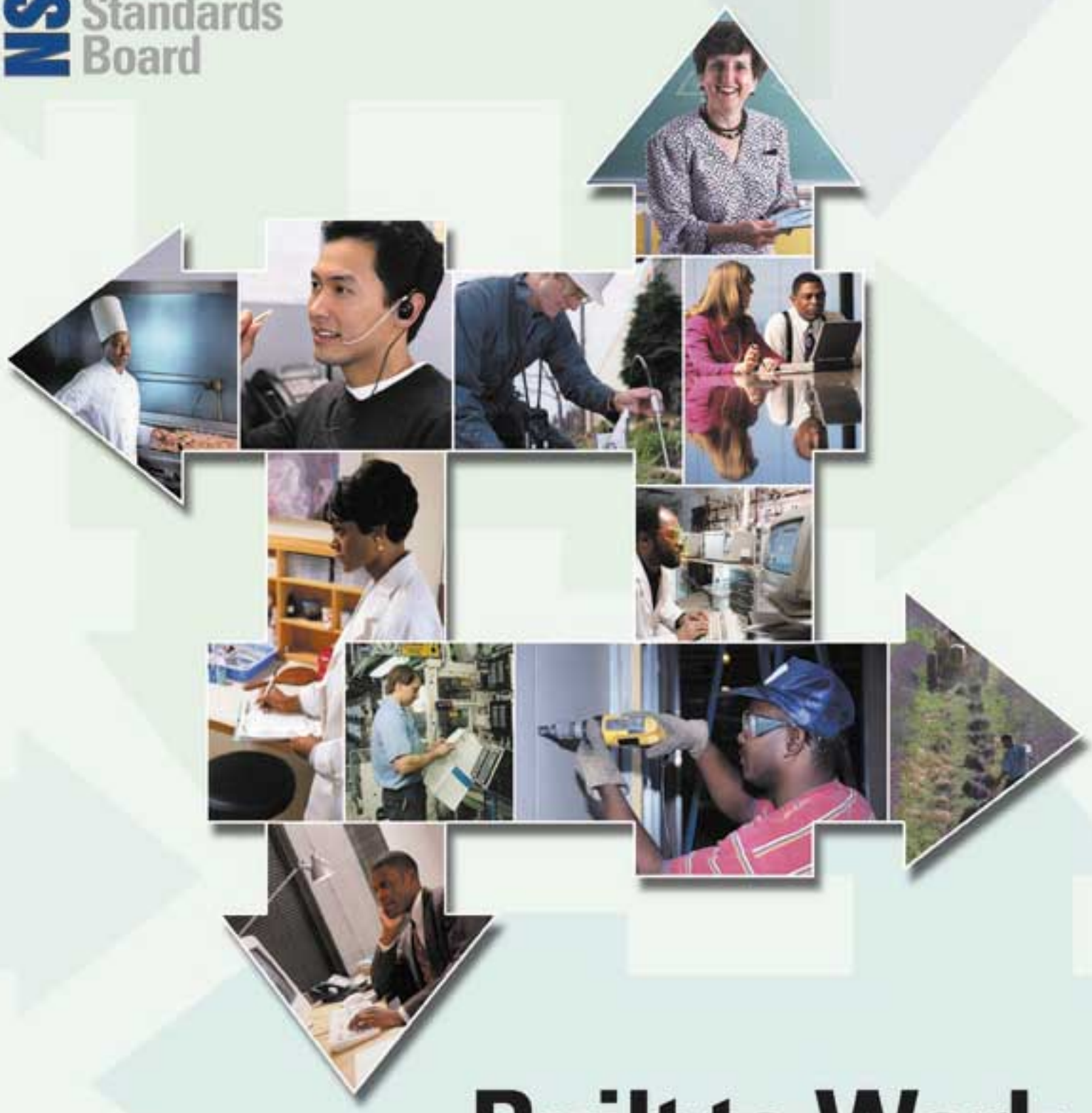
NSSB National Skill Standards Board



Built to Work

A Common Framework for Skill Standards

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Built to Work

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Preface

About This Guidebook…

Built to Work provides an overview of the Common Framework for Skill Standards developed by the National Skill Standards Board (NSSB). The guidebook is designed for Voluntary Partnerships, convening groups, and anyone else interested in learning more about how skill standards can increase the skills and productivity of U.S. workers.

Who We Are…

The NSSB is a coalition of leaders from business, labor, employee, education, and community and civil rights organizations created in 1994 to build a voluntary national system of skill standards, assessment, and certification. The goal of this effort is to enhance U.S. global competitiveness and raise the living standard of all Americans.

NSSB skill standards, which form the foundation of this new system, are being identified by Voluntary Partnerships, industry coalitions working in full partnership with labor, civil rights, and community-based organizations. Additional information about the NSSB and the Voluntary Partnerships can be found in Appendix A and B.

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National Skill Standards Board

Setting the Standard for Workforce Excellence

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CHAPTER 1

Introduction

Walk into the offices, factories, and shops of America's leading companies and you will find a very different workplace from the past…

- Administrative assistants, who once answered the phone and took messages, are at ground zero of the communications revolution. They are selecting complex and expensive equipment, helping tailor these new systems to the needs of the office, and training colleagues on how to get the greatest benefit.
- Autoworkers, who once spent almost all their time on the assembly line making products, are now working in teams to speed production and improve quality.
- Shop clerks, who once sold a handful of easy-to-understand appliances, must now explain the features of dozens of computers with an endless array of applications.

New technologies, global competition, and market demands for better, faster, more customized products and services require an increasingly skilled and productive workforce. Top companies know that to achieve their business goals, they need a new level of skill, flexibility, and professionalism from all workers.

But how can we develop a workforce capable of meeting these challenges? It requires a new approach by employers, workers, trainers, educators, unions, parents, and students. At the foundation of this new approach are skill standards.

What Are Skill Standards?

Imagine trying to build a house without a blueprint. You might have a general idea of where you want the kitchen or how many bedrooms you need. But to get it right, you need a detailed picture of what you're working toward and a plan to get there.

Building a highly skilled workforce is similar. We know work is changing, but how? We know workers need new skills, but which skills? We need an accurate picture of what we are working toward in order to prepare workers for this new world of work. We need a blueprint. We need skill standards.

BY AND FOR FRONTLINE WORKERS

The initial focus of this project is on developing skill standards for frontline workers. By frontline, we mean positions up to and including what is typically thought of as the first level of supervision.

To develop these skill standards, we are going directly to the experts—thousands of competent frontline workers and supervisors in high-performance companies. Who better to describe what today's workplace requires than the very people succeeding within it?

Skill standards—as defined by the NSSB—answer two major questions:

1. What does someone need to do on the job to perform competently?

and

2. What knowledge and skills will enable them to carry out these responsibilities?

By answering these questions, skill standards will give us a vivid portrait of the knowledge, skills, and performance needed to succeed in today's workplace.

Skill standards will offer a new vision for organizing work—one that calls on frontline workers to assume greater responsibility; use advanced skills and technologies; and play a larger role in meeting customer needs. This is a sharp change from the past when workers were mostly expected to follow orders, use a narrow set of skills, and leave issues, such as improving quality or cutting costs, to management. By describing a new role for frontline workers, skill standards will help employers and workers make the transition to the new world of high-performance work.

What does on-the-job excellence require and what does it take to get there? That's exactly what skill standards will tell us.

What does on-the-job excellence require and what does it take to get there? That's exactly what skill standards will tell us.

Everyone Stands to Gain

Skill standards will have many uses to many different stakeholders:

- Workers can use skill standards to find out how to improve their performance, select the right training and education, and advance in their careers.
- Employers can use skill standards to improve training and development, reduce the costs of hiring, and make the transition to high-performance.
- Employers and educators can use skill standards to increase opportunities for minorities and women, including removing barriers to the entry of women into non-traditional employment.
- Educators can use skill standards to create curriculum that better prepares students for work.
- Students, unemployed workers, and others can use skill standards to identify the skills they need to prepare for high-wage jobs.

HIGH PERFORMANCE DEFINED

Throughout this guidebook, you will see the term "high-performance"—a catch phrase describing those companies that place a premium on quality and customer service, and believe that a highly skilled frontline workforce, capable of handling new technologies and taking on broader responsibilities than in the past, is critical to achieving these goals. Skill standards are being developed to reflect the needs of the high-performance organization—the direction we believe more and more employers are heading as they respond to growing global competition. By capturing the needs of the high-performance organization, standards will help move the country forward, preparing individuals for the new challenges of work.

- Industries can use skill standards to inform potential employees, educators, and trainers of the skills needed for employment.

- Government can use skill standards to evaluate the effectiveness of publicly funded training programs.

One way to think about skill standards is as a tool for improving the workforce; how people use this tool will be up to them.

OPENING UP OPPORTUNITIES

One of the key goals of developing skill standards is to open up career opportunities for all Americans. Skill standards will help remove barriers to employment in several different ways:

- **By spelling out the knowledge, skills, and performance needed for success in today's job market, skill standards will make information that is vital to career success more accessible to larger numbers of individuals.**

- **When standards are used to develop assessments and certifications, employers can replace subjective measures with more objective measurements based on skill standards. This move toward more objective measurements will help eliminate bias in important employment decisions.**

Skill standards endorsed by the NSSB will be developed using rigorous research methods, including industry-wide validation. In addition, the NSSB intends to develop tools to help employers quickly and cost-effectively validate the standards for their specific employment environments.

To ensure the use of standards and their related assessments and certifications comply with U.S. employment law and civil rights law, employers are legally required to conduct an internal validation of the standards before using them to make hiring and promotion decisions, just as they do today for any new standards or tests they use. The purpose of employer validation is to ensure that the knowledge, skills, and performance described by the standards are necessary for the job.

The Importance of Assessment and Certification

Skill standards on their own are useful, but they are just one part of the equation. After all, skill standards may tell us what to work toward, but they don't tell us whether we have succeeded. That's why, in addition to developing skill standards, the NSSB and its partners are working to build a voluntary system of assessment and certification based on those standards.

In today's knowledge-based economy, the need for such a system of assessment and certification is critical. The skills required for work are increasingly complex, making decisions about who to hire and what kinds of training they might need a lot more challenging. Individuals moving between jobs and industries need a way to communicate their qualifications to potential employers. To keep pace with fast-changing technologies and business strategies, people need a clear roadmap of what they need to learn and a way to demonstrate those achievements over time.

Assessment and certification based on standards will give individuals an opportunity to earn certificates so that they can demonstrate their mastery of the standards to employers and others. The system will also give people a way to compare their skills to the standards—vital information they can use when selecting training, education, and other kinds of experiences to improve their performance.

The Key Is Coordination

Recent years have seen a proliferation of skill standards—a positive sign that so many organizations are taking seriously the need for a highly skilled workforce. But with so many different kinds of standards has come considerable confu-

A VOLUNTARY SYSTEM

This project is voluntary, meaning that employers, educators, trainers, workers, and others will decide whether to use the skill standards and the assessment and certification systems being developed. That means that the work we do must stand on its own merits—that the only way we will succeed is if the system we develop benefits all stakeholders. In the next few chapters, you will see how the NSSB Common Framework will help us do just that.

sion among employers, policymakers, workers, students, educators, and others about which standards they should use and trust.

By working together, we avoid duplication, save money, and send a clear message to all Americans about the demands of today's workplace. Coordination is also needed to create a certification system that has national recognition and is portable across industries.

For a certification system to work well, it must be relevant from company to company, industry to industry, and state to state. Individuals who earn certifications based on standards must be able to use those credentials to get jobs anywhere in the country. Employers must know that a certificate earned on the East Coast means the same as one earned in the Midwest. Without coordination, we risk ending up with a hodgepodge of skill standards and certifications that will be relevant only to one narrow segment of the economy or to one small region of the country. This lack of communication severely limits workforce mobility.

The Role of Voluntary Partnerships

That's where Voluntary Partnerships enter the picture. In each industry sector, the NSSB is helping establish Voluntary Partnerships—industry-led coalitions made up of thousands of employers, employees, unions, educators, and community organizations. These Voluntary Partnerships are working to develop a voluntary system of skill standards, assessment, and certification.

What makes the Voluntary Partnerships so powerful—and what will ultimately help ensure the success of the skill standards and certifications they develop—is the diversity and size of their membership.

At work now developing skill standards are three Voluntary Partnerships representing approximately:

- 3.2 million employers;
- 56 million workers or 43 percent of the workforce; and
- Over 300 organizations, including civil rights groups, community-based organizations, labor unions, and education and training organizations.

By working together, we avoid duplication, save money, and send a clear message to all Americans about the demands of today's workplace.

With this level of support and coordination, the goal of building a voluntary national system of skill standards, assessment, and certification is within reach.

The Need for a Common Framework

To help guide the Voluntary Partnerships, the

NSSB has developed a Common Framework for Skill Standards.

What should standards look like? How should they be developed across different industries and jobs within the economy? How can we ensure they reflect the needs of today's high-performance organizations? The NSSB's Common Framework for Skill Standards—the focus of the rest of this guidebook—helps answer these questions.

The challenge of building a voluntary national system of skill standards, assessment, and certification is huge, but so are the payoffs. At stake are the future competitiveness of U.S. companies, the wages and job security of U.S. workers, and the overall health of the economy. Everyone stands to gain. So, let's begin.

CHAPTER 2

An Overview of the NSSB Common Framework for Skill Standards

In the United States, there are more than 130 million workers doing thousands of different jobs in hundreds of different industries. So, where do we start?

The NSSB Common Framework for Skill Standards begins by dividing the U.S. economy into 15 "industry sectors"—segments of the economy that share similar skill requirements. For each of these sectors, skill standards will be developed that apply across the entire sector.*

The industry sectors are:

- Agriculture, Forestry, and Fishing
- Business and Administrative Services
- Construction
- Education and Training
- Finance and Insurance
- Health and Human Services
- Manufacturing, Installation, and Repair
- Mining
- Public Administration, Legal, and Protective Services
- Restaurants, Lodging, Hospitality and Tourism, and Amusement and Recreation
- Retail Trade, Wholesale Trade, Real Estate, and Personal Services
- Scientific and Technical Services
- Telecommunications, Computers, Arts and Entertainment, and Information
- Transportation
- Utilities, Environmental, and Waste Management

Why develop skill standards around industry sectors? One of the goals of building a voluntary national skill standards system is to equip workers with "portable" skills and certifications they can use to get as many different jobs in as many different industries as possible.

Providing workers with portable skills and certifications opens up career opportunities and protects people against dislocation resulting from changes in the economy. For example, a laid off worker with the skills to work in six different industries would likely be able to find a new job more easily than an individual qualified to work in just one industry.

To promote portability of skills and certifications, skill standards need to equip individuals with broad sets of skills that will enable them to work in as many different industries as possible. One way to achieve this goal would be to identify skill

* Voluntary Partnerships, industry-led coalitions that the NSSB helped to establish, have already begun developing skill standards in several of these sectors.

standards that would apply to every industry from farming to manufacturing to hospitality. The problem with this approach is that the standards developed would either be so voluminous that they would be impossible to master or so broad that they would not enable individuals to do any specific job well in any specific industry.

At the same time, developing skill standards for each narrow industry (e.g., one set for automobile manufacturing, another for airplane manufacturing, and yet another for furniture manufacturing) would equip workers with such specific skills that it would be difficult for them to transfer those skills beyond that industry.

Industry Sectors Strike a Balance

Industry sectors strike a balance, grouping industries with similar skill requirements for the purposes of developing skill standards. In this way, individuals who acquire these skills will be equipped to work in many different industries. And mastery of those skills will be within reach because the industries share so many of the same skill needs.

For example, automobile manufacturing, airplane manufacturing, food manufacturing, and more than half a dozen other manufacturing industries are all part of the same industry sector, known as the *Manufacturing, Installation, and Repair* industry sector. While there are some differences between what employees making automobiles need to know and what employees making airplanes need to know, there are many similarities. This makes it possible to develop standards that would give individuals many of the skills needed to work in both of these manufacturing settings.

Developing skill standards that will help prepare people for work across an entire industry sector opens job possibilities for individuals. For example, an individual who masters skill standards for the manufacturing industry sector would have many of the skills needed to work in an auto plant, a chemical plant, and the many other manufacturing industries that make up the sector.

In addition to giving individuals portable skills and certifications, developing standards that apply across an industry sector also gives employers a large pool of broadly trained workers from which to choose.

To promote this kind of portability across industries, Voluntary Partnerships are being established to develop skill standards for the industry sectors listed earlier.

Core, Concentration, and Specialty Standards

The next major challenge is organizing skill standards around the many different frontline jobs within each industry sector. For any given industry sector, there are dozens of different frontline jobs.

In manufacturing, for example, some people work as assemblers, while others work as test technicians and still others as health and safety inspectors. Should one set of standards be developed that covers all these jobs? Or should separate standards be developed for each of these jobs?

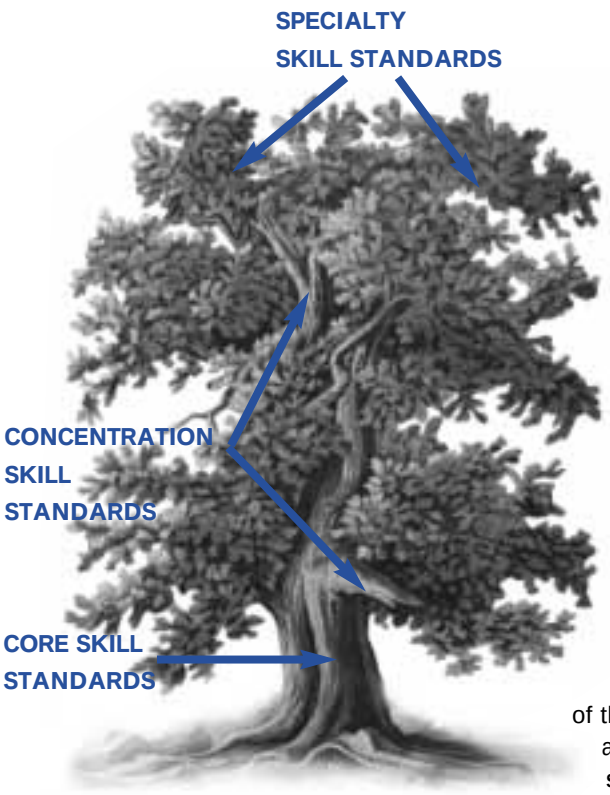
Again, the Common Framework strikes a balance, calling for the development of three types of skill standards within an industry sector:

- *Core standards* The knowledge, skills, and performance that are common and critical to all frontline jobs within an industry sector. By mastering the core standards, individuals will gain a broad base introduction to work across the sector.

- *Concentration standards* The knowledge, skills, and performance that are needed for

major areas of frontline responsibility, typically covering families of related jobs and occupations. By mastering standards for a concentration, individuals will gain expertise in particular areas of frontline work carried out across the sector.

- *Specialty standards* The knowledge, skills, and performance, which are unique to a particular job or occupation, to an individual industry, or to a specific company. By identifying the skills that are unique to a single job, occupation, industry, or company, specialty standards help fill some of the gap left by core and concentration standards. That's because core and concentration standards will focus on the skills that are common across different industries and jobs, but will not cover skills that are relevant to only a single job, occupation, industry, or company. That's the job of specialty skill standards.



Core skill standards, which give individuals a broad base introduction to the skills needed to work across an industry sector, are represented by the trunk of the tree. **Concentration skill standards**, which focus on a particular area of work and cover families of related jobs, are represented by each branch. **Specialty skill standards**, which center on the skills that are unique to a particular job, occupation, industry, or company, are represented by the leaves.

A VARIETY OF CAREER PATHWAYS

The knowledge and skills of most American workers fall into one or all of the three tiers of skill standards. By developing core, concentration, and specialty skill standards, we can give an individual in any tier the flexibility to either gain broader knowledge and skills or get more specific. Such a system can work wherever the individual is within the system.

The development of core, concentration, and specialty skill standards for each industry sector will help us build a system that achieves several different goals, from enabling workforce mobility to meeting the needs of today's high-performance organizations. Let's look at how.

Promoting Portability

One of the major challenges of developing portable skills and certifications is finding the right balance between providing individuals with both breadth and depth. On the one hand, to enable individuals to move between jobs and industries more easily, we need to equip workers with the broad skills required for work in as many different settings as possible. On the other hand, to do any given job today often requires a high level of specialized knowledge and skill.

The three types of skill standards seek to strike the right balance. The core standards give individuals a large degree of breadth so that they can do many different kinds of work across an industry

sector. The concentration standards aim to provide individuals with depth so that they can handle particular kinds of work across an industry sector. The specialty standards provide even more depth in a particular job, occupation, industry, or company practice.

We envision a system in which individuals do not just focus on mastering one type of standard, but master a mix of the different types of standards throughout their career. In this way, individuals can gain the broad skills that will enable them to move more easily between jobs and industries and the more specialized skills that they will often need to advance in their careers.

Meeting the Needs of High Performance

The development of core, concentration, and specialty skill standards also reflects the needs of today's high-performance work organizations. These organizations require an increasing degree of flexibility within the workforce.

By flexibility, we mean the ability of frontline workers to carry out a broad range of responsibilities in order to help their organizations respond faster and more effectively to changing market conditions and customer needs. For example, frontline workers have traditionally focused almost exclusively on making a product or delivering a service. In today's high-performance organizations, individuals are working to improve quality and reduce costs as part of their efforts to make a product or deliver a service. They are also dealing directly with customers and often working as part of teams that share a range of roles and responsibilities.

The development of core, concentration, and specialty standards will help build this kind of flexibility within the workforce a couple of different ways. First, core standards identify the skills that are common and critical to all frontline jobs across an industry sector. This will give individuals a base of skills to perform a wide range of tasks, helping to build a more flexible workforce.

Second, the concentration standards will give individuals a greater depth of skills in a particular area of work, which also promotes flexibility. Instead of covering the skills required for one narrow job, the concentrations cover the skills required for broad areas of work, typically covering related jobs and occupations. Again, this will help build a more flexible workforce.

To gain a better understanding of how skill standards promote portability and support the needs of today's high-performance organizations, let's take a closer look at each type of standard. We will begin by looking at concentration skill standards–the first type of skill standards that will be developed by the Voluntary Partnerships.

Concentration Standards

One of the first steps in the standards development process is the identification of concentrations. Instead of developing standards for individual jobs, concentrations focus the development of standards around major areas of work responsibility, typically covering families of related jobs and occupations.

The Common Framework calls for the identification of up to six concentrations within each industry sector.

Here are some draft sample concentrations identified by the Manufacturing Skill Standards Council, the NSSB Voluntary Partnership developing standards for the *Manufacturing, Installation, and Repair* industry sector. The following draft concentrations will serve as an organizing mechanism for the development of skill standards (more detailed information about what a standard actually looks like is provided in the next chapter).

DRAFT SAMPLE MANUFACTURING CONCENTRATIONS

CONCENTRATION CATEGORY → Manufacturing production process development

CONCENTRATION DEFINITION → *Develop, implement, and improve the manufacturing process through early production and process changes. Assess product and process design for manufacturability.*

SAMPLE JOB CLASSIFICATIONS → (Manufacturing technician, process improvement technician, manufacturing engineering technician, jig and fixture designer, tool and die maker.)

CONCENTRATION CATEGORY → Logistics and inventory control

CONCENTRATION DEFINITION → *Plan and control the movement and storage of materials and products in the manufacturing system.*

SAMPLE JOB CLASSIFICATIONS → (Material handler, material mover, material associate, inventory specialist, material analyst, shipping and receiving associate, store keeper, crib tender, production planner and scheduler.)

CONCENTRATION CATEGORY → Production

CONCENTRATION DEFINITION → *Set up, operate, monitor, control, and improve manufacturing processes and schedules to meet customer and business requirements.*

SAMPLE JOB CLASSIFICATIONS → (Operator, production associate, assembler, set-up operator, fabricator, systems operation, production lead, process control operator.)

CONCENTRATION CATEGORY → Production quality assurance

CONCENTRATION DEFINITION → *Ensure the manufacturing system meets quality system requirements as defined by business and its customers.*

SAMPLE JOB CLASSIFICATIONS → (Lab technician, SPC coordinator, inspector, quality control technician.)

CONCENTRATION CATEGORY → Health, safety, and environmental assurance

CONCENTRATION DEFINITION → *Ensure that the manufacturing system meets health, safety, and environmental requirements.*

SAMPLE JOB CLASSIFICATIONS → (Health and safety representative, safety coordinator, safety team leader, environmental compliance, waste disposer.)

CONCENTRATION CATEGORY → Maintenance, installation, and repair

CONCENTRATION DEFINITION → *Ensure the maintenance of the manufacturing system fulfills customer and business requirements. Install and repair equipment on the manufacturing floor.*

SAMPLE JOB CLASSIFICATIONS → (Industrial maintenance mechanic, industrial maintenance electrician, millwright, maintenance worker, network technician, mechanic.)

A few things to note about concentration standards:

- Concentration standards are designed to promote portability of skills and certifications because they apply to all industries within an industry sector. For example, if an individual mastered the standards for the *Production* concentration listed above, he or she would have many of the skills needed to perform production work in a furniture manufacturing plant, a chemical manufacturing plant, and more than a half dozen other manufacturing industries that are part of the *Manufacturing, Installation, and Repair* industry sector.

- Concentration standards are designed to build flexibility in the workforce, a key requirement of today's high-performance organizations. Instead of identifying skills for one narrow job, concentration standards identify the skills needed for the major areas of work that get done across an industry sector. That means an individual who masters one concentration will likely be prepared to do the work of what might have traditionally been thought of as several different jobs. This definition of work reflects the structure of many of today's high-performance organizations, where individuals are typically responsible for broad areas of work. The sample job classifications provided with these manufacturing concentrations suggest the many different job titles covered by each concentration.

Core Standards

Once standards have been identified for each concentration, the Voluntary Partnerships will be able to see what knowledge, skills, and performance are common and critical across all the concentrations. This information will form what are called core skill standards, which will give individuals a broad base introduction to many kinds of work across the industry sector.

For example, working to improve quality will likely be reflected in the standards developed for every manufacturing concentration listed above from the *Production* concentration to the *Logistics and Inventory Control* concentration. If this is identified in the research, then the core standards for manufacturing will likely reflect this.

A few things to note about core standards:

- Core skill standards will help increase the portability of skills and certifications by giving individuals a broad base of skills that apply to all frontline jobs in all industries within an industry sector. This same broad base of skills will also help build a more flexible workforce, capable of carrying out a broad range of responsibilities.

- The core skill standards will help educators prioritize curriculum because they identify what is essential for success across an industry sector.

- The identification of core skill standards may even help increase the portability of skills and certifications from one industry sector to another industry sector (until now, this guidebook has mainly focused on portability of skills and certifications within an industry sector). For example, we may find that 25 percent of the core standards required for the *Manufacturing, Installation, and Repair* industry sector are exactly the same as those required for the *Utilities, Environmental, and Waste Management* industry sector. This kind of overlap, which will be easier to identify with core standards, would help workers certified in skill standards for one industry sector prepare for work and possibly find jobs in another industry sector.

Core and Concentration: A Powerful Combination

To obtain certification within the NSSB voluntary national skill standards system, individuals will be required to demonstrate mastery of the core skill standards *plus* standards for at least one concentration in an industry sector (this is called a *Core Plus Certificate*). Some individuals may choose to pursue certification in more than one concentration or in all of them.

Even if an individual masters standards for only one concentration, he or she will still have to demonstrate mastery of the core standards to obtain certification. With mastery of core standards as a requirement, individuals will have a base of skills to handle a broad range of responsibilities and the necessary foundation to one day learn, perform, and be certified in the other concentrations within an industry sector. This will make the mastery of additional concentrations easier, helping to both promote flexibility in the workforce and prepare individuals for future challenges.

At the same time, by requiring mastery of standards for a concentration in order to get a *Core Plus Certificate*, individuals will be able to attain many of the more in-depth skills and knowledge they will need to walk into a job and begin performing competently.

Specialty Standards

We have spoken a lot about portability and flexibility and how important it is to develop standards that apply across different industries and jobs in order to achieve these two goals. Both concentration and core skill standards promote portability and flexibility by focusing on what is common and critical across related industries and jobs.

While core and concentration skill standards will cover a large part of what an individual needs to know and be able to do to succeed at work, they will not cover everything. For example, sales assistants working for a clothing store and a computer wholesaler will need many of the same skills (e.g., the ability to work with customers to identify their needs, the ability to sell a particular product, etc.) But there are differences between what someone selling computers needs to know and what someone selling clothing needs to know (e.g., knowledge of the different products, customers, etc.) Specialty skill standards help fill this gap by identifying the knowledge, skills, and performance that are unique to each of these industries.

Specialty skill standards might cover the knowledge, skills, and performance unique to:

- A specific job or occupation. For example, the specific skills needed to work as a legal secretary versus the general skills needed to work as a secretary, which may be covered by core and concentration standards for the *Business and Administration Services* industry sector.

- A specific industry. For example, the specific skills needed for computer chip production versus the general skills needed for any manufacturing production work, which will be covered by core and concentration skill standards for the *Manufacturing, Installation, and Repair* industry sector.

- A specific company. For example, the skills and knowledge needed to carry out a company's unique approach to quality versus quality techniques used across the industry sector, which will be covered by the core and concentration skill standards.

Whereas the Voluntary Partnerships will develop concentration and core standards, the development of specialty skill standards will be left to the many organizations now doing this work (e.g., trade associations, education and training institu-

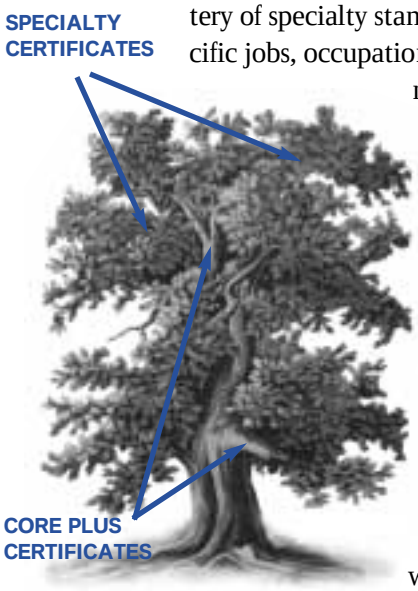
tions, unions, and companies). The NSSB is working with these groups to link existing specialty standards to the emerging national system.

A Word About Certification

In the NSSB voluntary skill standards system two major types of certifications will be issued:

1. *Core Plus Certificates:* Certification for mastery of core *plus* at least one concentration. The standards, assessments, and certifications for each NSSB industry sector will be developed by the Voluntary Partnerships and submitted to the NSSB for endorsement.

2. *Specialty Certificates:* Certification for mastery of specialty standards developed for specific jobs, occupations, industries, or companies within an industry sector. Certifications would continue to be developed by outside groups, but to be part of the NSSB national system, specialty standards, assessments, and certifications must be reviewed for endorsement by the Voluntary Partnerships. The Voluntary Partnerships will act on behalf of the NSSB and use NSSB guidelines to endorse the certifications that conform.



Core Plus Certificates and *Specialty Certificates* give individuals a powerful package of complementary qualifications. A *Core Plus Certificate* gives individuals a broad base of skills necessary to perform a variety of jobs in a variety of industries, while *Specialty Certificates* give individuals the specialized skills and knowledge needed for a particular type of job, occupation, industry, or company.

A Quick Review

This chapter contains a lot of details about the organization of skill standards. Let's look at an example from an individual's perspective that brings it all together.

About four years ago, Johnny Ramos earned a Core Plus Certificate in the Manufacturing, Installation, and Repair *industry sector. To get the certificate, he demonstrated mastery in the core standards as well as standards for two concentrations—*Production *and* Production Quality Assurance.

Johnny got a job with a company that makes small airplanes. While with the new company, he earned a Specialty Certificate *in aerospace safety and health regulations.*

A year ago, Johnny and his family moved from Seattle to New York. Johnny applied for a job with a large aircraft producer. He was concerned about how to demonstrate his qualifications to his new employer, but included information about his Core Plus *and* Specialty certificates *in his resume. His new employer, who recently reorganized the frontline workforce into teams with expanded responsibilities, was impressed with Johnny's experience, credentials, and the fact that Johnny had continued to gain new skills.*

In his new job, Johnny found that he was using many of the skills for which he was certified. One day, he noticed a problem in the cockpit production process. He used his knowledge of production quality assurance, one of several concentrations in which he is certified, to analyze the problem. Another day, he was asked to help train his team in health and safety regulations for aerospace. The fact that he has a Specialty Certificate *in aerospace health and safety issues was a big help.*

Several months ago, the company decided that Johnny's team needed to take on some additional responsibilities, including helping with logistics and inventory control. Johnny did not have training in this area, but still had an advantage. He had demonstrated mastery of the core standards for manufacturing as part of his earlier Core Plus *certification. The core standards for manufacturing include some of the skills and knowl-*

edge needed for logistics and inventory control, which gave Johnny a head start in learning the ins and outs of this new activity. In fact, instead of taking the full three-month training course, Johnny was able to bypass some of the coursework and completed the training in just one month.

A few weeks ago, Johnny learned that demand for the aircraft his company was manufacturing was way down and that the company may need to lay off a large percentage of the workforce. He thought about applying for other jobs in the aerospace industry, but quickly found out that almost everyone was laying off staff.

Johnny's friend, Ann, told Johnny that her company was experiencing a huge demand for its new economy car. Although Johnny had never worked in an automobile factory, his Core Plus Certificate *in the manufacturing industry sector was designed to prepare him for work in a wide range of related manufacturing industries, including automobile manufacturing.*

Unfortunately, Johnny was laid off from his job at the aerospace company. He quickly applied to the auto plant, listing his Core Plus Certificate *in manufacturing in his resume. The auto company was impressed by all of Johnny's qualifications and believed that Johnny's NSSB* Core Plus Certificate* *combined with a short training course focusing on some unique aspects of automobile manufacturing and the company's unique techniques would allow him to begin work soon.*

*Before using the *Core Plus* certification as one of several factors in making its decision, the automobile company conducted an internal validation to ensure the *Core Plus* standards, assessments, and certifications for the manufacturing industry sector were necessary for the job for which Johnny had applied.

In this case example, we begin to see how a voluntary national system of skill standards, assessment and certification will…

- Reduce costs for employee recruitment and hiring. Because Johnny has a *Core Plus Certificate* and several *Specialty Certificates*, the auto company can get a quick overview of his skills. This overview speeds up the hiring process and saves the company resources for conducting its own assessments of Johnny's skills. It also helps the employer quickly locate the right people for the right jobs.

- Build a more flexible workforce. Johnny's certification in core standards gives him a head start in learning about logistics and inventory control. In addition, his mastery of several concentration and specialty standards enables him to handle many different kinds of challenges that arise on the job.

- Promote long-term employment security. Johnny is able to recover fairly quickly from the sudden downturn in the aerospace industry because he has a broad range of skills that prepare him for work in many different manufacturing industries—and a means to demonstrate this to potential employers.

CHAPTER 3

A Common Format and Language for Skill Standards

We have identified an organizational framework for the development of a skill standards system. Now, let's look at what makes up a skill standard.

Skill standards—as defined by the NSSB—are made up of two parts:

1. The *work*-oriented component: This aspect of the skill standards describes what needs to be done on the job and how well. It's called the *work*-oriented component of the standards because it focuses on the requirements of work.

2. The *worker*-oriented component: This aspect of the skill standards describes the knowledge and skills an individual needs to possess in order to perform in this way. It's called the *worker*-oriented component because it focuses on the knowledge and skills a worker needs to perform competently.

Together, the *work*-oriented and *worker*-oriented components of the skill standards provide individuals with a comprehensive picture of the knowledge, skills, and performance required for success in today's workplace.

Let's look more closely at each of these components.

The *Work*-Oriented Component

Standards begin by describing what workers need to be able to do on the job to perform competently. Do individuals need to be able to identify customer needs? Do they need to set up machinery? Do they need to comply with state health regulations? And what does it look like when these activities are being performed well? The *work*-oriented component of the skill standards answers these types of questions.

Three elements make up the *work*-oriented component of a skill standard:

1. Critical work functions—The major responsibilities of work covered by a concentration.
   - Most concentrations can be characterized by fewer than 15 critical work functions.

A NOTE ABOUT THIS CHAPTER

This chapter focuses mainly on what concentration skill standards will look like. Core skill standards will be expressed in a similar format. The NSSB and the Voluntary Partnerships are working with specialty skill standards developers to link their standards with this common format and language.

- The critical work functions serve as the building blocks for the development of all other aspects of the standards.

2. Key activities—The major duties or tasks involved in carrying out a critical work function.
   - Most critical work functions can be described by three to six key activities.

3. Performance indicators—Information on how to determine when someone is performing each key activity competently.
   - Three to six performance indicators typically describe effective performance of key activities.
   - The performance indicators paint a more complete picture of what competent performance looks like, and they provide an important starting place for measuring performance.

Taken as a whole, critical work functions, along with the key activities and performance indicators, tell us what workers need to do on the job to perform competently.

Keep in mind that this example shows just one of about a half dozen critical work functions, identified for this concentration. In addition, critical work functions, key activities, and performance indicators are just one-half of what makes up a skill standard. The other half—known as the *worker*-oriented component—is described later in this chapter.

Draft Example of the Manufacturing *Work*-Oriented Component

Critical Work Function:
Produce product to meet customer needs

Critical work functions describe the major responsibilities that must be carried out in order to achieve the work covered by a concentration. This critical work function is one of about a half dozen critical work functions identified for the manufacturing "Production" concentration. Here are some of the key activities that have been drafted for this critical work function.

Key activities are the duties and tasks involved in carrying out a critical work function.

Key Activity: Establish and verify that resources, such as materials, tools and equipment, are available for the production process

Key Activity: Identify customer needs

Key Activity: Set up equipment for the production process

Key Activity: Inspect and test the product to make sure it meets specifications

Key Activity: Document product and process compliance with customer requirements

The following partial example is in draft form. It is shown here to illustrate what we mean by a critical work function, key activity, and performance indicator. It was developed for the Manufacturing, Installation, and Repair industry sector.

Here are the performance indicators which correlate to the key activities on the previous page. The performance indicators provide information on how to determine when someone is performing each key activity competently.

Raw materials are checked against work order.
Tools and equipment are checked against work order.
Inventory discrepancies are communicated to the proper parties.
Necessary resources are at workstation when required.
Workers with appropriate skills are scheduled according to production needs.

The needs of internal and external customers are recognized.
Customer contact about product aspects and printed specifications is maintained to ensure understanding of needs.
Customer needs are reviewed on a regular basis.
Customer specifications are up-to-date.
Customer needs are communicated effectively to others including shift-to-shift, co-workers, and managers.
Issues preventing customer needs from being met are addressed proactively.

Proper repairs and adjustments are made to production equipment prior to putting into service.
Set-up meets process specifications of internal and external customers.
First piece or production run meets specifications.
Set-up procedures are documented for repeatability and stored appropriately.
Set-up meets ergonomic and other relevant health, safety, and environmental standards.
Set-up meets equipment specifications and is checked against documentation.

The calibration of the testing equipment is verified.
Established sampling plan and inspection policies and procedures are followed.
Product and production processes that do not meet specifications are identified promptly.
Inspection documentation is completed accurately and forwarded to the correct parties.
Appropriate testing and inspection tools and procedures are selected and followed.
Adjustments needed to bring the production process back into specification are identified, communicated, and performed in a timely manner.

Documentation of compliance is legible and clear.
Documentation of compliance is written in the appropriate format and correctly stored.
Documentation of compliance is forwarded to the proper parties.
Documentation is complete and "sign off" is obtained.
Products are labeled appropriately for compliance or non-compliance.

The *Worker*-Oriented Component

Once each Voluntary Partnership has identified what someone needs to be able to do on the job to perform competently, the next step is to identify the knowledge and skills an individual needs to possess to perform in that way. This is called the *worker*-oriented component of the standards.

The NSSB Common Framework divides knowledge and skills into three categories:

1. Academic knowledge and skills—Knowledge and skills associated with the academic disciplines of reading, writing, mathematics, and science.

2. Employability knowledge and skills—Applied knowledge and skills used to perform effectively across a broad range of occupations, such as teamwork, decision making, and problem solving.

3. Occupational and technical knowledge and skills—The specific technical and occupational knowledge and skills needed for work, such as engine repair, knowledge of sales methods, or database programming.

Rather than each Voluntary Partnership starting from scratch to identify knowledge and skills classifications, the NSSB convened an expert panel to identify a common language for describing the academic and employability knowledge and skills that are used at work. The use of this common language for describing knowledge and skills will foster the portability of skill standards and certificates.

The NSSB did not develop a common language for the occupational and technical knowledge and skills because this category of knowledge and skills is largely specific to each industry sector. Instead, the NSSB has developed a common format and guidelines to help the Voluntary Partnerships describe occupational and technical knowledge and skills that are specific to their industry sectors.

A Common Language for Knowledge and Skills

Let's take a more in-depth look at the common language and format developed for the academic and employability knowledge and skills.

Academic Knowledge and Skills

The following is a list of the categories of academic knowledge and skills that are part of the NSSB Common Framework:

- Reading: Understand and use written information that may be presented in a variety of formats, such as text, tables, lists, figures, and diagrams; select reading strategies appropriate to the purpose, such as skimming for highlights, reading for detail, reading for meaning, and critical analysis.

- Writing: Express ideas and information in written form clearly, succinctly, accurately, and in an organized manner; use English language conventions of spelling, punctuation, grammar, and sentence and paragraph structure; and tailor written communication to the intended purpose and audience.

- Mathematics: Understand, interpret, and manipulate numeric or symbolic information; solve problems by selecting and applying appropriate quantitative methods such as arithmetic, quantitative reasoning, estimation, measurement, probability, statistics, algebra, geometry, and trigonometry.

- Science: Understand and apply the basic principles of the physical, chemical, biological, and earth sciences; understand and apply the scientific method, including formulating

MORE IN-DEPTH DEFINITIONS

These are only brief definitions of the academic and employability knowledge and skills. The NSSB has also developed skill scales for each of these categories, an example of which is described later in this chapter. These skill scales provide more in-depth definitions for each of the academic and employability knowledge and skills.

and stating hypotheses and evaluating them by experimentation or observation.

Employability Knowledge and Skills
The following is a list of the categories of employability knowledge and skills that are part of the NSSB Common Framework:

- Listening: Attend to, receive, and correctly interpret verbal communications and directions through cues such as the content and context of the message and the tone, gestures, and facial expressions of the speaker.

- Speaking: Express ideas and facts orally in a clear and understandable manner that sustains listener attention and interest; tailor oral communication to the intended purpose and audience.

- Using information and communications technology: Select, access, and use necessary information, data, and communications-related technologies, such as basic personal computer applications, telecommunications equipment, Internet, electronic calculators, voice mail, email, facsimile machines, and copying equipment to accomplish work activities.

- Gathering and analyzing information: Obtain facts, information, or data relevant to a particular problem, question, or issue through observation of events or situations, discussion with others, research, or retrieval from written or electronic sources; organize, integrate, analyze, and evaluate information.

- Analyzing and solving problems: Anticipate or identify problems and their causes; develop and analyze potential solutions or improvements using rational and logical processes or innovative and creative approaches when needed.

- Making decisions and judgments: Make decisions that consider relevant facts and information, potential risks and benefits, and short- and long-term consequences or alternatives.

- Organizing and planning: Organize and structure work for effective performance and goal attainment; set and balance priorities; anticipate obstacles; formulate plans consistent with available human, financial, and physical resources; modify plans or adjust priorities given changing goals or conditions.

- Using social skills: Interact with others in ways that are friendly, courteous, and tactful and that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.

- Adaptability: Change one's own behavior or work methods to adjust to other people or to changing situations or work demands; be receptive to new information, ideas, or strategies to achieve goals.

- Working in teams: Work cooperatively and collaboratively with others to achieve goals by sharing or integrating ideas, knowledge, skills, information, support, resources, responsibility, and recognition.

ADDING NEW CATEGORIES OF KNOWLEDGE AND SKILLS

The NSSB recognizes that as the Voluntary Partnerships develop standards, they may identify academic and employability knowledge and skills that were not included in the Common Framework. The NSSB encourages the Voluntary Partnerships to submit these findings for possible inclusion in future versions of the common language for academic and employability knowledge and skills.

- Leading others: Motivate, inspire, and influence others toward effective individual or team work performance, goal attainment, and personal learning and development by serving as a mentor, coach, and role model and by providing feedback and recognition or rewards.

- Building consensus: Build consensus among individuals or groups by facilitating agreements that involve sharing or exchanging resources or resolving differences in such a way as to promote mutual goals and interests; by persuading others to change their point of view or behavior without losing their future support; and by resolving conflicts, confrontations, and disagreements while maintaining productive working relationships.

- Self and career development: Identify own work and career interests, strengths, and limitations; pursue education, training, feedback, or other opportunities for learning and development; manage, direct, and monitor one's own learning and development.

Occupational and Technical Knowledge and Skills

Occupational and technical skills include such things as the use or operation of tools, machines, and equipment. Occupational and technical *knowledge* encompasses knowledge of methods or theories; particular products or services; and languages other than English. Occupational and technical knowledge may also include other elements, such as knowledge of computer software programs and applications, general business and industry knowledge, and an understanding of workplace systems, culture, and policies.

Unlike the academic and employability knowledge and skills that apply to work carried out across different industry sectors, the occupational and technical knowledge and skills will typically only apply to one industry sector. That's why it will be up to the Voluntary Partnerships to identify the occupational and technical knowledge and skills that apply to their industry sectors.

The following are examples of different types of occupational and technical knowledge and skills that may be identified:

- Welding
- Use of bookkeeping software
- Knowledge of quality assurance techniques, safety regulations, sales and marketing techniques.

Keep in mind that occupational and technical knowledge and skills identified for core and concentration skill standards should apply across all the industries that make up an industry sector. For example, knowledge of safety regulations for the manufacturing industry sector should only cover knowledge of safety regulations that are relevant to all industries within the sector (e.g., safety rules that would apply to food manufacturing, automobile manufacturing, and the other manufacturing industries that make up the sector). Knowledge of safety regulations that are unique to food manufacturing, for example, might be covered by the occupational and technical knowledge and skills developed for the specialty skill standards.

Linking the Knowledge and Skills to Critical Work Functions

Using these descriptions of the academic, employability, and occupational and technical knowledge and skills, the Voluntary Partnerships will identify the knowledge and skills needed to perform each critical work function (along with its key activities and performance indicators) in a concentration.

That means for each critical function, the Voluntary Partnerships will need to answer the following questions:

- Which of the academic knowledge and skills are needed to perform this critical work function?
- Which of the employability knowledge and skills are needed to perform this critical work function?
- Which of the occupational and technical knowledge and skills are needed to perform this critical work function?

By answering these questions, the skill standards will provide information on the specific knowledge and skills needed to perform each critical work function, along with its key activities and performance indicators. This linkage of knowledge and skills at the critical work function level is meant to help users of the skill standards, such as educators, trainers, and those developing assessments based on the standards.

Imagine that you are a trainer developing an exercise aimed at helping individuals perform a critical work function, along with its key activities. You would be able to find out exactly which knowledge and skills an individual needs in order to perform a particular critical work function. For example, mathematics, writing, and teamwork might be required to perform one critical work function, whereas reading, listening and welding might be required for another. Knowledge of the link between critical work functions, key activities, and skills required is very helpful. It will enable you to create far more effective training.

But as any educator or trainer will tell you, this kind of information just skims the surface. It's helpful knowing that workers need to know mathematics to perform a particular critical work function, but do they need to know averages or simple addition? It's useful knowing they need to write, but do they need to be able to write a highly technical report or a quick memo?

The *worker*-oriented component of the standards will address these questions by providing information on the level of complexity required for each knowledge or skill, along with examples of work that illustrate the different levels.

Rating Complexity Levels

Once the knowledge and skills have been identified for each critical work function, the Voluntary Partnerships will determine the complexity level required for the knowledge and skill identified.

For example, let's say that a standards development panel has determined that reading is required to achieve a particular critical work function. That panel would then determine what level of reading was required on a scale of one to five.

To help the Voluntary Partnerships do that, the NSSB has developed a common set of complexity rating scales for each of the 17 academic and

SEEING THE SKILL SCALES

The full set of academic and employability skill scales are available in the *Skill Scales Companion Guide.* If you have not already received this publication along with this guidebook, please contact the NSSB to order one.

READING

Understand and use written information that may be presented in a variety of formats, such as text, tables, lists, figures, and diagrams; select reading strategies appropriate to the purpose, such as skimming for highlights, reading for detail, reading for meaning, and critical analysis.

COMPLEXITY DIMENSION	COMPLEXITY LEVEL SCALE		
	HIGH	MODERATE	LOW
TYPE OF TEXT *How complex is the type of material to be read when performing this critical work function?*	• Highly complex or technical materials are read (e.g., technical manuals, reports, proposals, procedures, written commentaries, formal email, substantially visual material such as flowcharts); material contains high density of information and a substantial proportion of highly technical terms or unfamiliar vocabulary.	• Moderately complex or technical materials are read (e.g., letters, memos, email, multistep directions and instructions, reference materials, books on particular topics, visuals that support meaning such as charts, graphs, figures, diagrams, and maps).	• Simple, familiar, or nontechnical materials are read (e.g., labels, telephone messages, routine forms, lists, simple notes, signs, informal email).
COMPLEXITY OF READING SKILLS *How complex are the reading skills used to perform this critical work function?*	• Reading skills used are highly complex, including evaluation of the effectiveness of the text (i.e., its relevance, accuracy, efficiency, and appropriateness) and analysis of arguments and positions advanced to determine validity, sufficiency, and evidence of bias.	• Reading skills used are moderately complex, including interpretation of information from multiple sources; integration of information with prior knowledge and experiences; and identification of complexities and discrepancies in the presented information.	• Reading skills used are minimally complex, including comprehension of simple written information to solve basic problems; literal understanding of text; and application of basic features of reading such as phonics, syllabication, and word parts.
COMPLEXITY OF READING PURPOSE *How complex is the reading purpose in performing this critical work function?*	• Reading purpose is highly complex; text is analyzed and evaluated, and information is applied to a new situation or task.	• Reading purpose is moderately complex; text is read to obtain information that is then communicated to others or used to perform a multistep task.	• Reading purpose is minimally complex; text is read to obtain general information or follow simple instructions to perform a task.

This is an example of a skill scale, which will be used to rate the complexity level required for a given knowledge or skill.

employability knowledge and skills. Let's look at the skill scale for reading, opposite.

Skill Standards: A Total Package

National voluntary skill standards offer a rare and powerful combination of information. They describe what someone needs to do on the job (the *work*-oriented component) and they describe the knowledge and skills he or she needs to perform in this way (the *worker*-oriented component).

What's the best way to use all this information? It may be tempting to use just one aspect of the skill standards in your efforts to improve workforce performance. For example, trainers and educators might gravitate to the knowledge and skills for developing curricula. Employers, in contrast, might focus on the critical work functions, key activities, and performance indicators to improve employee skills or to seek new ideas for how to organize their frontline workforce.

That's not a bad thing. Skill standards include both kinds of information to enable different groups to use the standards for different purposes.

But the real power of skill standards—and the way to use them to truly increase workforce skills and productivity—is to take full advantage of both the *work*-oriented and *worker*-oriented components.

Let's look at a few examples:

- One of the challenges facing educators is developing programs that prepare students for the real challenges of work. By using both components of the skill standards, educators and trainers can achieve this goal.

  Imagine you are a community college educator developing a *Communications in Business* course. You might start with the academic and employability knowledge and skills to find out more information about what kinds of skills are required (e.g., writing and listening). Instead of teaching listening and writing skills that have little to do with the workplace, however, you could look up how the knowledge and skills link to different critical work functions in different industry sectors. You might find that listening skills are used to evaluate customer needs. You could then develop an exercise that simulates this real workplace activity to help improve your students' listening skills.

- With work changing so rapidly, employers often need a way to communicate fast-changing business goals and objectives to employees in a way that will result in better performance. Although many companies can clearly articulate their business goals and strategies, they rarely have the tools they need to explain exactly what workers need to be able to do to achieve these goals.

  Skill standards provide employers with a powerful tool for communicating what they expect workers to be able to do on the job (i.e., the *work*-oriented component—the critical functions, key activities, and performance indicators) and to link those expectations with the knowledge and skills an individual needs to meet those expectations (i.e., the *worker*-oriented component—academic, employability, and occupational and technical knowledge and skills).

- Assessing whether someone is qualified for a given job is extremely challenging. An individual might know how to write well, but can he or she write a good business memo? Someone might know exactly how a computer software program works, but can he or she use it to solve a real workplace problem? The standards give assessment developers information on the knowledge and skills individuals need to possess as well as the context in which they need to use their know-ledge and skills. This will lead to the development of assessments that truly measure whether someone is prepared for real workplace demands.


CAUTION
EAR PROTECTION
REQUIRED
IN THIS AREA

CHAPTER 4

General Guidance for Developing Skill Standards

In this chapter, we'll look at several important goals to keep in mind when developing skill standards.

Creating Tools for Progress

One of the key goals for the NSSB in developing skill standards is to help build a frontline workforce capable of taking on the new roles and responsibilities needed to compete in today's economy. To achieve this goal, skill standards must reflect the needs of high-performance work organizations within an industry sector.

High-performance, as defined by the NSSB, does not necessarily mean high-tech or large organizations. Instead, it refers to organizations that are:

- Quality-driven and customer-oriented. These organizations focus on error-free output, high productivity, and meeting customers' needs.
- Highly flexible and agile. These organizations are readily able to customize products and services; continuously improve products, services, and processes; and adapt quickly to changing customer requirements.
- Supportive of decentralized decision-making and employee participation. These organizations give considerable scope to skilled workers to make the decisions, to respond to customers, to deal with the unexpected, and to contribute to improving quality. Such workers typically have responsibility for a broader range of activities than workers in more traditional organizations and they are often required to work in groups or teams in which members are expected to be able to do one another's work and occasionally take responsibility for leading the group.
- Making effective use of resources, including leading-edge technologies and a well-educated, well-trained workforce, to achieve their business goals. These organizations tend to provide a large amount of formal and informal education and training to employees to enable them to add as much value as possible to the organization's products and services.
- Providing a positive incentive structure. These organizations reward employees for their contributions to the organization's goals.

The NSSB believes more and more companies are moving in this direction as they respond to growing competition, new technologies, and changing customer demands. To ensure the needs of the high-performance organization are reflected in the standards, the NSSB encourages Voluntary

Partnerships to recruit as many members of their standards development panels as possible from high-performance companies. By reflecting the needs of the "high-performance" organization, skill standards can become a tool for progress rather than an anchor for outmoded performance.

It should be noted that it is the legal responsibility of all employers—even those employers who might categorize their organizations as high-performance or who believe that these characteristics reflect their organization's approach to work—to conduct an internal validation study before using NSSB endorsed standards and related assessments and certifications to make hiring and promotion decisions.

Making Standards Useful for Many Different Purposes

Skill standards will be used by many different people to achieve many different goals—from the community college instructor trying to develop curricula to a student learning about jobs in an industry. To ensure this diverse audience understands the standards and uses them properly, it is essential to communicate standards clearly using the NSSB common format and language.

The Need for Credibility

Standards must portray the true requirements of today's workplace. This goal may seem obvious, but it's an easy one to forget in the rush to develop and begin using skill standards.

Standards may be used as a tool for making critical decisions about education, training, hiring, promotions, and the way that work is organized. This will have far-reaching implications for individuals, companies, and the economy. It is essential that the best methods be used to develop and communicate standards; that the right people be involved; and that the accuracy of the work be ensured every step of the way.

By reflecting the needs of the "high-performance" organization, skill standards can become a tool for progress rather than an anchor for outmoded performance.

Developing a Sound Research Plan

A few experts in a room cannot develop skill standards. No matter how qualified these individuals might be, their own unique experiences and background would limit their knowledge about the requirements of work across huge segments of the economy. In addition, the standards developed from such a process would not be defensible for use in assessment and certification.

ENDORSEMENT – A SNAP SHOT

To ensure quality, the NSSB has established a rigorous endorsement process, which calls for the creation of skill standards that are:

- **Written in the common language and format described by the NSSB Common Framework**
- **Consistent with civil rights laws**
- **Nationally and internationally benchmarked**
- **Forward looking**
- **Continuously improved and updated**

For more detailed information on NSSB endorsement criteria, contact the NSSB.

KEEPING CURRENT

To ensure that core and concentration standards truly reflect the requirements of the workplace, they will need to be updated at least every five years. Specialty standards, which focus on faster changing skills, will need to be updated at least every three years.

Skill standards must be developed by using rigorous research methods that systematically analyze workplace performance. That's the only way to produce reliable results that are consistent with civil rights laws and NSSB criteria, which seek to ensure equal access to the new world of work.

What determines the success of the research method?

- The quality of the participants: Frontline workers and supervisors in high-performance organizations are some of the best sources of information about the requirements of work. Because they are the ones performing and supervising the work, these individuals are in an ideal position to describe how work is changing and what is needed for success. In addition, Voluntary Partnerships may find it helpful to consult:
  - Managers
  - Trainers
  - Educators
  - Recruiters
  - Human resources personnel
  - Professional work and job analysts
- The number of participants: To describe work across broad segments of the economy requires the input of many people. The number of participants required will reflect the geographic and demographic diversity of the standards that are being developed. This diversity, which is necessary for compliance with civil rights laws, adds to the quality of the analysis and the applicability of the results.
- The industry-wide survey: Once the skill standards have been developed, it is important to find out if the standards are relevant across an industry sector. Not only is the survey a way to double-check the quality of the work, it is an essential step for using the standards for such high-stakes applications as assessment and certification. The survey, which will likely involve thousands of workers, needs to adhere to rigorous technical requirements regarding the number and demographic diversity of those surveyed.

In the next decade, the demand for skilled workers is expected to grow in every industry…

Moving Forward

We have reached an exciting moment in the history of this project. At the time of this publication, several Voluntary Partnerships have begun developing skill standards based on the Common Framework. Others are preparing to start.

Soon, the NSSB will be releasing a series of publications describing a common approach to assessment and certification based on skill standards. Moment by moment, we are watching as the system unfolds.

As we begin to put theory into practice, we can refine and improve the framework, updating this publication as the system unfolds.

GETTING INVOLVED

For more information about standards being developed for a specific industry sector or to get involved in the standards development process, contact the Voluntary Partnerships listed in Appendix A or contact the NSSB directly. In addition to this and other publications, the NSSB offers direct technical assistance and advice through its team of standards development experts. For more information, contact the NSSB at 202-254-8628 (phone); information@nssb.org (email); or www.nssb.org (web site).

Moving forward, we must remember that the issues that fueled the creation of this project have not gone away. In the next decade, the demand for skilled workers is expected to grow in every industry…

- The Big Three automakers will need over 250,000 new workers.
- The information technology industry will need over 1,000,000 new workers.
- The health services industry will need over 750,000 new workers.

Global competition is expected to intensify. New technologies will continue to change the way each one of us does our job. The demand for quality and cost savings will be as critical as ever.

The NSSB and its partners are working hard to get out in front of these changes through the development of skill standards. The Common Framework is critical to the success of this effort. If we want to provide individuals with portable skills and certifications they can use to get jobs in different industries across the country, industries and states need to work together. If we want to create clear paths for learning and career development, we need to avoid overlap among different types of skill standards. All this requires coordination, which the Common Framework is designed to foster.

The Common Framework also will help ensure the quality of the skill standards we develop. The result of years of research, the Common Framework draws on lessons from previous skill standards development work in the United States and abroad and on insights of the country's most respected workforce experts. Most importantly, it reflects a clear consensus, among the many stakeholders involved in this effort, about what skill standards need to achieve.

With the Common Framework to guide us, and the hard work of the Voluntary Partnerships, we can create a new approach to workforce issues. Yes, it takes time. Yes, it takes hard work. But weigh these challenges against the benefits and there's no question that it's worth the effort.

APPENDIX A

More About the National Skill Standards Board

The following is an excerpt from the act of Congress that established the NSSB:

Congress established the National Skill Standards Board in 1994. According to the 1994 National Skill Standards Act, the purpose of the board is:

> To serve as a catalyst in stimulating the development and adoption of a voluntary national system of skill standards and of assessment and certification of attainment of skill standards—
>
> (1) that will serve as a cornerstone of the national strategy to enhance workforce skills;
> (2) that will result in increased productivity, economic growth, and American economic competitiveness; and
> (3) that can be used, consistent with civil rights laws—
>
> (A) by the Nation, to ensure the development of a high skills, high quality, high performance workforce, including the most skilled frontline workforce in the world;
> (B) by industries, as a vehicle for informing training providers and prospective employees of skills necessary for employment;
> (C) by employers, to assist in evaluating the skill levels of prospective employees and to assist in the training of current employees;
> (D) by labor organizations, to enhance the employment security of workers by providing portable credentials and skills;
> (E) by workers, to—
>
> (i) obtain certifications of their skills to protect against dislocation;
> (ii) pursue career advancement; and
> (iii) enhance their ability to reenter the workforce;
>
> (F) by students and entry level workers; to determine the skill levels and competencies needed to be obtained in order to compete effectively for high wage jobs;
> (G) by training providers and educators, to determine appropriate training services to offer;
> (H) by government, to evaluate whether publicly funded training assists participates to meet skill standards where such standards exist and thereby protect the integrity of public expenditures;
> (I) to facilitate the transition to high performance work organizations;
> (J) to increase opportunities for minorities and women, including removing barriers to the entry of women into nontraditional employment; and
> (K) to facilitate linkages between other components of the national strategy to enhance workforce skills, including school-to-work transition, secondary and postsecondary vocational-technical education, and job training programs…

APPENDIX B

More About the Voluntary Partnerships

The Voluntary Partnerships are coalitions of employers, employees, educators, and community and civil rights organizations that will be developing core and concentration skill standards for different industry sectors. Already, Voluntary Partnerships have begun developing skill standards for several of the following 15 industry sectors:

- Agriculture, Forestry, and Fishing
- Business and Administrative Services
- Construction
- Education and Training
- Finance and Insurance
- Health and Human Services
- Manufacturing, Installation, and Repair
- Mining
- Public Administration, Legal, and Protective Services
- Restaurants, Lodging, Hospitality and Tourism, and Amusement and Recreation
- Retail Trade, Wholesale Trade, Real Estate, and Personal Services
- Scientific and Technical Services
- Telecommunications, Computers, Arts and Entertainment, and Information
- Transportation
- Utilities, Environmental, and Waste Management

The following charts provide information on the Voluntary Partnerships that have been established at the time of publication. For more information about work taking place in other industry sectors, contact the NSSB.

Manufacturing Skill Standards Council (MSSC) Voluntary Partnership, representing the Manufacturing, Installation, and Repair Industry Sector

KEY NATIONAL ORGANIZATIONS

Employer representatives:*

National Association of Manufacturers, National Alliance of Business, National Coalition for Advanced Manufacturing, National Institute for Metalworking Skills, General Motors, General Electric, Boeing, IBM, Chrysler, Merck, Johnson & Johnson, Rockwell, Compaq, Digital, Lockheed Martin, Motorola, Dow Chemical, Exxon, Eastman Kodak, Qualcomm Inc., R.J. Reynolds Co., Intel, Siemens, Corning, Texas Instruments, Procter & Gamble, United Technologies Corp., Whirlpool, Institute of Electrical and Electronics Engineers

Employee representatives:*

Industrial Union Department/AFL-CIO, United Auto Workers, United Steel Workers, UFCW Chemical Workers Division, PACE International Union

Public interest/education representatives:*

American Association of Community Colleges, American Vocational Association, American Society for Training and Development, National Urban League, Vocational-Technical Education Consortium of States, Georgia Department of Technical and Adult Education, National Center on Adult Literacy

COALITION REPRESENTS

Percent of GDP represented:** 17%

Percent of U.S. workforce represented: 14%

CONTACT INFORMATION

MSSC Project Co-Director
National Coalition for Advanced Manufacturing-(NACFAM)
1201 New York Avenue, NW
Suite 725
Washington, DC 20005-3917
Phone: (202) 216-2746
Fax: (202) 289-7642

or

MSSC Project Co-Director
Working for America
AFL-CIO
1101 14th Street, NW
Suite 320
Washington, DC 20005
Phone: (202) 331-0081
Fax: (202) 331-5869

* As of March 2000
** GDP, Gross Domestic Product, as of March 2000

Sales & Service Voluntary Partnership (S&SVP Inc.) representing the Retail Trade, Wholesale Trade, Real Estate, and Personal Services Industry Sector

KEY NATIONAL ORGANIZATIONS

Employer representatives:*

National Retail Federation, Sears Roebuck and Co., Kmart Corporation, Federated Department Stores, J.C. Penney Company, Inc., American Express Company, Nordstrom, General Motors, National Federation of Independent Businesses, Long & Foster Realtors, Circuit City Stores, Office Depot, McDonald's, Winn-Dixie Stores, Inc., Aramark, Wal-Mart, Target, Home Depot, Blockbuster, Frito-Lay, Eddie Bauer, Hair Cuttery, Food Marketing International, National Association of Realtors, Proctor & Gamble, Jewelers of America, Crate and Barrel, Claires Accessories, NAPA, National Grocers Association

Employee representatives:*

United Food and Commercial Workers, AFL-CIO

Public interest/education representatives:*

AARP, Academy for Educational Development, Ohio Department of Education, Goodwill Industries, National Urban League, American Association of Community Colleges, National Institute for Literacy, Distributive Education Clubs of America, Youth Opportunities in Retailing

COALITION REPRESENTS

Percent of GDP represented:** 27%

Percent of U.S. workforce represented: 18.4%

CONTACT INFORMATION

S&SVP, Inc. Project Coordinator
National Retail Institute, Liberty Place
325 7th Street, NW
Suite 1100
Washington, DC 20004
Phone: (202) 626-8100
Fax: (202) 737-2849

* As of March 2000

** GDP, Gross Domestic Product, as of March 2000

Education and Training (E&T) Voluntary Partnership, representing the Education and Training Industry Sector

KEY NATIONAL ORGANIZATIONS

Employer representatives:*

National School Boards Association, American Association of School Administrators, American Association of Community Colleges, American Society for Training and Development, National Child Care Association, Forum Corporation, Deloitte & Touche Consulting Group, General Motors, Marriott Corporation, National Association of Private Industry Councils, State Directors of Vocational Education, National Alliance of Business, Career Colleges Association

Employee representatives:*

American Federation of Teachers, AFSCME, American Association of Classified School Employees, Colorado Education Association, National Center for the Early Childhood Work Force, American Association of University Professionals, National Education Association, Public School Employees of Washington State, United Guilford Federation of Teachers (NC)

Public interest/education representatives:*

National Urban League, National Association for Bilingual Education, American Association of Colleges for Teacher Education, National Resource Center for Paraprofessionals on Education and Related Services, National Board for Professional Teaching Standards, Wider Opportunities for Women, National Urban Coalition, Jobs for the Future, Council of Chief State School Officers

COALITION REPRESENTS

Percent of GDP represented:** 1%

Percent of U.S. workforce represented: 8.7%

CONTACT INFORMATION

E&T Voluntary Partnership Project Coordinator
American Federation of Teachers
555 New Jersey Avenue, NW
Washington, DC 20001
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Fax: (202) 879-4597

* As of March 2000

** GDP, Gross Domestic Product, as of March 2000

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