kept current. Therefore, several interviewees urged officials to give more thought to skill standards that further workforce development goals at both the state and local levels.

Funding, Products and Outputs

Over the past 10-year period, the state (via ISBE) has invested approximately $5 million dollars in the Illinois' skill standards initiative. As evidenced in state statute, the primary administrative and fiscal responsibility for skill standards has fallen to ISBE, with some resources (though limited) appropriated by other state agencies such as the Illinois Community College Board (ICCB). For example, in 1998, the ICCB committed $80,000 to skill standards development and the issuance of an RFP to the community college system for the integration of skill standards into curriculum, assessment (both progression and prior experience), and accountability (skill standards as criteria for new programs).

Despite the resources appropriated by ISBE, it is notable that state consultants and SIU project personnel working on the project identify continuing issues with funding, both with the level and consistency of funding. They point out that consistent progress cannot be made on the skill standards initiative without a multi-year funding plan. Also, if the state is to move ahead with assessment and certification, funding above the current level will undoubtedly be needed.

Because documentation of the Illinois occupational skill standards initiative is available from other sources, we have chosen to limit our description of major milestones and accomplishments. Even so, it is noteworthy to point out that experts outside the state often described Illinois as a "national leader" in the skill standards movement. Our research team was told repeated that other states look to the NSSB and Illinois as one of a handful of leading states for skill standards before committing to develop their own standards. Certainly, Illinois' skill standards appear prominently on the National Centers for Career and Technical Education website (see www.nccte.org) where a comprehensive listing of career-technical, academic, and employability skills is offered.

With respect to the work of the IOSSCC, a review of the project website confirms that the state has developed 46 skill standards in a wide range of mostly entry-level occupational areas (Table 4), with some of the standards aligning with nationally-recognized and other industry skill standards (Table 5). Prior to FY 2000, the IOSSCC had endorsed skill standards in sixteen areas, usually clusters. In each fiscal year thereafter, the IOSSCC endorsed ten skill standards, almost always focusing on clusters. Assuming Illinois' skill standards initiative was funded at about $500,000 each of these years, it appears that each set of skill standards cost the state about $50,000. Though this figure is crude, it provides a rough estimate of the expense incurred in developing new skill standards in the past few years.

Table 4
Crosswalk of NSSB Standards and Illinois Skill Standards

Industry Sector	Illinois Standard Product (Date endorsed)
Agriculture, Forestry, and Fishing	Agriculture Lab and Field Book (June 02) Agriculture Machinery Service Technician (November 00) Agriculture Sales and Marketing Cluster (May 01) Beef Production Cluster (August 01) Floristry Cluster (Endorsed prior to FY 00) Greenhouse/Nursery Cluster (Endorsed prior to FY 00) Landscape Technician Cluster (Endorsed prior to FY 00) Row Crop Production Cluster (March 00) Swine Production Cluster (August 00) Welding (May 02)
Business and Administrative Services	Accounting Services Cluster (May 01) Administrative Support Cluster (Endorsed prior to FY 00) Information Processing Cluster (Endorsed prior to FY 00) Meeting Professional Cluster (August 01)
Construction	Architectural Drafting Cluster (March 00)

Industry Sector	Illinois Standard Product (Date endorsed)
Education and Training	----
Finance and Insurance	Banking Cluster (May 02) Insurance Cluster (November 00)
Health and Human Services	Dental Assistant (May 02) Dental Hygenist (November 00) Medical Office Cluster (Endorsed prior to FY 00) Nursing Cluster (Endorsed prior to FY 00) Occupational Therapy Cluster (February 01) Physical Therapist Assistant Cluster (August 99) Surgical Technologist (Endorsed prior to FY 00)
*Manufacturing, Installation and Repair	Chemical Process Technical Operators (Endorsed prior to FY 00) Imaging/Pre-Press Cluster (March 00) Machining Skills Cluster (Endorsed prior to FY 00) Mechanical Drafting Cluster (March 00) Metal Stamping Skills Cluster (Endorsed prior to FY 00) Plastics Molding Cluster (May 1) Press Operations Cluster (March 00)
Mining	----
Public Administration, Legal and Protective Services	Court Reporter/Captioner Cluster (May 00) Legal Office Cluster (Endorsed prior to FY 00)
*Restaurants, Lodging, Hospitality and Tourism, and Amusement and Recreation	Foodservice Cluster (Endorsed prior to FY 00) Housekeeping Management Cluster (August 00) Lodging Cluster (March 00)
*Retail Trade, Wholesale Trade, Real Estate and Personal Services	In-Store Retailing Cluster (November 01) Retail Garden Center Cluster (Endorsed prior to FY 00) Finishing and Distribution Cluster (March 00)
Scientific and Technical Services	Clinical Laboratory Science/Biotechnology Cluster (Endorsed prior to FY 00)
*Telecommunications, Computers, Arts and Entertainment, and Information Technology	Information Technology Design/Build Cluster (November 01) Information Technology Operate Cluster (November 01)
Transportation	Automotive Technician Cluster (May 00) Collision Repair Technician Cluster (November 01) Truck Driver, Entry-Level (Endorsed prior to FY 00)
*Utilities and Environmental	HVAC/R Technician Cluster (February 01)

Source: Memo dated October 23, 2002 to the Members of the Illinois Workforce Investment Board on Illinois Occupational Skill Standards Development.
Note: *Indicates the NSSB skill standard has been implemented or is currently under development.
---- Indicates there is no apparent Illinois skill standard to crosswalk with a NSSB standard.

Table 5
Crosswalk of Other Industry Skill Standards and Illinois Skill Standards

Industry Standard	Illinois Standard
Certified Forester	Forestry Cluster
National Voluntary Occupational Skill Standards: Agricultural Biotechnology Technician	Clinical Laboratory Science/Biotechnology Cluster
Skill Standards for Bioscience Industry	----
Automotive Technician	Automotive Technician Cluster
Collision Repair and Refinish Technician	Collision Repair Technician Cluster
Medium/Heavy Truck Technician	----
Skill Standards for Professional Solo Tractor-Trailer Drivers	Truck Driver, Entry-level
Administrative Support Occupations Skill Standards	Administrative Support Cluster
Business Finance Occupations Skill Standards	----
Business Management Skill Standards	----
Certified Banker	Banking Cluster
Customer Service and Sales Skill Standards	In-store Retailing Cluster
Information Technology Skill Standards	Information Technology Design/Build Cluster Information Technology Operate Cluster
Guidelines for the Preparation of Early Childhood Professionals	----
National Standards for Family and Consumer Sciences Education	----
Skill Standards for the Graphic Communications Industry: Finishing and Distribution	Finishing and Distribution Cluster
Skill Standards for the Graphic Communications Industry: Prepress/Imaging Operators	Imaging/Pre-Press Cluster
Skill Standards for the Graphic Communications Industry: Press (Sheetfed and Web Offset Press Operators)	----
Administrator/Technician	Administrative Support Cluster
Cardiovascular Technologist	----
Community Support Skill Standards for Direct Human Service Workers in the Human Services	----
Diagnostic Medical Sonographer	----
Electro-neurodiagnostic Technologist	----
Emergency Medical Technician	----
Health Information Commission	----
Medical Assistant	Medical Office Cluster

Industry Standard	Illinois Standard
National Health Care Skill Standards	----
Ophthalmic Medical Commission	----
Respiratory Therapist	----
Specialist in Blood Bank Technology	----
Surgical Technologist	Surgical Technologist
Technician/Technologist (generic allied health)	----
Therapeutic Recreation Skill Standards	----
Chef/Cook Skill Standards	Foodservice Cluster
Performance Criteria in Lodging and Foodservice Industries	Lodging Cluster
Characteristics of Competency: Measurement Criteria for Entry-Level Electronics Technician Skills	----
Construction Laborer Skill Standards: Concrete Worker	----
Construction Laborer Skill Standards: Lead Abatement Worker	----
Construction Laborer Skill Standards: Open Cut Pipe Laying	----
Construction Laborer Skill Standards: Petrochemical Remediation	----
Interim Job Descriptions and KSA Lists for Electrical Construction Worker	----
Interim Job Descriptions and KSA Lists for Electrical Line Construction Worker	----
Interim Job Descriptions and KSA Lists for Electrical-Residential-Construction Worker	----
National Photonics Skill Standards for Technicians	----
National Skill Standards: Heating, Air-Conditioning, and Refrigeration Technician	HVAC/R Technician Cluster
National Voluntary Skills Standard: Hazardous Materials Management Technology	----
Setting the Standard: A Handbook on Skill Standards for the High-Tech Industry	----
Skill Standards for Workers in the Uniform and Textile Service Industry for Production Workers	----
Skill Standards for Workers in the Uniform and Textile Service Industry for Maintenance Technician	----
Voluntary Industry Standards for Chemical Process Industries Technical Workers	----
Voluntary Industry Standards for Chemical Process Plant Operators	----
Welding Skill Standards Entry Level Welder	Welding Cluster
Welding Skill Standards Inspector	Welding Cluster
Health, Safety & Environmental Assurance	----

Industry Standard	Illinois Standard
Logistics & Inventory Control	----
Machine Building	----
Machining Operations	Machining Skills Cluster
Maintenance, Installation & Repair	----
Manufacturing Production Process Development	----
Metalforming	----
National Occupational Skill Standards: CADD (Computer Aided Drafting and Design)	Architectural Drafting Cluster Mechanical Drafting Cluster
Production	----
Quality Assurance	----
Tool, Die and Mold Making	Metal Stamping Skills Cluster Plastics Molding Cluster

Note: ---- Indicates there is no apparent Illinois occupational skill standard to crosswalk with the industry standard.

Utilization of Skill Standards in Illinois

The survey participants consisted of individuals representing business, education, and government (workforce training providers). Business participants were identified from companies that participated in skill standards development, employers of community college graduates, and Fortune 500 employers, all located in Illinois. Of the three groups, 40 business participants, 9 community college employers, and 5 Fortune 500 employers responded to the study. When comparing the three groups on awareness of the Illinois skill standards, there were significant differences (X^2=45.0, df=2, p<.001). Results showed that whereas 100% of business participants were aware of Illinois occupational skill standards, only 22% of community college employers were and none of the Fortune 500 were aware. In addition, the Fortune 500 companies Human Resource (HR) representatives participating in the survey were unable to direct the researchers to another individual in the organization who would be better suited to answer the questions or have awareness of the standards. Due to these differences, only individuals that participated in the development of the skill standards were included to compare with the education and workforce training groups.

Looking at the educator group, respondents included participants in three regional tech prep workshops covering the entire state: area vocational directors, education-to-careers steering committee members, and education-to-careers partnership coordinators. The workforce training providers represented in the study were employed by the IDES Local Workforce Investment Area and also IDES Rapid Response Agents.

Overall, the response rates for these groups are as follows: Of 303 businesses sampled, 40 (13%) responded; of 132 educators, 75 (57%) responded; and of the 77 workforce training providers sampled, 28 (36%) responded. For the business and the workforce training groups, early and late respondents were compared on items dealing with awareness and use. No significant differences were found in results for the early and late respondent groups, suggesting results can be generalized to the

population. Survey participants were analyzed according to groups that were defined as individuals from business, education, or workforce training providers.

Awareness and Use of Skill Standards

In Table 6 and Figure 1, the awareness and use of skill standards among business, education, and workforce training providers are displayed. Apparent in these displays is that there is a significant difference in the level of awareness and use of Illinois occupational skill standards among the business, education, and workforce training groups. Specifically, over 75% of all of the respondents (business, education, and workforce training) were aware of the Illinois' occupational skill standards. Even so, while all business respondents (n=40) were aware of the standards only 25% were implementing them; and while 75% of workforce training providers were aware of skill standards only about 18% were using them.

Educators were much more likely to be aware of and using skill standards than the other two groups, as is displayed in Table 6 and Figure 1. The only area where a difference was not detected among the groups was in their awareness of national skill standards, indicating that the level of awareness of all three groups was relative high.

To gain a better understanding of why Illinois' occupational skill standards were not being used, the research team conducted a telephone follow-up survey with 30 respondents who reported not using Illinois' occupational skill standards. Reasons for not using the standards that are likely to be indicative of responses from the entire group of business representatives follow:

- "Currently there are no standards available for the functions our company performs." - *Business/President*
- "Skill standards are too general to be of value to our business."- *Business/Director*
- "Have not received any information in regards to it." *–Business/Senior Vice President*
- "Our company created similar tasks like this many years ago using the current system. Would like to use it for recruiting but I don't know how. More advertising is needed." - *Business /Training Manager*
- "Unsure of their helpfulness."-*Business/Vice President*
- "We use National Standards in our program. When we developed the program, the IL standards were not complete. We have not bothered to convert at this time."- *Business/Training Manager*
- "I'm not aware of Illinois skill standards."*–Business/Director, Corporate Strategy and Training*
- "Using National Standards, not aware of Illinois standards." *–Business/Human Resources*
- "Can see value of national standards but not the state standards."-*Business/Manager, Human Resources*

- "We use some of them sparingly. The primary reason we don't focus on them a great deal is that area employers don't know about them and there is no good way to assess student performance or attainment of the standards."-*Education/Director*

Table 6
Business, Education, and Workforce Training Awareness and Use of Illinois and National Skill Standards

	f	*P*	X^2	*df*	*P*
Aware of Illinois Skill Standards			12.58	2	.002[a*]
Business	40	100.0			
Education	68	91.0			
Workforce	21	75.0			
Using of Illinois Skill Standards			19.28	2	<.001*
Business	10	25.0			
Education	45	60.0			
Workforce	5	17.9			
Aware of National Skill Standards			5.96	2	.051
Business	27	67.5			
Education	65	86.7			
Workforce	22	78.6			
Using of National Skill Standards			27.46	2	<.001*
Business	5	12.5			
Education	41	54.7			
Workforce	4	14.3			

Note: [a]= 2 cells had a count less than 5.
Business (n=40), Education (n=75), Workforce (n=28).
*p <.05

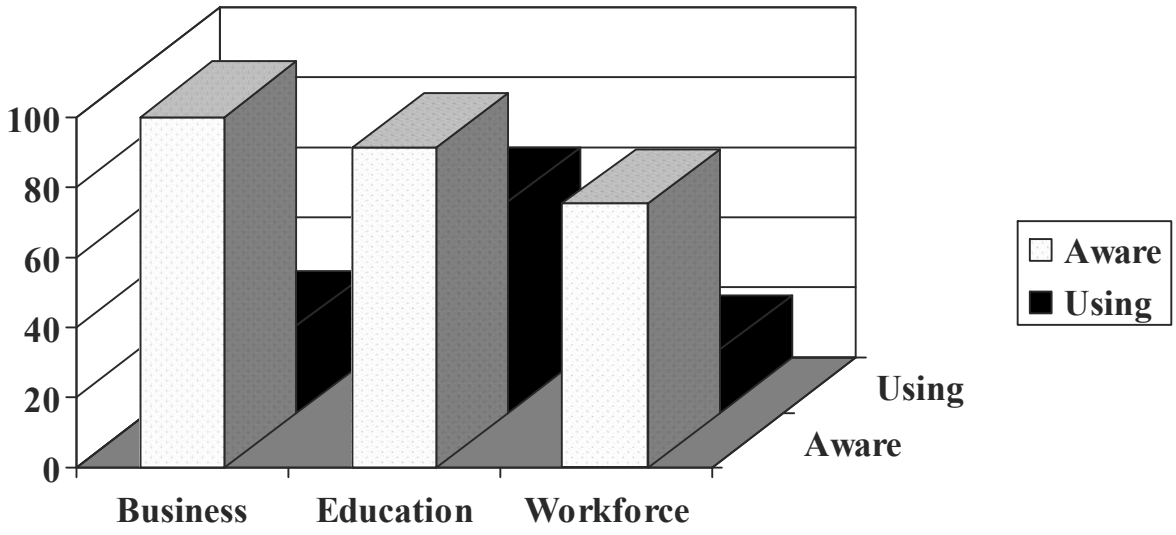

Figure 1. Awareness and Use of Skill Standards Illinois and National Skill Standards by Business, Education and Workforce Training Providers

Stakeholder Familiarity with Skill Standards

How business, education, and workforce training providers became familiar with the Illinois occupational skill standards and who familiarized them is presented in Table 7. The majority of both business and education became familiar of Illinois occupational skill standards through "partnerships with educational institutions" whereas "mailings" were the primary way workforce training providers became familiar with them.

When asked who familiarized them with the Illinois occupational skill standards, the three groups reported different primary ways. Business reported the "Illinois Occupational Information and Coordination Committee" as the primary group responsible for familiarizing them. Educators reported the "Illinois State Board of Higher Education" as the primary group responsible for familiarization. Finally, workforce training providers reported the "Illinois Department of Commerce and Community Affairs" is the primary group responsible for familiarizing them with the Illinois occupational skill standards. Combined, the ISBE familiarized the greatest number of respondents (n=61, 47%).

Table 7
Business, Education, and Workforce Training Familiarity with Illinois Skill Standards

	Business		Education		Workforce		Combined	
	f	*P*	*f*	*P*	*f*	*P*	*f*	*P*
How did you become familiar								
Partnerships with educational institutions	16	40.0	34	45.3	3	10.7	53	41.1
Partnerships with business and industry	13	32.5	16	21.3	1	3.6	30	23.3
Mailings	4	10.0	30	43.5	6	21.4	40	31.0
Seminars	3	7.5	28	40.6	4	19.0	35	27.1
Professional journals	1	2.5	18	26.1	2	9.5	21	16.3
Internet	1	2.5	6	8.7	0	0.0	7	5.4
Legislation	1	2.5	6	8.7	2	9.5	9	7.0
Who familiarized you								
IL Occupational Information and Coordination Committee	17	42.5	18	26.1	0	0.0	35	27.1
IL State Board of Education	10	25.0	49	71.0	2	10.0	61	47.3
IL Community College Board	4	10.0	18	26.1	3	15.0	25	19.4
Professional organizations	2	5.0	12	17.4	1	5.0	15	11.6
IL Department of Employment Security	1	2.5	11	15.9	10	50.0	22	17.1
IL Board of Higher Education	0	0.0	5	7.2	1	5.0	6	4.7
Legislatures	0	0.0	1	1.3	0	0.0	1	1.0
IL Department of Commerce and Community Affairs	0	0.0	5	7.2	6	30.0	11	8.5

Note: Individuals could select all that apply and valid percents were calculated for missing data.

Utilization of Skill Standards

In Table 8, information regarding the use of Illinois occupational skill standards by business, education, and workforce training are presented. Though the number of respondents is relatively small (particularly for the business and workforce training groups), results show sizeable differences in the level of use of skill standards for the three groups studied. The education group (n=45) utilized Illinois occupational skill standards more frequently than either business (n=10) or workforce training (n=5). Of all skill standards areas, the nursing and automotive standards were utilized the most, showing a 62% combined utilization rate. With respect to utilization of individual clusters, the nursing and automotive clusters were followed by the information processing cluster (58%), welding cluster (47%), and machining cluster (45%).

Table 8
Utilization of Illinois Skill Standards by Business, Education, and Workforce Training

	Business *(n=10)*		Education *(n=45)*		Workforce *(n=5)*		Combined	
	f	***P***	***f***	***P***	***f***	***P***	***f***	***P***
Accounting Services Cluster	0	.00	24	53.33	1	20.00	25	41.7
Administrative Support Cluster	0	.00	20	44.44	2	40.00	22	36.7
Agriculture Machinery Service Technician	0	.00	18	40.00	2	40.00	20	33.3
Agriculture Sales and Marketing Cluster	0	.00	12	26.67	2	40.00	14	23.3
Architectural Drafting Cluster	1	10.00	19	42.22	2	40.00	22	36.7
Automotive Technician Cluster	3	30.00	32	71.11	2	40.00	37	61.7
Beef Production Cluster	0	.00	6	13.33	2	40.00	8	13.3
Chemical Process Technical Operations	0	.00	1	2.22	0	.00	1	1.7
Clinical Laboratory Science/Biotechnology Cluster	0	.00	3	6.67	0	.00	3	5.0
Collision Repair Technician Cluster	1	10.00	15	33.33	1	20.00	17	28.3
Court Reporter/Captioner	1	10.00	1	2.22	1	20.00	3	5.0
Entry-Level Truck Driver	1	10.00	3	6.67	2	40.00	5	8.3
Finishing and Distribution Cluster	0	.00	2	4.44	1	20.00	3	5.0
Floristry Cluster	0	.00	8	17.78	0	.00	8	13.3
Foodservice Cluster	3	30.00	21	46.67	1	20.00	25	41.7
Greenhouse/Nursery Cluster	0	.00	16	35.56	0	.00	16	26.7
HVAC/R Technician Cluster	2	20.00	6	13.33	1	20.00	9	15.0
Housekeeping Management Cluster	0	.00	2	4.44	0	.00	2	3.3
Imaging /Pre-Press Cluster	1	10.00	5	11.11	1	20.00	7	11.7
Information Processing Cluster	2	20.00	33	73.33	0	.00	35	58.3
Information Technology Design/Build Cluster	2	20.00	10	22.22	2	40.00	14	23.3
Information Technology Operate Cluster	1	10.00	10	22.22	3	60.00	14	23.3
In-Store Retailing Cluster	0	.00	4	8.89	2	40.00	6	10.0
Insurance Cluster	0	.00	2	4.44	1	20.00	3	5
Landscape Technician Cluster	1	10.00	12	26.67	1	20.00	14	23.3
Legal Office Cluster	0	.00	4	8.89	1	20.00	5	8.3
Lodging Cluster	0	.00	4	8.89	1	20.00	5	8.3
Machining Skills Cluster	1	10.00	26	57.78	0	.00	27	45.0

	Business (n=10)		Education (n=45)		Workforce (n=5)		Combined	
	f	*P*	*f*	*P*	*f*	*P*	*f*	*P*
Mechanical Drafting Cluster	0	.00	17	37.78	1	20.00	18	30.0
Meeting Professional Cluster	0	.00	2	4.44	1	20.00	3	5.0
Metal Stamping Skills Cluster	0	.00	4	8.89	0	.00	4	6.7
Nursing Cluster	1	10.00	34	75.56	2	40.00	37	61.7
Occupational Therapy Cluster	1	10.00	6	13.33	1	20.00	8	13.3
Physical Therapist Assistant Cluster	1	10.00	4	8.89	0	.00	5	8.3
Plastics Molding Cluster	1	10.00	5	11.11	1	20.00	7	11.7
Press Operations Cluster	1	10.00	6	13.33	1	20.00	8	13.3
Retail Garden Center Cluster	0	.00	5	11.11	1	20.00	6	10.0
Row Crop Production Cluster	3	30.00	5	11.11	2	40.00	10	16.7
Surgical Technologist	0	.00	4	8.89	1	20.00	5	8.3
Swine Production Cluster	0	.00	9	20.00	1	20.00	10	16.7
Welding Cluster	1	10.00	26	57.78	1	20.00	28	46.7

Note: Individuals selected all that apply

Tasks Associated with the Use of Skill Standards

Tasks associated with Illinois occupational skill standards are shown in Table 9, with results presented for business, education, and workforce training. Education reported utilizing the skill standards for tasks more often then business. For example, the highest mean for business was 3.57 (SD=1.4) whereas the highest for education was 3.99 (SD=.92). These results indicate business utilized the skill standards less than 51% of the time while education reported utilization almost 75% of the time. Of the tasks described, "developing learning objectives" was the most often used task by business whereas the education group ranked "developing or revising curriculum" as the most often used task, with the task of "developing learning objectives" only slightly lower. Workforce training providers ranked the two tasks of "developing learning objectives" and "assessing individual outcomes" as utilized equally frequently. In reviewing Table 9 it is also evident that educators ranked additional tasks at about the same level as the highest rated tasks of the business or workforce training group. These tasks include "articulating with secondary school" (3.63, SD=1.05), "designing work-based learning experiences" (3.60, SD 1.14), "modifying instructional practices" (3.60, SD=1.05), and "collaborating with business and industry" (3.53, SD=1.10).

It is also noteworthy that the use of the skill standards in various business functions such as promoting, recruiting, and assessing work experience was given a relatively low rating by all three respondent groups. Specifically, none of the three groups rated these tasks higher than 2.33, which was the rating given to "promoting employees" by the business respondents. Ratings on these tasks were particularly low from the workforce training provider respondent group which rated most of these tasks well below 2.0.

Table 9
Tasks Utilizing Illinois Skill Standards by Business, Education and Workforce

	Business (n=10)		Education (n=45)		Government (n=5)				*Bus Rank*	*Ed Rank*	*Wkf Rank*
	M	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***			
Developing learning objectives	3.57	1.40	3.95	0.94	3.67	1.51	0.52	0.59	1	2	1/2
Developing training programs	3.45	1.63	3.57	1.20	2.50	1.52	1.66	0.20	2	6	10
Communicating business expectations to students or employees	3.30	1.34	3.47	0.95	2.67	1.03	1.62	0.21	3	8	7
Designing work-based learning experiences	3.20	1.62	3.60	1.14	3.40	1.52	0.44	0.65	4/5	4	3
Modifying instructional practices	3.17	1.47	3.60	1.05	3.20	1.64	0.59	0.56	4/5	5	5
Developing or revising curriculum	3.14	1.35	3.99	0.92	3.33	1.63	2.63	0.08	6	1	4
Assessing individuals outcomes	3.00	1.25	3.44	1.08	3.67	1.51	0.80	0.45	7	9	1/2
Assessing program outcomes	2.88	1.64	3.29	1.18	2.50	1.26	1.39	0.26	8	12	11
Collaborating with educational institutions	2.78	1.79	3.42	1.16	1.43	0.79	7.70	0.00	9	10	24
Marketing educational program to business and industry	2.75	1.91	3.34	1.02	2.20	1.30	2.46	0.10	11	11	13
Designing employee development	2.75	1.39	2.80	1.23	2.14	1.57	0.75	0.48	10	18	14
Marketing educational program to students or employees	2.63	1.85	3.09	1.19	2.00	1.10	2.06	0.14	12	15	16
Partnering with workforce development programs	2.57	1.62	3.28	1.22	2.29	1.50	2.26	0.11	13	13	12
Benchmarking to compare skill levels of potential employees to current	2.56	1.13	2.66	1.20	1.83	1.60	1.09	0.35	14	21	18
Collaborating with business and industry	2.55	1.69	3.53	1.10	2.57	1.27	3.96	0.02	15	7	9
Attaining program or school accreditation	2.50	1.64	2.97	1.54	2.67	1.53	0.27	0.76	16	17	8
Assessing or evaluating employees work performance	2.44	1.33	2.69	1.44	1.80	1.30	0.87	0.43	17	19	20
Articulating with two year schools	2.43	1.81	3.15	1.16	2.00	0.89	2.92	0.06	18	14	16
Promoting employees	2.33	1.12	2.19	1.11	1.50	0.58	0.87	0.43	19	23	22
Recruiting employees	2.13	0.99	1.88	1.07	1.50	0.84	0.64	0.53	20	25	23
Providing certification of attainment of skills	2.11	1.05	3.08	1.18	3.00	1.63	2.37	0.10	21	16	6
Assessing or evaluating employees work experience	2.11	1.05	2.63	1.50	1.83	1.17	1.08	0.35	23	22	19
Screening applicants for employment	2.11	0.78	1.96	1.25	1.71	1.11	0.24	0.79	22	24	21
Articulating with four year	2.00	1.41	2.69	1.35	1.33	0.82	3.08	0.06	24	20	24

	Business (n=10)		Education (n=45)		Government (n=5)				*Bus Rank*	*Ed Rank*	*Wkf Rank*
	M	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***			
schools											
Articulating with secondary schools	1.80	1.79	3.63	1.05	2.00	1.00	9.30	0.00	25	3	15

Note: Scale 1= not used, 2=used less than 25% of the time, 3=used 26-50% of the time, 4=used 51-75% of the time, and 5=used 76-100% of the time

Current Condition of Skill Standards

In Table 10 the current condition of Illinois occupational skill standards and comparisons by business, education, and workforce training are presented. Business participants indicate the highest level of occurrence with respect to the current condition associated with implementation as "Illinois skill standards integrate occupational and academic education". The education group indicated its highest rating with respect to current condition as "skill standards are accessible to my organization", suggesting educators were aware of skill standards and valued their accessibility. Workforce training providers rated "Illinois skill standards are clear and precise (i.e. language/jargon within are understandable)" higher than all other statements, suggesting a level of satisfaction with the way the standards are communicated.

Significant differences were found in how the three groups responded to seven of the current condition statements. The differences were generally between the workforce training provider group and the other two groups of business representatives and educators. Conditions in which the workforce training providers differed from the other two groups were related to the integration of Illinois skill standards into occupational and academic education, the value placed on students graduating from programs using skill standards, the accessibility of skill standards, and the currency of skill standards with organizational needs. For three conditions, educators' ratings were higher than employers and workforce training providers. These conditions were related to general awareness of skill standards, use of skill standards, and funding of skill standards. All groups rated "my organization is funding skill standards in Illinois" at the lowest level of all statements; however educators differed from the other two groups in that they were significantly more likely to rate funding as a current condition of implementation than the other two groups.

Table 10
Current Conditions of Illinois Skill Standards by Business, Education and Workforce

	Business (n=10)		Education (n=45)		Workforce (n=5)						
	M	*SD*	*M*	*SD*	*M*	*M*	*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
Illinois skill standards integrate occupational and academic education.	3.45	0.69	3.14	0.77	2.33	1.03	4.08	0.02	1	5	7
My organization values students that complete a program that uses Illinois skill standards.	3.22	0.97	2.97	0.77	2.00	1.10	4.16	0.02	2	9	9
The Illinois Occupational Skill Standards are accessible to my organization.	3.20	0.92	3.55	0.55	2.71	1.25	4.48	0.02	3	1	2
Illinois skill standards are current with my organization's needs.	3.18	0.40	2.97	0.67	2.00	0.82	8.07	0.00	4	10	10
Illinois skill standards are clear and precise. (i.e. language/jargon within are understandable)	3.17	0.94	3.17	0.67	3.00	1.10	0.13	0.88	5	3	1
My organization would recognize certifications that are aligned with Illinois skill standards.	3.00	0.82	3.26	0.70	2.71	0.95	1.69	0.19	6	2	3
My faculty members/instructors/trainers are knowledgeable of Illinois skill standards.	2.83	1.17	3.15	0.65	2.33	1.15	1.94	0.15	7	4	6
My faculty members/instructors/trainers integrate skill standards in teaching and learning.	2.67	1.37	3.06	0.57	2.67	1.53	1.01	0.37	8	7	4
My organization has evidence that skill standards impact employee/student outcomes.	2.56	1.01	2.76	1.05	2.00	0.89	1.47	0.24	9	11	11
In my organization, there is general awareness of Illinois skill standards.	2.55	1.04	3.12	0.67	2.57	1.13	3.10	0.05	10	6	5
My faculty members/instructors/trainers use Illinois skill standards.	2.14	1.46	2.99	0.73	2.33	1.15	3.39	0.04	11	8	8

	Business (n=10)		Education (n=45)		Workforce (n=5)						
	M	*SD*	*M*	*SD*	*M*	*M*	*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
My organization is funding skill standards in Illinois.	1.33	0.82	2.15	1.03	1.00	0.00	3.23	0.05	12	12	12

Note: Scale 1=Not occurring, 2=Seldom occurring, 3=Frequently occurring, 4=Always occurring

Conditions for Implementing Skill Standards

Table 11 displays the importance of conditions for successful implementation of Illinois' occupational skill standards, comparing business, education, and workforce training provider results. In rating these items, the three groups were more likely to be in agreement than in their ratings of current conditions, showing no statistically significant differences between groups for any of the items. Both business respondents and workforce training providers rated, "My faculty members/instructors/trainers integrate skill standards in teaching and learning" at 4.00 (extremely important) for successful implementation of Illinois occupational skill standards. Business respondents rated "Illinois skill standards integrate occupational and academic education" at the same high level, plus workforce training providers rated "My faculty members/instructors/trainers use skill standards", "Illinois skill standards are clear and precise", and "My organization values students that complete a program that uses Illinois skill standards" at 4.00, indicating the extremely high importance of these conditions.

When comparing respondent ratings on the importance of the conditions for successful implementation to the current conditions, there was incongruence in many areas with current conditions rated much lower than the importance of conditions. For example, all three respondent groups rated the importance of the condition dealing with "My faculty members/instructors/trainers use Illinois skill standards" between 3.50 and 4.00 on importance but the rating of this item in terms of its being a current condition ranged from only 2.14 to 2.99. In only one case did we find congruence and that was in the integration of academic and occupational education wherein this condition was rated quite high as a current condition and on importance to successful implementation.

Table 11
Importance of Conditions for Implementing Illinois Skill Standards by Business, Education and Workforce

	Business (n=10)		Education (n=45)		Workforce (n=5)						
	M	*SD*	*M*	*SD*	*M*	*M*	*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
My faculty members/instructors/trainers integrate skill standards in teaching and learning.	4.00	0.00	3.51	0.77	4.00	0.00	1.34	0.27	1	4	2
Illinois skill standards integrate occupational and academic education.	4.00	0.00	3.63	0.75	3.50	0.58	1.12	0.34	2	1	5
My organization has evidence that skill standards impact employee/student	3.88	0.35	3.39	0.93	3.83	0.41	1.61	0.21	3	9	9

	Business (n=10)		Education (n=45)		Workforce (n=5)		*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
	M	*SD*	*M*	*SD*	*M*	*M*					
outcomes.											
My faculty members/instructors/trainers use Illinois skill standards.	3.80	0.45	3.50	0.76	4.00	0.00	0.96	0.39	4	5	3
Illinois skill standards are clear and precise. (i.e. language/jargon within are understandable)	3.78	0.44	3.58	0.68	4.00	0.00	1.06	0.36	5	2	1
My organization values students that complete a program that uses Illinois skill standards.	3.75	0.46	3.43	0.81	4.00	0.00	1.26	0.29	7	8	4
My faculty members/instructors/trainers are knowledgeable of Illinois skill standards.	3.75	0.50	3.49	0.77	3.33	1.15	0.28	0.76	6	6	6
Illinois skill standards are current with my organization's needs.	3.67	0.50	3.39	0.80	3.60	0.89	0.56	0.57	8	10	12
The Illinois Occupational Skill Standards are accessible to my organization.	3.44	0.73	3.46	0.90	3.29	1.25	0.10	0.90	9	7	7
In my organization, there is general awareness of Illinois skill standards.	3.44	0.53	3.58	0.72	3.75	0.50	0.30	0.74	10	3	11
My organization would recognize certifications that are aligned with Illinois skill standards.	3.29	1.11	3.39	0.90	3.80	0.45	0.54	0.59	11	11	10
My organization is funding skill standards in Illinois.	2.60	1.34	2.76	1.21	1.40	0.89	2.74	0.08	12	12	8

Note: Scale: 1=Not important, 2=Somewhat important, 3=Very important, 4=Extremely important

Perceived Impact of Skill Standards

NEED TO HAVE JAMES DOUBLE CHECK THE GROUP DIFFERENCES – I CAN'T INTERPRET WITHOUT POST-HOC COMPARISONS

In Table 12 the perceived impacts of Illinois occupational skill standards are presented and compared for the business, education, and workforce training provider groups. Both business and workforce training providers rated the statement: "Illinois skill standards encourage alliances between education and business/industry" as highest in terms of their perception of impact. Educators rated 'Illinois skill standards enhance career and technical education (CTE) programs" as their highest overall. When comparing the three groups, businesses rated skill standards as having a higher impact than education and workforce training providers in five areas: "Illinois skill standards encourage individuals to take more ownership of their skill development", "Illinois skill standards help identify competent individuals for employment in my organization", "Illinois skill standards provide a benchmark for my organization to compare skill levels or employees", "Illinois skill standards will lower my organization's recruiting costs", and "Illinois skill standards decrease my organizations time to screen prospective employees".

Table 12
Perceived Impact of Illinois Skill Standards by Business, Education and Workforce

	Business (n=10)		Education (n=45)		Workforce (n=5)						
	M	*SD*	*M*	*SD*	*M*	*M*	*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
Illinois skill standards encourage alliances between education and business/industry.	4.15	0.55	3.91	0.69	3.78	0.67	0.97	0.38	1	2	1
Illinois skill standards provide a basis for educational goals.	4.08	0.76	3.83	0.77	3.33	1.12	2.23	0.12	2	3	4
Individuals from programs with industry certification have higher level skills than those from programs without.	4.00	0.71	3.76	0.82	3.56	0.73	0.88	0.42	3	5	3
Illinois skill standards encourage individuals to take more ownership of their skill development.	4.00	0.58	3.57	0.81	2.78	1.09	6.07	0.00	4	8	9
Illinois skill standards demand more accountability of occupational education programs than what is presently required.	3.92	0.76	3.60	0.93	3.33	0.87	1.23	0.30	5	7	5
Illinois skill standards enhance Career and Technical Education (CTE) programs.	3.85	0.69	4.07	0.65	3.67	0.87	1.54	0.22	6	1	2
Individuals who meet	3.73	0.88	3.83	0.76	3.11	1.05	2.87	0.06	8	4	6

	Business (n=10)		Education (n=45)		Workforce (n=5)						
	M	*SD*	*M*	*SD*	*M*	*M*	*F*	*p*	*Bus Rank*	*Ed Rank*	*Wkf Rank*
Illinois skill standards have a smoother school-to-work transition than those who do not.											
Illinois skill standards help identify competent individuals for employment in my organization.	3.73	0.90	3.47	1.02	2.43	1.51	3.45	0.04	7	13	13
Illinois skill standards provide a benchmark for my organization to compare skill levels or employees.	3.70	1.06	3.49	0.89	2.29	1.25	5.18	0.01	9	12	15
Programs that use Illinois skill standards are more effective than programs that do not.	3.64	0.81	3.68	0.91	3.00	1.15	1.59	0.21	11	6	7
Illinois skill standards have a positive effect on the productivity of my organizations workforce.	3.64	0.81	3.38	0.82	2.57	2.43	2.99	0.06	10	14	10
Programs that use Illinois skill standards are more effective than those that do not.	3.62	0.77	3.57	0.83	2.89	1.05	2.64	0.08	12	9	8
From the experience in my organization, Illinois skill standards encourage alliances between education and business/industry.	3.45	1.13	3.57	0.90	2.43	1.27	3.87	0.03	14	10	12
Individuals who complete training/education using Illinois skill standards meet my organization's requirements for entry level jobs.	3.45	1.21	3.34	0.84	2.43	1.13	2.96	0.06	13	15	14
In my organization it is common to hear that educational programs that use Illinois skill standards have a better reputation than programs that do not.	3.36	1.03	3.14	1.02	2.00	1.29	4.07	0.02	16	16	19
Illinois skill standards will lower my organization's	3.36	0.50	2.82	0.87	1.86	1.07	6.94	0.00	15	19	20

	Business (n=10)		Education (n=45)		Workforce (n=5)		F	p	Bus Rank	Ed Rank	Wkf Rank
	M	*SD*	*M*	*SD*	*M*	*M*					
recruiting costs.											
Illinois skill standards decrease my organizations time to screen prospective employees.	3.27	1.01	2.21	0.84	1.86	1.07	7.07	0.00	17	21	21
Illinois skill standards lower my organization's training costs.	3.18	0.75	3.00	0.95	2.29	1.25	2.05	0.14	18	17	16
Illinois skill standards provide a basis for career goals in my organization.	3.09	1.30	3.56	0.94	2.00	1.00	6.91	0.00	19	11	18
Illinois skill standards are used by business and industry to determine who should be promoted.	3.08	1.12	2.98	0.95	2.56	1.13	0.81	0.45	20	18	11
In my organization, employees who meet Illinois skill standards receive higher wages than those who do not.	2.91	0.83	2.68	1.09	2.14	1.07	1.18	0.32	21	20	17

Note: Scale: 1-Stongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly agree

Presented in Table 13 are selected results from Illinois community colleges participating in a national study that examined skill standards use sponsored by the National Center for Research in Career and Technical Education (NRCCTE), headquartered at the University of Minnesota. (As noted previously, this study was directed by Dr. James Bartlett, a co-director of this study.) Of the 13 community colleges that responded, eleven (84.6%) were aware of national industry-based skill standards. Skill standards were being implemented *at some level* across all ten career-technical education programs areas examined. However, it is clear that each community college in the study was not implementing skill standards across all program areas, and none of the skill standards were being implemented universally by all community colleges responding to the survey. In only one case, Automotive (53%), did over half the individuals that were aware of skill standards report implementation.

Figure 2 shows the level of awareness and use of the 13 Illinois community colleges on each of the ten career-technical education areas studied. For each career-technical area, two bars are displayed. The first pattern bar shows the percentage of community colleges reporting awareness and the second bar gives the percentage of colleges reporting implementation. Automotive, consumer and family sciences, and health show the most similarity in colleges being aware and implementing.

Overall, use of national skill standards by Illinois community colleges was similar to the use of Illinois skill standards reported by business, education, and workforce training providers in this study. Illinois community colleges reported the highest levels of use of the skill standards for developing curriculum, developing learning objectives, and assessing students and programs. Similarly to respondents to our survey, the Illinois community colleges indicated that skill standards were being used least in the area of faculty selection and for business functions.

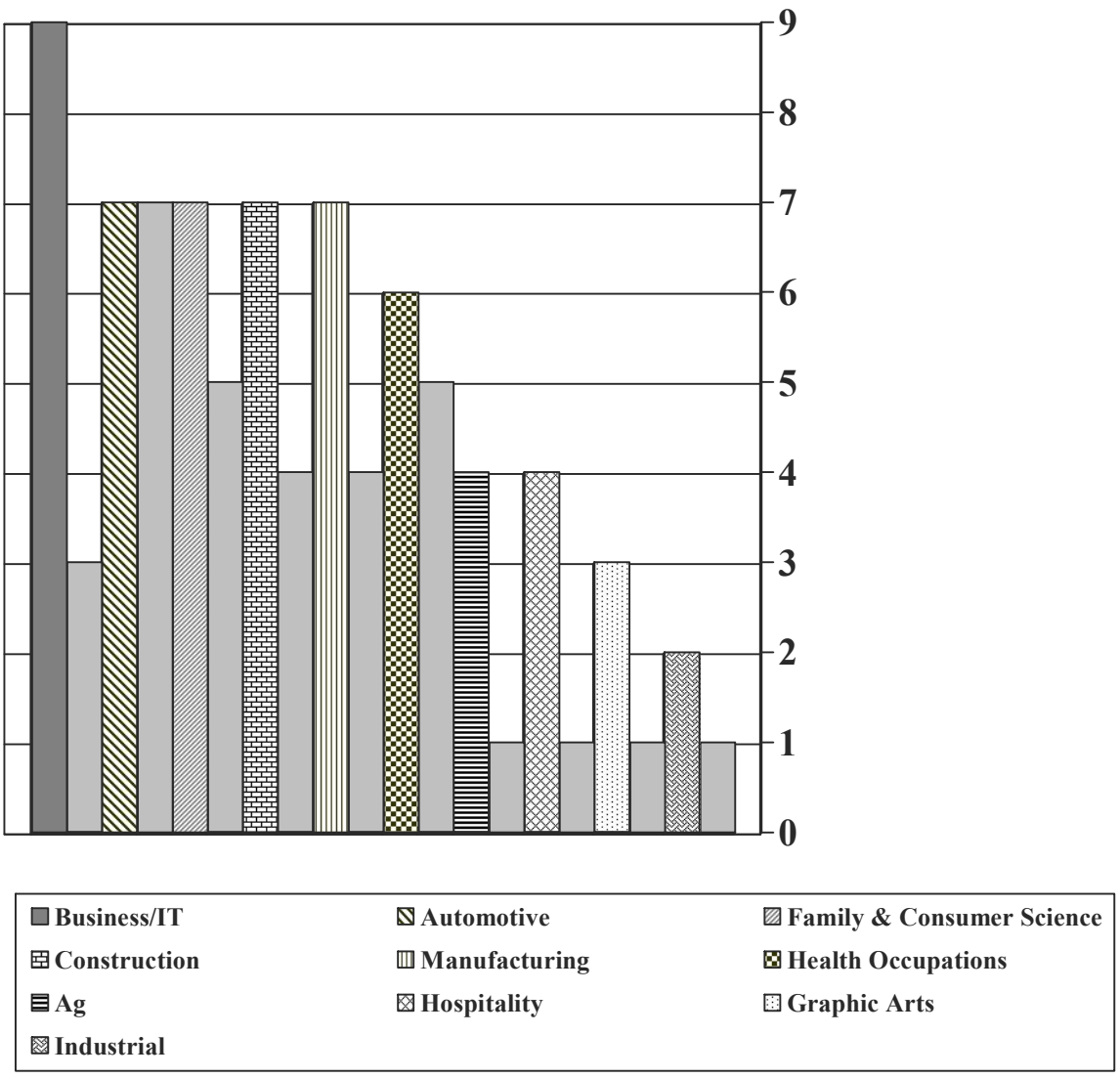

Figure 2. Percentage of Illinois Community College Respondents Reporting Awareness and Use of National Skill Standards (n=13)

IMPLICATIONS AND FUTURE OPTIONS

Goals, Expectations, and Intended Outcomes

There was high level of support for the concept of skill standards and the role these standards can play in guiding education and training to prepare a more qualified workforce. Even so, there was a lack of consensus among respondents and interviewees about what Illinois' occupational skill standards initiative is intended to achieve and what its intended outcomes should be. State statute specifies the end goal of Illinois' occupational skill standards as "to identify occupations for the development of standards and to verify nationally-developed standards", under the authority of ISBE, with the IOSSCC acting in an advisory capacity. ISBE consultants have engaged in the state standards project, sometimes blurring the lines between occupational skill standards and curriculum duty and task lists. At the same time, a perception exists that Illinois' occupational skill standards have not gone far enough to avoid duplication with national- and industry-based standards and certifications.

Assessment and certification is viewed as an important piece of Illinois' skill standards initiative for all parties, but these activities have not been supported adequately. A number of reasons are given for limited movement in this direction, including funding limitations, the need to employ specialists in testing and measurement, and the high priority placed on the sequential development of skill standards and dealing with assessment and certification later. No matter what the reasons, there is frustration among constituents at the state and local level regarding the lack of progress in tying skill standards to certifications.

With so much attention on skill standards at the state level, local educators worry about the continuing role of their local employer advisory committees and how to resolve differences between standards advocated at the state and local levels. History shows that, without grassroots support, career-technical programs flounder. Career-technical education programs do not want to alienate local employers, because their expertise is vital. And they hire their graduates and offer resources to keep curriculum and laboratories current.

Funding, Products, and Outputs

Over the past 10-year period, the state has invested approximately $5 million dollars in the Illinois' skill standards initiative. Despite the resources dedicated to the project, funding is viewed as too modest to support the full implementation of the state's occupational skill standards initiative including development and implementation of standards, assessment, and certifications. As an unfunded mandate, uncertain funding on a year-to-year basis creates discontinuity in executing a coherent, on-going project plan.

A review of products and outputs shows that 46 skill standards have been produced in a wide range of occupational areas, several of which are aligned with the NSSB skill standards and other industry-based skill standards. Even so, there are a large number of industry-based skill standards that are not yet addressed by Illinois' skill standards initiative, with many of these offering potentially useful information for the state.

Awareness and Use of Skill Standards

A high percentage of educators were both aware of and using occupational skill standards. In contrast, 100% of all businesses affiliated with the IOSSCC and its sub-councils and 75% of workforce training providers were aware of the Illinois occupational skill standards but only 25% or fewer of these respondents reported using them.

Business partnerships with employers, educational institutions, and other employers provided mechanisms for communicating about occupational skill standards. For education, awareness of the skill standards was universally high. Results show the Illinois Occupational Information and Coordination Committee (IOICC) was the group most likely to familiarize businesses with the skill standards; ISBE was the organization that familiarized educators with skill standards; IDES was the organization that familiarized workforce training providers with skill standards.

Twenty-four of the 42 occupational skill standards (57%) included in our survey were not used by business, including the accounting service cluster, agricultural machinery service technician, chemical process technician, housekeeping management, insurance cluster, and others. Even so, some occupational skill clusters were experiencing a fairly high level of usage in the state. For example, over 70% of the educational respondents indicated they used the automotive technician cluster, nursing cluster, and information processing cluster. It is noteworthy that all of these clusters are tied to occupations where certifications are useful or necessary to secure gainful employment.

Looking at tasks that utilize Illinois skill standards, "developing learning objectives" is rated high by all three groups. "Revising curriculum" was rated highest by education, 4th by workforce training providers, and 6th by employers. Workforce training providers ranked "assessing program outcomes" highest, whereas educators ranked this task 9th, and business ranked it 7th. Educators ranked "articulating with secondary skills" as 3rd, whereas it was rated much lower by business and workforce training, 25th and 15th respectively. These results seem to reinforce an earlier finding about a lack of consensus regarding the purpose of skill standards, showing how each group has its own reasons for using them.

None of the surveyed groups (business, education, workforce training) showed strong support for using their own resources to fund skill standards. This conclusion reflects the fact that the lowest rated item for all three groups was that "their organization is funding skill standards in Illinois", suggesting they are not engaged in actively funding skill standards locally.

Business and educators are aligned similarly on their support for the importance of integrating academic and occupational education. Workforce training providers did not rate this item as highly as business and education, but it appears in the top half of the ratings for all three groups. In rating various items associated with the perceived impact of the skill standards, business and workforce training provides report the largest impact is on partnerships whereas the education and workforce training groups saw skill standards as a means of enhancing career-technical education.

Business differed from educators and government in perceiving impact related to taking ownership of their skill development, with business rating this item higher than the other two groups. Business seemed to see skill standards as mechanisms to encourage individuals to take responsibility for personal career development, while educators and workforce training providers were less likely to view them in that way.

FUTURE OPTIONS

Based on the quantitative and qualitative results, three sets of options are articulated below to enhance future implementation of skill standards in Illinois.

- ❖ Shift from an Input to an Outcomes Orientation

  - Move from the current emphasis on inputs tied to *development and use* of skill standards to *integration* of existing nationally-recognized, industry-based skill standards and certifications, with heightened emphasis placed on *measuring outcomes and impact*.

- Ensure continued partnerships among key stakeholders because broad-based support is critical to enhancing utilization of skill standards at the state and local levels, with diverse constituents such as business, education, and workforce training.

- Consistent with Illinois' commitment to local control, emphasize a locally-vested, outcomes-driven skill standards initiative that includes a clearly-developed plan for how state efforts support and reward local efforts, where local employer advisory boards play a critical role.

❖ Shift the State Role to Adoption or Adaptation of Skill Standards

- Utilize the adoption of skill standards from nationally-recognized industry organizations as a first choice, basing the decision to adopt on a clear set of criteria that is developed and widely agreed upon by key stakeholders in the state. This adoption strategy should be accompanied by exhaustive research to determine the quality and utility of skill standards in similar locations as those wanting to adopt them in Illinois. Adoption can entail re-formatting and creating guidelines to encourage use, but it should not require new development work.

- Adaptation should be the state's second choice in terms of skill standards. Adaptation should occur when a set of skill standards is shown to meet an established set of criteria (mentioned above), including the existence of nationally-recognized industry assessments and certifications.

- As a last resort, the state should have the authority to develop brand new skill standards in highly critical occupational areas, but this step should be taken only when it is shown to meet a clear set of criteria (mentioned above).

- In adopting, adopting or developing skill standards, the state should use a consistent framework that is tied to quality indicators. To avoid spreading resources too thin, the state should focus on highly targeted industry clusters that have established certifications. Skill standards linked to curricula should follow logically from existing certifications.

- Throughout, encourage a broad-based advisory role involving employers, educators, workforce providers, employees, graduates, and others to insure that skill standards and certifications are valid and reliable, but also to encourage buy-in and use on the local level.

❖ Shift More Responsibility for Skill Standards from the State to the Local Level

- Engage local employers, educators and workforce providers in decisions about adoption and adaptation to increase their ownership. At present, local groups are involved in limited fashion until they are informed that a set of skill standards is being developed and distributed. To engage these groups earlier in a more systematic manner could increase their commitment to using skill standards

- At present, there is no significant incentive or reward for local employers, educators and workforce providers to integrate skill standards into their local initiatives or to attempt to determine whether skill standards have had a positive outcome. To encourage their use, more thought needs to be given to adequate incentives and rewards for local utilization. Moreover, beyond the program review processes conducted periodically by the ISBE and

the ICCB, more deliberate effort needs to be given to accountability in using skill standards and assessing their impact on Illinois' workforce.

- Increase technical assistance from the state level to the local level including high schools, area career centers, community colleges, 4-year colleges and universities, workforce training providers, and places of employment where skill standards should be used on a wider scale. Create user-friendly tools and techniques to facilitate local use and implementation.

❖ Enhance Evaluation of the Effectiveness of Illinois Skill Standards

- Currently, the Illinois skill standards initiative does not have a strong evaluation component, and this needs to be changed. More emphasis needs to be placed on not only monitoring and measuring the use of skill standards but the outcomes skill standards have on students/employees, education and training programs, and employers, the workforce and economy.

- Support systematic evaluation activities that produce results that are needed to mobilize the business/employment community, workforce training providers, and other key stakeholders, including measures of student/graduate/employee quality, retention, advancement, and productivity. Such efforts are bound to help potential stakeholders understand the benefits of skill standards and become more engaged in integrating them into their work.

- Create rewards and incentives for programs that demonstrate success in integrating skill standards, including evidence of particularly high levels of use of skill standards and strong evidence of student/graduate/employee success. This effort can be modeled after the National Center for Career and Technical Education's national exemplary career-technical education project, headquartered at the University of Illinois at Urbana-Champaign and The Ohio State University.

- Disseminate the results of evaluation efforts widely to achieve greater visibility for and acceptance of the state's skill standards initiative, and to provide needed information to improve state and local efforts to implement skill standards and fulfill their intent of enhancing the qualify of Illinois' workforce.

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