



# Closing America's Skills Gap

A Business Roundtable  
Vision and Action Plan





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# Introduction



*As America's economy climbs back from the deepest recession in more than half a century, it faces a new challenge: Businesses cannot find enough employees with the right knowledge, skills and training to fill critical jobs. This "skills gap" is a major reason the U.S. economy has not reached its full potential predicted before the recession.<sup>1</sup> Moreover, the problem likely will persist unless significant policy changes occur.*

**To build the workforce needed for 21st century jobs, more must be done now to strengthen the education and training pipeline serving youth and working adults.**

The skills gap issue will grow more acute as the economy recovers and unemployment falls. The reality is that many workers in the current pool of unemployed are not ready to fill many of today's high-skill, high-demand manufacturing and service jobs. As labor force participation continues to decline due to demographic shifts, the search for highly skilled employees will become more desperate. By 2012, business organizations already were spending \$164.2 billion to train their employees.<sup>2</sup> In 2013, training budgets jumped by another 15 percent.<sup>3</sup> Yet these efforts alone will not erase the skills deficit. To build the workforce needed for 21st century jobs, more must be done now to strengthen the education and training pipeline serving youth and working adults.

A new vision is needed — along with concerted action — to close the skills gap, enhance education and training opportunities for America's workers, and return our economy to its full promise. This paper outlines such a vision and presents a distinct set of activities that Business Roundtable is undertaking to address this issue.

# What Is the Skills Gap?

The American Society for Training & Development defines the skills gap as “... a significant gap between an organization’s current capabilities and the skills it needs to achieve its goals. It is the point at which an organization can no longer grow or remain competitive because it cannot fill critical jobs with employees who have the right knowledge, skills and abilities.”<sup>4</sup> For years, U.S. companies have reported difficulty finding individuals with the right set of competencies to fill certain jobs, but the problem appears to have grown more acute. A 2013 Accenture survey found that nearly half of businesses surveyed (46 percent) reported a skills gap — meaning they did not have the employee skills needed to compete effectively in the coming years.<sup>5</sup> A more recent September 2014 survey by Business Roundtable found that 52 percent of member CEOs considered the skills shortage to be either “problematic” or “very problematic” in their U.S. operations (see Figure 1 below).

Largely because of the skills gap, many jobs remain open for extended periods. Dice Holdings, which calculates the time required to fill open jobs, reports that the mean duration of U.S. job vacancies stood at 24.9 working days in June 2014 — higher than before the recession and higher than at any time since 2001.<sup>6</sup> Occupations with some of the highest vacancy rates include information technology (38.9 days), financial services (37 days), health services (36.4 days) and manufacturing (29.2 days). But the skills gap is not caused by one single problem.

## The Three Contributors to the Skills Gap

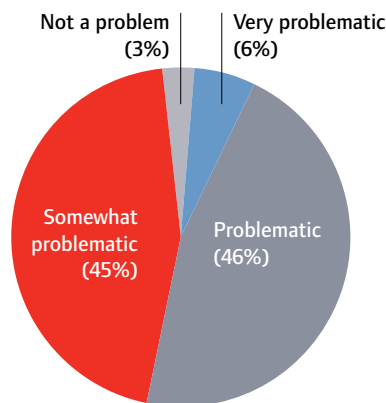
Employers cite three types of skill deficiencies they encounter when recruiting employees.<sup>7</sup> First are those applicants who lack fundamental “employability skills,” such as the ability to use basic math, read technical manuals, work effectively on teams and participate in problem-solving. This lack is often considered a “core skills” problem. Many fault the K–12 education system, which lacks high academic standards in many states, allowing students to graduate from high school without mastering these competencies. These individuals are left unprepared to succeed in either the workplace or college.

Second, certain occupational fields requiring postsecondary education — chiefly the occupational clusters involving science, technology, engineering and math (STEM) — do not have enough qualified workers to fill all available jobs. This is a “higher skills” labor supply problem. These occupations include not only traditional science and engineering jobs, but also emerging careers in financial services, cybersecurity, data analysis, and many other fields requiring quantitative and analytical aptitude. To boost the number of workers trained in these disciplines, postsecondary institutions should expand capacity, create programs (in cooperation with industry) that address new STEM-related careers (such as cybersecurity and data analysis), provide support to boost student persistence in these subject areas, and increase the participation of women and minorities.

Third, many common job categories remain unfilled because workers with good fundamental skills lack the specialized training needed to fill certain high-demand occupations, such as advanced welders or energy services technicians. Some of this “skills mismatch” problem is due to the misalignment of available training to the job skill needs of

Figure 1

### To What Extent Do You Consider Skills Shortages To Be a Significant Problem for Your Company in the United States?



Source: Business Roundtable survey, September 2014



particular regions, often as a result of inadequate labor market analysis; some is due to outdated human resources policies that do not recognize pertinent job experience; and some is due to the industrial certification marketplace, which is confusing to both workers and employees in terms of quality and job relevance.

### *The Core Skills Problem*

A persistent complaint by employers is that many high school and college graduates — as well as some adult workers — lack the fundamental employability skills needed in the 21st century workplace. As routine and lower skill tasks have become increasingly automated and higher skill work more reliant on information technology and problem-solving, the need has grown for individuals who can read and understand complex text, use technology efficiently, and solve problems — individually and with others. In addition to mastering occupation-specific skills, workers must also possess various “generic” skills, including interpersonal communication, self-management and the ability to learn, so they can navigate rapidly changing job requirements.<sup>8</sup> Unfortunately, too many U.S. workers are deficient in these fundamental competencies.

**“By international standards, despite a relatively high level of educational qualifications, the basic skills of adults in the United States are relatively weak.”**

— Time for the U.S. to Reskill?  
What the Survey of Adult Skills Says, *OECD*

U.S. high school students perform at or below average in mathematics, reading and science when compared to their peers in other countries. For example, in the 2012 Programme for International Student Assessment (PISA), conducted by the Organisation for Economic Co-operation and Development (OECD), U.S. students placed:<sup>9</sup>

- Below the OECD average in mathematics (the U.S. score was 481, and the OECD mean was 494);
- Below the OECD average in science (the U.S. score was 497, and the OECD mean was 501); and
- Just slightly above the OECD average in reading (the U.S. score was 498, and the OECD mean was 496).

The 2012 study also found that the United States had a below-average share of top performers in mathematics — students who can develop and work with models for complex situations and work strategically using broad, well-developed thinking and reasoning skills. U.S. students also showed particular weaknesses in performing math tasks with higher cognitive demands, such as taking real-world situations, translating them into mathematical terms and interpreting mathematical aspects in real-world problems.<sup>10</sup>

Although U.S. students finish high school at or below the average skill levels of students in other developed countries, a common assumption has been that U.S. adult workers eventually meet or exceed the skill levels of their foreign counterparts through job experience and additional training. Unfortunately, empirical data do not support this assumption.

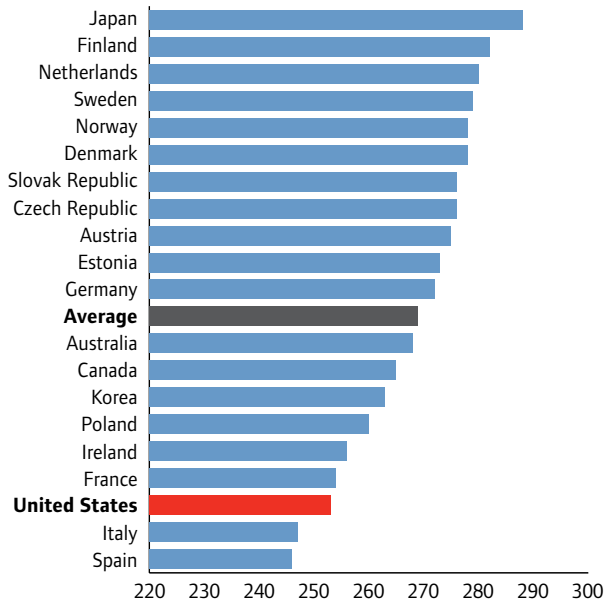
The OECD Programme for the International Assessment of Adult Competencies (PIAAC) — which measures adult workforce skills throughout the world — surveyed workers ages 16–64 in 33 countries using written and computer-based tests. The purpose was to assess competency levels in literacy, numeracy (the capacity for quantitative thought and expression) and problem-solving in technology-rich environments. As the study notes, “... it measures the key cognitive and workplace skills needed for individuals to participate in society and for economies to prosper.”

The results of the first survey were published in 2013. Among the key findings for the United States:<sup>11</sup>

- Low “basic” literacy and numeracy skills are more common in the United States than on average across surveyed countries.
- One in six U.S. adults has low literacy skills; the comparable figure is 1 in 20 in Japan.
- Nearly a third of U.S. adults have weak numeracy skills, far more than the 20 percent average among a group of competitor countries (see Figure 2 on page 4).
- When measuring the ability to use modern information and communication technology in problem-solving environments, U.S. adults perform slightly below the average.

Figure 2

### U.S. Mean Performance Lags



Source: OECD PIAAC, 2013

More troubling is that U.S. workers exhibit such weak basic skills even though they enjoy a relatively high level of education. Among comparison countries, the United States has one of the smallest proportions of adults with less than a high school education and one of the largest with more than a high school diploma. Moreover, participation rates in adult education and training are higher in the United States than in most countries at all skill levels, raising questions regarding the effectiveness of such programs.

Finally, age and experience do not seem to make a significant difference in skill levels. The survey found that the average basic skills of young adults are not very different from older persons.

All of this suggests that U.S. K-12 education is not fully preparing individuals for college or careers and that the education and training available to adult workers may also be deficient.

### *The Higher Skills Shortage in STEM and STEM-Related Fields*

Employers contend that some of the hardest occupational clusters to fill are those involving aptitude in STEM. These skills typically require postsecondary education and training

and apply to a wide variety of jobs that go well beyond core science and engineering fields. Related occupations that use the quantitative and problem-solving abilities of STEM education include financial services, data science and analytics, cybersecurity, health care, graphic design, and information technology. Unlike other job categories for which employers receive many applications, STEM job vacancies often elicit far fewer job applicants, and the mean duration of STEM job postings is twice as long as non-STEM jobs.<sup>12</sup>

The current tight labor supply in STEM and STEM-related fields will grow more pronounced if nothing changes. By some estimates, the economy will create 54.8 million new and replacement jobs between 2010 and 2020, with 65 percent of all jobs requiring some level of postsecondary education and training. Unfortunately, we may fall short by as many as 5 million workers who do not have the postsecondary qualifications needed to meet this goal.<sup>13</sup> Because a large proportion of future jobs will demand advanced analytical and problem-solving abilities, STEM and STEM-related occupations will be among those most affected by this shortfall.

Many believe that the tight labor supply in these high-demand, high-skill occupations is due to our failure to produce enough STEM-trained graduates. Although the number of total STEM degrees has increased over the past several years (from 1.35 million in 2002-03 to 2.1 million in 2011-12), we may not be keeping pace with the growing and broadening occupational fields requiring STEM skills. Moreover, much of the recent increase in STEM degrees involves awards in health care fields, which have doubled over the past decade.<sup>14</sup> These individuals are not filling fast-growing jobs in computer technology, cybersecurity, financial services and a host of other areas needing STEM-trained workers.

The United States also is not keeping pace with its international competitors that are growing their STEM-trained workforce. Data show that the core U.S. workforce (ages 25 to 34) ranks 23rd out of 30 OECD countries in the number of science and engineering graduates.<sup>15</sup>

Addressing this problem requires collaboration between businesses and postsecondary institutions to engage more students in STEM subjects, create programs aligned with many of the new STEM-related occupations, and increase the participation of women and minorities in these fields. It also requires businesses to send clear signals on future job opportunities and the competency requirements needed to fill them so students can properly navigate their training.

### *The Skills Mismatch Problem in Common Industry Jobs*

Beyond workers lacking fundamental skills or high-level training in STEM exists a broader workforce concern: Businesses have difficulty finding employees with the appropriate knowledge and training for specific jobs. In many instances, job applicants have the basic skills and knowledge needed to enter the workforce but lack the competencies (or cannot demonstrate the competencies) to fill a particular skilled position. This problem occurs in numerous trades involving construction, electrical work and welding, as well as in services such as sales and marketing, transportation, and hospitality. Many advanced manufacturing jobs also go unfilled or take longer to fill because of problems finding qualified individuals who are knowledgeable about the equipment and technology used. Despite a falling unemployment rate, workers with middle-tier skills seem to be experiencing the greatest difficulty finding a job match, with many choosing to remain on the sidelines and out of the workforce.<sup>16</sup>

Several issues contribute to the skills mismatch problem. First, the world of competency-based credentials is confusing, making it difficult for employees and employers to know the validity of many credentials or the skills they embody. Although many job seekers hold industry certifications, employers often remain skeptical of their value. A recent report by the Corporation for a Skilled Workforce concluded that “the current ‘market’ for competency-based credentials is neither fully formed nor functional. A chaotic patchwork of sub-degree certificates, licenses and other credentials is offered by a confusing array of industry and occupational groups, third-party validators, and educational providers and systems. No national framework exists for developing and endorsing these credentials. Too few businesses, educational institutions, workers and students — the major players in such a market — understand or make use of competency-based credentials. Even in industries with mature credentialing efforts, the take-up rate by employers is not consistently high.”<sup>17</sup> To make competency-based credentials more relevant and useful to workers and employers, the attributes of high-quality credentials must be identified and communicated, and industry must clarify which credentials it values and trusts.

Second, education opportunities in many regions do not align with regional job markets, with mismatches occurring between job training programs and job needs. These mismatches frequently occur in the absence of good labor market analysis, making obtaining an accurate picture of the regional supply and demand for specific jobs difficult. This inaccurate picture can result in misdirected training opportunities and a shortage of workers needed to fill high-demand jobs. In addition, public and private training providers often fail to engage with local businesses to pinpoint the skill sets needed by employers.

Third, many companies may be missing qualified job applicants because their screening systems rely too much on traditional measures such as educational attainment and length of years in the workforce. Most current human resources departments have not changed their hiring process in years, using degrees plus years of experience to screen applicants. As a result, many relevant competencies may be missed, such as those gained through valid certifications, apprenticeships, work-study programs and experience that relates directly to the job skills needed.

**“The principal finding is that there is a relative shortage of U.S. workers with STEM skills. In other words, STEM skills are in high demand relative to supply, and the problem is especially acute in certain metropolitan areas, where the average vacancy for STEM workers takes months to fill.”**

— Still Searching: Job Vacancies and STEM Skills,  
*The Brookings Institution*

# Vision for Closing the Skills Gap



Business Roundtable believes that employers can and must play a central role in helping build a 21st century workforce, and closing the skills gap strikes at the heart of the issue. Ensuring that workers have the required skills will improve competitiveness, boost productivity, stimulate job creation and accelerate economic growth.

Business Roundtable CEOs are committed to tackling the challenges that contribute to the skills gap. This includes collaborating with key partners that must be part of the solution — federal, state and local governments; educational institutions; the philanthropic sector; and others in the business community. Most important, member CEOs will lead by example in their own companies and communities, and the key elements of the Business Roundtable vision, described below, reflect that pledge.

## **Raising the Bar in K–12 Standards To Improve Core Skills**

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For too long, U.S. education has lagged behind other countries in teaching students the essential skills needed in mathematics, reading, science and problem-solving. As a result, many students today graduate from high school unprepared for college or the workforce. The Common Core State Standards — a set of higher standards developed under the leadership of governors and chief state school officers — were created in 2009 to address this problem. Adopted by 43 states and the District of Columbia, the Common Core State Standards are internationally benchmarked, clearer and more rigorous than previous state standards, and they are designed to instill the skills and knowledge needed to succeed in college or the workplace.

Business Roundtable supports the full adoption and implementation of the Common Core State Standards as an essential first step toward building a more skilled and prepared workforce. Adoption of the Common Core State Standards, as well as assessments that are aligned with the standards, will go far in bringing American students up to international academic benchmarks and prepare youth to succeed in any career pathway that follows.

## **Helping Boost STEM Training To Fill High-Skill, High-Demand Jobs**

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A tight labor supply of individuals trained in core sciences, engineering, math, data analytics, financial services and cybersecurity is affecting the growth, productivity and potential of many fast-growing industries reliant on such skills. Efforts are needed to boost the interest, educational opportunities and numbers of individuals ready to fill jobs in these fields. Business Roundtable is committed to working with educational institutions, states and policymakers to increase student participation in STEM, assist in the design and support of new programs tailored to new STEM-related occupations, provide relevant work-and-learn opportunities, and help increase the number of women and minority students participating in these programs.

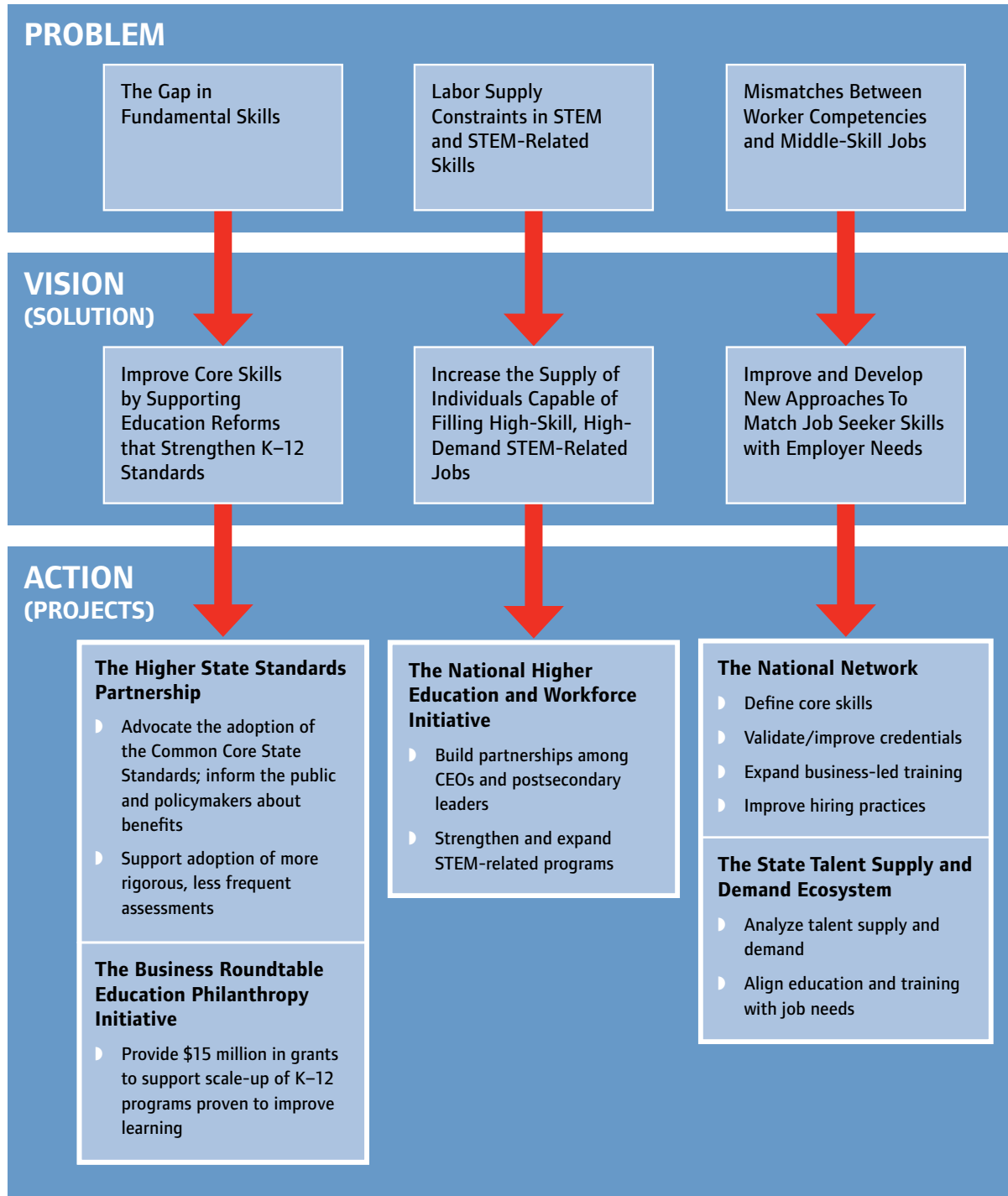
## **Matching Worker Skills to Available Jobs**

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A multifaceted solution is needed to address the skills mismatch problem. First, every worker must know and learn the foundational attributes that he or she must demonstrate to succeed in the workplace at any skill level. These attributes include personal skills (such as integrity and initiative), people skills (such as teamwork and communication), applied knowledge (such as reading and mathematics) and workplace skills (such as planning, organizing and problem-solving). Some of these skills are learned and practiced in school (for example, the Common Core State Standards include many of these skills), while others are gained through experience in such environments as the military, volunteer organizations (such as 4-H Clubs) and work (including summer jobs). Business Roundtable believes that the private sector must help identify these foundational skills so workers know what must be learned to pursue any career path.

Figure 3

### Problem-Vision-Action: The Business Roundtable Strategy To Address the Skills Gap



Second, the large and chaotic world of industry credentials must be sorted out so students, educators and employers know which credentials and certifications matter. In doing so, it will be important to define the attributes that comprise quality credentials and identify those that are valued by specific industry sectors. Businesses also must work with learning centers to help align their coursework and training to the competencies required for industry-certified credentials.

Third, state workforce boards and educational and training centers must understand the job needs in each region and focus on helping students acquire the skills needed to fill those jobs. Educational institutions must be attuned to the labor market, collaborate with local businesses, and expand or modify programs when needed. In addition, businesses should help by creating training programs that leverage work experience with classroom instruction. While educational institutions can impart a great deal of knowledge and hands-on experience, they cannot replicate each specific job. Employers increasingly need to play a role in defining, evaluating and hosting competency-based learning opportunities, such as apprenticeships and work-and-learn programs that complement local classroom instruction. Such programs allow individuals to earn income while learning practical, on-the-job skills. They also can help employers attract and retain qualified workers and build the technical and foundational skills needed to advance in a specific line of work.

Fourth, human resources practices must improve across industry to identify competencies gained through valid credential programs and relevant experience. As competency-based education pathways and industry-recognized credentials increasingly become the path for individuals to prepare for careers, employers must be able to identify what job experience is valuable, which industry credentials are valid and which apprenticeship programs prepare workers for the job at hand.

# Action Plan To Address the Skills Gap

Business Roundtable, in collaboration with strategic partners, has launched five key projects to begin implementing its vision. Each of these projects involves sizeable participation by individual businesses, business associations, and several philanthropic and industry foundations. The five projects are:

- ▶ **The Higher State Standards Partnership**, which is focused on raising education standards and advocating the use of aligned assessments in all states to ensure that all students are prepared for college and the workplace;
- ▶ **The Business Roundtable Education Philanthropy Initiative**, which is using corporate philanthropy to scale-up high-performing K–12 programs throughout the country that address critical education and workforce preparedness issues;
- ▶ **The National Higher Education and Workforce Initiative**, which is working with government and education institutions to increase the number of individuals who have the postsecondary education and training needed to fill high-skill, high-demand jobs;
- ▶ **The National Network of Business and Industry Associations Matching Skills with Jobs**, which is defining workplace skills, improving the utility of industry certifications, expanding work-based learning and developing practices in competency-based hiring; and
- ▶ **The State Talent Supply and Demand Ecosystem**, which will model the alignment of workforce needs in a state with the education and training available and examine policies that support workforce training.

The figure on page 7 illustrates the linkages between the skills gap components, the Business Roundtable vision and each project.

## The Higher State Standards Partnership

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The Higher State Standards Partnership is a nonprofit, nonpartisan organization dedicated to ensuring that high school students graduate with the skills needed to succeed in college and the workplace. Business Roundtable and the U.S. Chamber of Commerce are partners in the organization.

The business community believes that implementation of the Common Core State Standards is a crucial first step toward creating a 21st century workforce. The standards are more rigorous than previous state standards and will raise student performance in reading, math, science and problem-solving — basic skills needed in every modern workplace. Because each state sets its own K–12 education standards, the partnership concentrates its resources on helping parents, grassroots organizations and policymakers understand the new standards and how they will improve student achievement in individual states.

The partnership created a website, [www.thecommoncore.com](http://www.thecommoncore.com), which presents facts on the Common Core State Standards, provides background about their creation, debunks harmful myths and describes their benefits to student learning.

## The Business Roundtable Education Philanthropy Initiative

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The purpose of this initiative is to identify and scale-up a small number of high-performing K–12 programs that enhance student learning and prepare youth for further education and careers. These evidence-based programs have demonstrated results, and Business Roundtable member companies have collectively contributed nearly \$15 million to the effort.

Programs nominated for consideration demonstrated one or more of the following:

- ▶ Innovative approaches to teacher education, training or professional development, particularly in high-demand fields (e.g., STEM);
- ▶ Use of technology tools and applications that accelerate student success;
- ▶ Improved student achievement in one or more of the STEM-related subjects;
- ▶ Literacy initiatives that ensure that all students are reading on grade level (particularly, but not limited to, reading by the end of 3rd grade);
- ▶ Improved college and career readiness; and
- ▶ Higher high school graduation rates and lower remediation needs for students entering postsecondary education.

An independent panel of experts selected five programs for funding based on results, transparent metrics, alignment with the Common Core State Standards and the capacity for scalability:

- ▶ **Executive Development Program for School Leaders**, which uses face-to-face and online training to develop effective principals;
- ▶ **New Teacher Center**, which partners with states and districts across the nation to design and implement comprehensive new teacher induction programs that provide face-to-face and online mentoring with highly skilled educators;
- ▶ The National Math and Science Initiative's **UTeach Replication Program**, which enables college students majoring in STEM fields to receive a full teaching certificate without adding time or cost to their degrees;
- ▶ **ST Math**, which uses game-based instructional software to boost math comprehension and proficiency, primarily for K–5 students; and
- ▶ **Success for All**, which focuses on ensuring success in reading for children in high-poverty elementary and middle schools.

## **The National Higher Education and Workforce Initiative**

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The National Higher Education and Workforce Initiative creates partnerships among CEOs, college and university presidents, and government leaders to build the talent needed to fill the nation's high-skill, high-demand jobs. Areas emphasized are STEM and STEM-related fields, and particular attention is given to engaging low-income and under-represented minority students in these occupations. The partnership includes Business Roundtable; the Association of Public and Land-grant Universities; and the Business-Higher Education Forum, which serves as partnership lead (see [www.BHEF.com](http://www.BHEF.com)).

The initiative creates regional alliances between universities and businesses to help develop a diverse, qualified pool of applicants for jobs in specific high-skill fields. Currently, the Business-Higher Education Forum is focusing on developing programs and increasing student graduation in the fields of financial services, cybersecurity, data science and analytics, risk management, and social and mobile technologies and their application.

One example of a successful intervention can be found in Maryland, where the initiative joined with the governor's office, state university system and other stakeholders to help expand the regional cybersecurity workforce.<sup>18</sup> The work began in 2012 after the state conducted an analysis of the cybersecurity labor pipeline and found that it was not producing the graduates needed to fill this fast-growing field. The state worked with the initiative to create a regional coalition of higher education, business and government leaders to address the problem. One outcome was the creation of the Advanced Cybersecurity Experience for Students (ACES) program at the University of Maryland, supported by a \$1.1 million grant from the Northrop Grumman Foundation.

The ACES program centers on undergraduate study and cuts across a diverse range of majors, including computer science, mathematics, engineering, business and criminology. The program incorporates an intensive interdisciplinary curriculum in relevant technical fields, hands-on learning experiences, collaborative projects and professional insight from corporate leaders. Job-related experience is gained through collaboration with the security team responsible for protecting the university's infrastructure and internship opportunities with federal agencies, such as the Department of Defense and the National Security Agency, as well as with private corporations such as Northrop Grumman.



Upon graduation, students receive a designation on their transcript indicating their participation in the ACES program. This citation is recognized by employers as a meaningful credential in the hiring process for cybersecurity workers.

Other Maryland schools engaged in the initiative's cybersecurity effort include Bowie State University, Towson University and the University of Maryland, Baltimore County. Because of the success of the initiative's collaboration with Maryland, work is under way to forge similar collaborations in other states facing workforce challenges.

## **The National Network of Business and Industry Associations Matching Skills with Jobs**

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The National Network of Business and Industry Associations comprises members of the industries that are expected to generate three-fourths of job growth through 2020. The National Network is devoted to solving the skills mismatch problem affecting many high-demand job areas. Core efforts are to:

- ▶ Define a common set of foundational skills needed to succeed in the workforce at all levels (these are designed to serve as a foundation to all acquired intermediate and advanced skills);
- ▶ Ensure that industry credentials are valid and correctly match the jobs for which they are intended;
- ▶ Expand business-led training, apprenticeship and internship programs; and
- ▶ Change recruiting and hiring practices to emphasize competencies and not degrees and length of work experience alone.

### *Defining Foundational Knowledge and Skills Needed To Succeed in the 21st Century Workplace*

Employers in every sector need people with a strong academic foundation, particularly in reading and math, and "soft skills" like teamwork, problem-solving, work ethic and integrity. These are the foundational skills upon which job-specific competencies and specialty knowledge are added through further experience and training. A successful career must begin with mastering these skills.

The National Network has examined the core employability skills and published a blueprint of their key elements (see sidebar on page 12). This blueprint:

- ▶ Allows employers to identify the common skills all their employees should exhibit;
- ▶ Informs potential employees about the basic skills employers expect them to have for any job in the workplace; and
- ▶ Helps educators and other learning providers understand what foundational skills to emphasize.

### *Identifying Valid Industry Credentials and Defining Their Attributes*

To help employers and employees navigate thousands of industrial credentials, the National Network has undertaken two tasks:

1. Cataloguing the credentials that industries recognize as correctly validating the skills needed in their industry and
2. Identifying the attributes that comprise high-quality, valid credentials so new ones can be developed for evolving job categories.

As part of the first task, the National Network has created an inventory of competency-based certifications that help businesses correctly identify workers who can fill jobs at particular skill levels. The inventory currently covers the following industrial sectors:

- ▶ Construction;
- ▶ Energy;
- ▶ Health care;
- ▶ Information technology;
- ▶ Leisure and hospitality;
- ▶ Advanced manufacturing;
- ▶ Professional and business real estate;
- ▶ Wholesale and retail; and
- ▶ Transportation.

As part of the second task, the National Network is developing a guide that organizations can use to create new standards-based credentials. The guide will describe the attributes, proficiencies and training needed to certify the skills required in new or evolving occupations.

### *Elements of Core Employability Skills*

The National Network has published a blueprint of the core competencies needed by every employee (see [www.nationalnetwork.org](http://www.nationalnetwork.org)). The skills and traits described cover the following:

- ▶ Personal Skills — integrity, initiative, dependability, reliability, adaptability and professionalism;
- ▶ Applied Knowledge — reading, writing, mathematics, science, technology and critical thinking;
- ▶ People Skills — teamwork, communication and respect; and
- ▶ Workplace Skills — planning and organizing, problem-solving, decisionmaking, business fundamentals, customer focus, and working with tools and technology.

More detail is provided under each skill area. For example, under Personal Skills, “initiative” is defined as “demonstrating a willingness to work and seek out new work challenges.” Examples of this trait include:

- ▶ Taking initiative in seeking out new responsibilities and work challenges, increasing the variety and scope of one’s job;
- ▶ Pursuing work with energy, drive and effort to accomplish tasks;
- ▶ Establishing and maintaining personally challenging, but realistic, work goals; and
- ▶ Striving to exceed standards and expectations.

### *Expanding Business-Led Training, Apprenticeship and Intern Programs*

In today's world, learning and working should not be considered independent, stand-alone domains. Rather, the ever-changing technology-driven economy demands that individuals weave learning throughout their careers to upgrade their skills, acquire new competencies, and apply them across multiple jobs and industries. Because of this compulsory integration of the "learning world" and the "working world," employers increasingly need to play a role in defining, evaluating and delivering learning opportunities. The National Network is focused on expanding these types of business-led work-and-learn models, like apprenticeships, by defining the attributes of effective models, showing how they apply across a continuum from middle school through mid-career, and developing tools and guidebooks that will make it easier for employers to build and sponsor work-and-learn opportunities.

### *Changing Recruiting and Hiring Practices To Emphasize Competencies*

As competency-based education and industry-recognized credentials increasingly serve as the path individuals follow to prepare for careers, employers need to respond by changing how they recruit, screen, hire and advance employees. Employers must transform human resources practices so that job eligibility is determined by competencies and not simply degrees earned and years employed. The National Network is exploring ways to make these new 21st century competency-based hiring practices more commonplace across industry sectors. Among its first efforts is documenting best practices and creating guidebooks for human resources professionals.

## **The State Talent Supply and Demand Ecosystem**

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Business Roundtable has begun developing a model for determining state workforce needs and assessing the talent pipeline's ability to meet those needs on a regional basis. The model will include:

1. A data-driven identification of job-skill supply and demand within the state;
2. An assessment of how well education and training programs align with employer needs;
3. An action plan for how the state can better align programs, funding, incentives and communication across state agencies to develop a more integrated talent supply ecosystem; and
4. Best practices for maintaining and updating the state's talent supply and demand model.

To build the model, Business Roundtable will use expert consultants with deep knowledge of the U.S. labor market and future employment demand, data analytics, and government workforce policies. The model will be developed using one or more pilot states and then tested before being offered to all states.

# Moving Forward



The skills gap is real, and it is causing jobs to go unfilled and diminishing economic growth. Closing the gap will provide both short- and long-term benefits. Short-term benefits will accrue if we can upgrade the skills of the current labor force now through improved education and training opportunities that address the current job market. Long-term benefits will occur if an improved education and training pipeline gives:

1. New workers entering the job market a firm foundation for growth throughout their careers and
2. Existing workers a path for lifelong learning so their skills and training remain up to date with changing workforce demands.

America's future labor force is expected to expand more slowly than in the past. If it lacks the proper skills, employment will be suppressed, career growth retarded, productivity dampened and economic progress curbed. However, if we can give workers the skills they need for the jobs at hand, then all who seek employment will be ensured many options. As more jobs continue to be created, the U.S. education and training system — and business — must do their part to ensure that no worker is caught in the "skills gap."

# Endnotes

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