A System of National Skill Standards and Certificates for the United States: Early Stages of Implementation

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Abstract

In 1990, the Commission on the Skills of the American Workforce released its report, American's Choice: high skills or low wages! The report recommended the creation of a national Board whose job The National Skill would be to oversee the development of national skill standards and qualifications for entry-level through front-line supervisory work was across occupations and industries in the American economy. The National Skill Standards Board was established in 1994 and has begun an effort to set standards, develop assessments and certify assessments and individuals within fifteen broad economic sectors.

This paper reviews the recent history of the development of skill standards and credentials in the United States, describes the key characteristics of the skill standards system under development, discusses the rationale for this system design based on lessons learned in countries with whom the United States competes and finally, discusses the challenges that lie ahead for the National Skill Standards Board, its development partners and other key players involved in improving the skills of the American workforce.

How the National Skill Standards Board Came to Be

In 1990, the National Center on Education and the Economy, a not-for-profit, non-governmental policy development organization, created the Commission on the Skills of the American Workforce. Made up of leaders from the national business, labour, education, training and government communities, the Commission set out to develop a set of policy recommendations which, when implemented, would improve business performance and the standard of living for all Americans by increasing the skills of the workforce and changing the way work is organized.

The Commission began its task by conducting a major international study on key policies and practices of nations basing their competitiveness strategies on upgrading the skills of their people and increasing the productivity of their workplaces, The Commission visited countries in Europe and Asia including Ireland, Denmark, Germany, Sweden, Singapore and Japan, as well as the United States, looking at company practices in the key sectors of each nation's economy, as well as institutional practices in schools and training organizations at all levels. The Commission also took a hard look at national education, employment and training policies in these countries. The Commissioner saw in their visits a fundamental shift away from mass production modes of work organization and movement toward high performance forms of work organization in those countries which chose to compete on quality, not price alone. But when they looked at what was happening at home, this shift seemed slow in coming.

The Changing Nature of Work

By now the argument is familiar, but it is important to restate the problems that the United States faced. America grew rich using a mass production system that it invented, perfected and adopted more completely than any other country in the world. Under that system, the corporation was shaped like a pyramid. All the wisdom, insight and entrepreneurial daring was presumed to be concentrated in a very few professionals and managers at the top. The vastly larger numbers of people at the bottom of the pyramid were valued for their muscles, not their minds. They could do what they had to do with no more than an eighth grade level of literacy and a day or so of training.

The system worked. America's front-line workers became the largest middle class the world had ever seen. But the Commission saw disturbing signs of change. Most working Americans were on a downward escalator, earning less in real terms than they had twenty years earlier. The fall for workers in the bottom half of the distribution was relentless and much steeper than for the average worker. While average wages were falling, average hours worked every week were creeping up. And workers' personnel debt was steadily rising. Working families composed of husbands who were employed and wives who stayed at home were forced to send the -wives into the full time paid work force. Couples that had two full time wage earners were forced to worked additional jobs part time just to stay even. And they still had to borrow more than ever to pay their bills, even as their standard living was falling. All these trends have continued into the 1990s.
The United States economy during the 90s has been the envy of the world, but it is not well known that the fruits of that economy are enjoyed by a minority of Americans, mostly those who could afford to participate in the booming equity markets. Even by 1989, when the Commission's work began, it was possible to see the beginnings of a trend toward income inequality that has grown far sharper since. More than ever, that income inequality has been correlated with inequality of skills and knowledge. To a degree unprecedented in the nation's history, what you make is a function of what you know and the skills you have mastered. Though statistics show that aggregate skills in the society as a whole are increasing fast, demand for those skills is rising even faster, raising wage levels in high skill occupations. And, though the proportion of people with low skills in the economy is declining, the demand for people with low skills is falling even faster, thereby depressing wages for low skill workers. Meanwhile, the demand for middle level managers is also evaporating, in part because the information handling function they used to serve is now performed by machines that make far more information available to many more people in the organization far faster than before.

Just as many workers faced adverse wage trends, they endured the increasingly widespread threat of permanent job loss. Technological change, corporate restructuring and downsizing and intensified global competition reshaped the American economy. Between 1979 and 1992 the United States lost approximately three million jobs in manufacturing.

In the early 1980s displacement was primarily a phenomenon affecting blue-collar, manufacturing workers. But in recent years the pace of white-collar job loss has quickened, rising from 32.9 percent of all jobs lost between 1979 and 1983 to 46.4 percent between 1987 and 1991.

These grim facts were not the result of another downward swing of the business cycle, but rather of fundamental changes in the structure of the world economy. The Commission learned that other countries had access to the same technologies and the same sources of capital that the United States did and they also had front-line workers with the same skill levels as in the United States who were willing to work for much lower wages. The whole world was now competing in the same markets.

Why Skills Matter

But U.S. workers did not have to lower their wages to the levels of their low cost competitors, nor did they have to fall prey to advancing technology. Some American front-line workers were doing well. Wages were going up for workers who were skilled, adaptable and able to learn quickly. Workers with these qualities were finding that technology was an invaluable asset, the means by which they could add more value to the products they made and the services they rendered.

A growing body of evidence suggested that education and training, though not a cure-all, can give workers a fighting chance at economic stability. One study showed that workers with some college education earn five to ten percent more per additional year of post-secondary education than high school graduates. Other studies showed the strong impact of employer-provided training on workers' earnings, with the rate of return to employees who received employer-based training as high or higher than gains that result from similar amounts of post-secondary education.

The benefits of education and training accrue not only to individual workers, but also to the businesses that employ them. The National Center on the Educational Quality of the Workplace reported that a ten percent increase in the average level of education of workers in a firm led to an 8.6 percent increase in productivity. By comparison, a ten percent increase in capital stock led to a much smaller 3.4 percent increase in productivity. These results showed that investments in workforce training could generate powerful payoffs for American employers.

The Commission recommended, therefore, that American employers could compete and do very well by staking their future on an asset that could not easily be moved to another country the skills of their entire workforce.

A Vision of a New System

As a result of its study and taking into account the particular structure of the American economy and its political environment, the Commission made five core recommendations in its final report, America's Choice: high skills or low wages! The report recommended that the United States create:
A national qualifications system, with a foundation-level qualification for basic education and a set of technical/professional qualifications for advanced skills training;

A school-to-work transition system to help move young people from basic education to training to rewarding careers;

New alternative learning environments to recover virtually all school dropouts and take responsibility for helping them meet the new basic education standards;

A labor market system that serves everyone, offers opportunities for upgrading skills, and provides the information workers need to find good jobs and employers need to find good workers; and

Policies and programs to promote the spread of high performance work organizations in the workplace.

The report and its recommendations captured the attention of policy makers across the United States at the national, state and local levels. In 1991, the National Center established its Workforce Skills Program to assist in implementing the America’s Choice recommendations.

Its first task was to form a national legislative coalition which worked with the United States Congress to translate the policy recommendations developed by the Commission into omnibus federal legislation. The result was the High Skills, Competitive Workforce Act of 1991. The Congress conducted hearings on the bill over the next few years and when Bill Clinton was elected President, his administration used the key ideas from the Act to move legislation through the United States Congress in 1994. One idea in particular was the creation of a National Skill Standards Board whose role would be to stimulate the development and adoption of a voluntary, national system of skill standards and certificates.

The Job of the National Skill Standards Board

The NSSB itself will not set skill standards, but will establish the guidelines used to endorse standards created by ‘Voluntary Partnerships’. These partnerships will be led by industry in partnership with labor unions, educators, human resource development professionals and community representatives. It is the job of the Voluntary Partnership to set standards which meet the needs of employers using high performance forms of work organization standards that are high and competitive.

The reason that the Board is focused on high performance work organizations has to do with what the National Center on Education and the Economy and the Board itself learned from their examinations of the growth of qualifications systems in other countries. What often happens is that Government decides to create a national qualifications system to make the nation’s economy more competitive, in part by moving the nation toward higher performance forms of work organization. A national board is assembled to oversee the process. The board gets worried that employers might not use the qualifications the board creates. The obvious solution is to ask industry groups to create the standards. Success is defined in terms of the degree of coverage of the economy as a whole and of the industry groups within it, as well as the speed with which the country is covered by qualifications. The industry groups ask representative teams from within the industries of which their group is composed to define the standards. Those teams describe the work as it is typically performed, or more often, as it has been performed over time. Leading edge firms, those with the most advanced forms of work organization, drop out of the process, finding that adoption of the new qualifications would make them uncompetitive.

In this way the original intentions of government are completely subverted, and past, outdated forms of work organization are enshrined in concrete, making the economy as a whole less competitive, rather than more competitive. Over time, government sees what has happened and invokes a process to correct it. The process is very difficult and takes a long time to implement.

The antidote to this dynamic is to be clear about the goal, which is not to create the greatest possible number of qualifications in the shortest possible time, but rather to fashion a skill standards system that will promote competitiveness by moving the whole country toward higher skills and more competitive forms of work organization.

By ‘high performance work organization’ we mean a form of work organization in which front-line workers take on many of the responsibilities that in the past have been the sole responsibility of the supervisor or manager. Organizations do this in order to place decision making about products and services as close as possible to the customer or client, improve quality and maximize flexibility. Organization’s pyramid structures arc flattened and organized by key functional areas and in teams.
In this system, front-line workers are expected to contribute to the improvement of the product or service and the processes by which it is produced, to add value at every step of the process, to work in teams in which each member is expected to be able to take leadership when necessary and to have the skill needed to do the others’ job, to function at very high levels of quality and to have the skill and judgement needed to operate with a high degree of initiative and autonomy, taking major responsibility for the product as a member of the team that is producing it.

It is important here to point out that the NSSB believes that 'high performance work organization' is not a synonym for companies that are 'high-end' or 'large.' Any company whether for-profit or not-for-profit, of any size, production or service organization can be high performance. The Board is looking for standards that define good practices in industry-standards which, if adopted, will make that industry more competitive and able to offer higher wages.

The National Skill Standards Act also requires that the skill standards developed by the Voluntary Partnerships be set in a way that will increase access to good jobs by removing barriers to opportunity for women and minorities and others, and be consistent with civil rights laws. Those laws require that in determining who is hired and promoted, and making other selection decisions, employers must avoid using selection criteria that have a disparate impact on protected classes of employees (i.e., based on race, national origin, sex, religion, age or disability) unless the criteria are valid measures of the person’s capacity to do the work that will actually be required of employees. These two issues framed much of the Board’s approach to the criteria they will use to endorse standards, assessments and certificates.

But before describing the Board’s work to date, we need to describe the current state of qualifications in the United States.

The most basic point is that there is no qualifications system in the United States. The individual states are now in the process of establishing, state by state, their own academic standards for education in the primary and secondary schools, sometimes just in English and mathematics, in other cases for a broader range of subjects. Typically, these standards have been established only for three to five grade levels, from the whole range of Kindergarten through grade 12. These standards are not qualifications, in the sense in which that term is used in much of the rest of the world. That is, they are not accompanied by examinations, a particular score on which qualifies the examinee to go on to a particular form of postsecondary education or to enter a particular occupation or to train for a particular occupation.

There are, however, more than 2,000 occupations for which one can obtain, by examination, certificates entitling the holder to practice a particular occupation or which are recognized in varying degrees by particular industries, whether or not they are legally required in order to practice. But there is no system whatsoever with respect to these certificates. Each industry or occupational group or state certifying authority has gone about developing its standards as its sees fit. There is no common language or format for the expression of these standards. There is no common approach to the progression from one level to the next. There is rarely any reciprocity among the standards, even in those cases in which the content overlaps considerably, so individuals are forced to start all over again if they wish to move among jobs requiring certificates. There is no common portal for accessing standards, so training organizations and individuals engaged in getting trained have no easy way to find out whether there are relevant occupational standards or what they are. And, for the vast majority of jobs in the economy, there are no accepted industry standards or qualifications at all.

What the United States lacks are cross-sector, industry-developed and recognized credentials for front-line through first line supervisory workers. Stimulating the production of these types of qualifications in the context of a coherent qualifications system is the mission of the NSSB.

The Skill Standards System Framework

The second lesson the Board learned from international benchmarking was that the natural pressure in national qualifications systems was toward the proliferation of qualifications. The result was to limit the flexibility of individuals to move among occupations and of employers to move employees to related jobs that required a different set of skills. In an age in which the half life of particular job descriptions is very short and success often depends on being able to move among different jobs easily, a national qualifications system built on narrow job descriptions could easily be a noose around the neck of the national economy, rather than an asset. But, at the same time, the new economy also rewards ever increasing specialization and the acquisition of ever more technical knowledge. Building a successful qualifications system seemed to require building a conceptual framework that could accommodate these seemingly irreconcilable objectives.
The Board's Committee on Standards, Assessment and Certification Policy was given the job of coming up with that framework. Here we describe what they came up with.

It can be thought of as a tree, with a trunk, main branches, and leaves. Think of the trunk as the skills and knowledge required in common by the jobs in an entire sector of the economy, incorporating many industries. Then imagine that that sector is broken down into as many as six subsectors, and the additional skills and knowledge that are required for the jobs in that subsector are defined. The sector might be manufacturing. A subsector might be process manufacturing. Thus the skills and knowledge needed to be qualified for a job in process manufacturing would be the sum of the skills and knowledge defined as needed for manufacturing as a whole, combined with the skills and knowledge needed specifically for process manufacturing.

So far, we have described the trunk and one of the main branches of the tree. The leaves are the specialties. Stainless steel welding might be such a specialty.

The scheme calls for breaking the economy down into fifteen economic sectors, each of which is treated as a tree in this metaphor. The skills and knowledge needed for all jobs in the sector are called the 'core' skills and knowledge. The sector is then further divided into no more than six branches, or, in our terminology, 'concentrations.' These concentrations are determined by an analysis of the work that people do in the sector, so that concentrations are defined not by groups of industries but rather by jobs that require similar skills within the sector.

The primary job of the voluntary partnerships is to define the skills and knowledge that comprise the 'core' and 'concentrations' for their sector and offer 'core plus one' certificates to individuals who pass examinations showing that they have the requisite skills and knowledge.

The voluntary partnerships are also empowered in this scheme to endorse specialty certificates offered by other organizations, including industry associations, unions and individual firms. Unlike the core and concentration certificates, these specialty certificates can overlap and even compete with one another. And they need not completely cover any array of jobs in a concentration or sector. What they do have to do is build upon the skills and knowledge required for a core plus concentration certificate and be expressed in the language and format required by the National Skills Standards Board.

Why This Three-Tier Structure of Cores, Concentrations and Specialties?

The design for these certificates and standards was heavily influenced from experience in other countries. First, many countries have invested scarce public resources in the development of qualifications for specialized jobs. This is not to say that this is a bad idea.

Jobs requiring specialized skills are important in advanced economies. But what the Board is focusing on is balancing that need with the need to provide the maximum flexibility and adaptability both for individuals and the economy as a whole, to highlight the cross-cutting skills and knowledge needed for work in high performance work organizations.
Most people will have most of the skills and knowledge they need for their entry level jobs when they acquire their 'core plus' certificate. They will be qualified for a very broad range of jobs and able to move among them at will, with only a little additional on-the-job training from their employer. They will be able to move to another job in the same cluster but in another concentration with only modest amount of training for the new cluster certificate. Both employers and employees benefit greatly from this system, with its enormous reduction in retraining requirements and its great adaptability to constantly changing job descriptions.

For each of fifteen economic sectors comprising the economy as a whole, certificates will be developed consisting of core knowledge and skills and what the Board calls concentration knowledge and skills. Core knowledge and skills are those common and critical to all jobs in the entire sector. Concentration knowledge and skills cover knowledge and skills in the broad functional areas which make up the economic sector. Each sector will identify up to six concentrations. For example, the business and administrative sector could develop a certificate consisting of standards for the core knowledge and skills that cut across the sector such as competence in the English language, basic mathematics, an ability to communicate well and solve problems, all in the context of work in that sector. In addition, the sector could set standards within concentrations such as clerical work, human resources and personnel support, management information services and accounting. Any individual wishing to be certified would have to meet standards in the core and at least one concentration. The idea here is certificates would give an individual the ability to perform well in an entry-level job within a sector, be prepared for moving at least one level up the career ladder and, in addition, move horizontally within an organization. Finally, the Board is also very interested in ensuring that certificates are portable enough to allow individuals to move across sectors if necessary.

In addition to the "core plus" certificates, Voluntary Partnerships in each sector can endorse specialty certificates covering more specialized knowledge and skills which target particular jobs or the specific needs of any one firm, however, it will be the job of other groups such as industry associations, educational organizations or training providers to bring these specialty certificates to the Voluntary Partnership for endorsement. Individual firms or collections of related firms might want to have standards for their firms or suppliers, based perhaps on some common quality standards. Industry associations might want to have standards that -ire used only by their members or might offer their standards in direct competition with other associations.

The idea of having competition in the specialty certificate arena may be counterintuitive when speaking of standards, but the reason for doing so is to make sure that the standards system itself is flexible, allowing new ways of doing things to come forward constantly, without having to invoke a years-long process of standards review in which all parties in the whole country have to agree before anything is changed.

Competition in the third tier of the standards tree is a guarantee that occupational standards will not prove to be an impediment to the distinctive flexibility and responsiveness of the American economy.

Where the Board is Now

Clusters or Economic Sectors

The first job that the Congress gave the Board was to identify the 'clusters' or economic sectors within which standards will be set. To some extent, standard economic classifications were used for this purpose. But, in some cases, sectors were created in order to group together occupations that required similar skills and knowledge, because the purpose here was to create standards, not to conduct the usual sorts of economic analysis. The best example is the finance and administration sector. All firms of any size have people who perform functions related to finance, personnel, clerical support and so on, whatever their core business is. The Board thought it appropriate to group these functions together for the purpose of setting occupational standards, even though most of the people who perform these functions serve in firms that are identified with other sectors of the economy.
The 15 economic sectors identified by the Board are:

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

Standards for Standards

With the skill standards framework in place, the Board developed 'standards for standards' or the criteria that it will use for endorsing skill standards, assessments and certificates brought to the Board for review by the Voluntary Partnerships. Voluntary Partnerships' skill standards systems must:

- follow a common nomenclature identified by the Board;
- describe in clear terms the critical work functions specific to the core, concentrations and specialties;
- describe the academic, occupational and employability knowledge and skills necessary to perform the critical work functions for the core, concentrations and specialties;
- adhere to statutory requirements and Board policy on assessment;
- be consistent with civil rights law;
- meet or exceed the highest applicable standards in the United States, including registered apprenticeship standards;
- be benchmarked to the best international standards;
- be forward looking; and
- include a plan for the updating and continuous improvement of standards and certificates.

With respect to nomenclature, the standards for the core, concentrations and specialties will each be described in terms of critical work functions meaning major chunks of the work performed which, when taken together, constitute the critical aspects of the work in question. Each critical function will be described in terms of the academic knowledge and skills; occupational knowledge and skills; and the employability knowledge and skills required to perform that function at each of the three levels.

The Board has also said that the standards developed will be performance standards describing what an individual needs to know and be able to do and how well an individual needs to be able to do it. Therefore, in addition to identifying the academic, employability and occupational knowledge and skills, partnerships will describe at what level an individual must know or do any given type of work. These descriptions of knowledge and skills will come to life in the form of examples of work that meet the standards which the partnerships will collect from workplaces across their sector.

The Board has developed a common language for describing the academic and employability knowledges and skills and the level of complexity of those knowledges and skills that each partnership will use as it reviews the critical work functions for work in that sector.

With respect to the issue of language and format, the Board was influenced by how those countries that described their standards:

- in terms of skills alone and not in terms of the underlying knowledge necessary to perform those skills;
- by specific tasks or units, not in terms of the critical functions necessary to do a whole job;
- by defining the work to be done, but never defining performance levels.
The Board has tried to build on the experience of these pioneers and to reflect what they have learned in its design.

Standards Development - Where are We?

The Board has identified partnerships in five of the fifteen economic sectors to build networks of industry associations, companies, labor organizations and others who will make up the Voluntary Partnerships in their sector. These first five groups cover the sectors of manufacturing, retail/wholesale, business and administrative services, finance and insurance and construction. In total, these sectors represent almost three-quarters of all front-line workers in the American economy. Two of the five voluntary partnerships, manufacturing and retail/wholesale sales and services, will have standards ready for release by early 2000. Assessments in these areas will come one year later. The remaining partnerships are one year behind the manufacturers and retailers in their standards development work.

Key Issues for the Future

The NSSB’s work is well underway, but for a voluntary, national system of skill standards, assessments and certificates to be a reality, much more work is ahead. The first hurdle the Board faces in the coming months is to secure continuation funding from the U.S. Congress. If that is achieved, the Board will need to focus on a number of challenges in the coming years such as:

- Implementing quality control systems so that all participants are assured that the standards, assessments and certificates are of high quality, fair, easily accessible and documented correctly.
- Building awareness of skill standards and certificates among educators in elementary and secondary schools, post-secondary educators, corporate trainers, adult basic education professionals, the school-to-work community and the welfare-to-work community.
- Developing and implementing a strategy with states interested in participating in the skill standards system.
- Researching and documenting the new uses of technology to assess candidate’s performance in the workplace, at school (upper secondary and secondary), in welfare-to-work programs and in adult literacy programs.
- Promoting curriculum and instructional practices that lead candidates to become certified.

For additional information on the work mentioned in this paper, the following web sites are available:

National Center on Education and the Economy [www.ncee.org](http://www.ncee.org) for copies of America’s Choice: high skills or low wages! publications on education and skill standards, publications on workforce development and education reform.

National Skill Standards Board [www.nssb.org](http://www.nssb.org) for copies of the NSSB Framework, information on projects developing or implementing skill standards, updates on the Voluntary Partnerships and papers commissioned by the Board on a range of topics.

* Marc Tucker, President of NCEE, delivered the key speech on the conference; he provided the following article, written in cooperation with Betsy Brown Ruzzi, for this report

The National Skill Standards Board was established in 1994 and has begun an effort to set standards, develop assessment and certify individuals.