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# Taking Action on Education and Workforce Preparedness

Draft as of October 4, 2013



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## I. Introduction

A skilled, prepared workforce is the cornerstone of economic competitiveness. Yet, by many measures, the United States is failing to develop the talent that U.S. businesses need to compete in the modern global economy. For instance, according to a Business Roundtable survey of its members, more than 95 percent of CEOs indicated that their companies suffer from skills shortages.<sup>1</sup> This skills shortage is reflected in the broader U.S. labor market, as there are more than 3.9 million U.S. job openings, yet more than 11 million U.S. workers remain unemployed.<sup>2</sup> These data points are indicative of an alarming trend: There is a persistent and growing mismatch between the skills that U.S. workers possess and the skills that U.S. businesses need. The long-term negative impacts of this “skills gap” on workers, families, businesses, governments and the economy are potentially profound and far reaching.

A nation’s capacity to develop a skilled, prepared workforce is inextricably linked to the quality of its education system. In the United States, however, disturbing gaps persist in these areas as well. Domestically, there are significant gaps in student achievement and educational attainment across a range of socioeconomic groups.<sup>3</sup> Internationally, the United States continues to lag behind its peers in terms of student performance in mathematics, science and reading.<sup>4</sup> To be clear, the U.S. education system is not getting worse — indeed, evidence suggests that it is improving.<sup>5</sup> It is, however, failing to keep pace with both the demands of the modern global economy and the improvements observed in other nations.

The good news is that larger, faster improvements in U.S. education are within our reach. Many states have experienced K–12 achievement gains that are two to three times greater than other states,<sup>6</sup> and a growing number of postsecondary institutions, from technical schools to universities, are preparing students of all ages and levels of experience for successful careers at an affordable cost.<sup>7</sup> Unfortunately, these success stories tend to be the exceptions and not the rule. To realize more widespread progress, leaders at all levels — policymakers, business executives, school administrators, teachers and parents — will need to embrace and advance new ideas about what, when, where and how we teach and learn.

Accordingly, the CEOs of the Business Roundtable believe that it is time to take action on education and workforce training. As an association of more than 200 leading U.S. companies with more than 16 million employees, the Business Roundtable is acutely aware of the importance of a skilled, prepared workforce to the competitiveness of U.S. businesses and the U.S. economy. We believe that building America’s capacity to effectively develop “homegrown” talent is one of the most important challenges of our time. We believe that achieving larger, faster improvements in U.S. education and talent development is not only possible, but also urgent and imperative.

With those considerations in mind, *Taking Action on Education and Workforce Preparedness* presents a practical, forward-leaning plan to equip the U.S. workforce with the skills needed to compete and succeed in the 21<sup>st</sup> century. The report draws on interviews with more than 30 recognized experts in the fields of education and workforce development regarding what policymakers, business executives, school administrators, teachers, parents and other key stakeholders can do to ensure that all Americans are ready to work and prepared to succeed.<sup>8</sup> Incorporating these ideas, as well as the unique

perspectives offered by member CEOs, the Business Roundtable identified five priorities for building a skilled and prepared workforce:

- (1) Fully adopt and implement the Common Core State Standards;
- (2) Encourage students to study and pursue careers in science, technology, engineering and math (STEM) fields;
- (3) Develop more effective teachers;
- (4) Expand access to high-quality early learning programs; and
- (5) Ensure that postsecondary education and workforce training programs align with employer needs.

Systemic problems demand systemic solutions. As a practical matter, however, the Business Roundtable recognizes that institutions and policies can be slow to change. Accordingly, our recommendations in each priority area include both incremental, short-term solutions that will move the system forward and systemic, long-term solutions that will gradually transform the way in which we teach and learn. By driving both incremental and systemic change, the United States can increase educational achievement, improve college and career readiness, and expand the nation's capacity to develop the homegrown talent that it needs to compete and win in the modern global economy.

## II. Guiding Principles for Developing a Skilled, Prepared Workforce

To advance the goal of developing a skilled, prepared workforce, stakeholders at the federal, state and local levels should ensure that policies and initiatives are aligned with the following core principles.

- **Establish World-Class Expectations:** U.S. student achievement and workforce productivity should meet or exceed those in other developed countries.
- **Ensure Public Accountability:** U.S. educational institutions and training programs that receive federal, state or local funding should be held accountable to the public for producing results.
- **Encourage Cost-Effective Innovation:** U.S. policymakers and educators should encourage innovations that have the potential to produce better results for the same or lower cost.
- **Enhance Technology's Educational Applications:** U.S. policymakers and educators should leverage technology to improve the productivity of education and training programs, as well as shift them from time-based systems to learning-centered and competency-based systems.
- **Expand Data-Based Decision Making:** Policymakers, educators and consumers should have transparent and useful data on performance, cost and labor market outcomes to help them make informed, cost-effective decisions about schools, programs and credentials.
- **Build Public-Private Partnerships:** The public and private sectors should look for opportunities to build effective partnerships that engage educators, employers and policymakers in developing and implementing cost-effective solutions.
- **Demand Results:** Education policies and programs with proven results should be scaled, and those that are ineffective should be terminated.

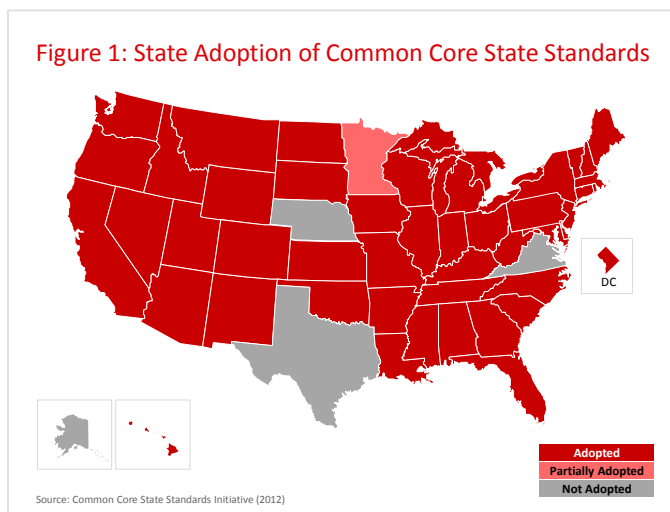
### III. Priority #1: Fully Adopt and Implement the Common Core State Standards

The Common Core State Standards represent an ambitious, state-led initiative to outline what all students should know in K–12 English language arts and mathematics to prepare them, grade by grade, to graduate from high school ready for college or the workforce. Developed by educators and other experts under the leadership of the National Governors Association and the Council of Chief State School Officers, the Common Core State Standards were launched in 2009 and have since been adopted by 45 states and the District of Columbia.<sup>9</sup>

The Common Core State Standards are a potential game changer in terms of developing a more skilled, prepared U.S. workforce. In addition to being internationally benchmarked, they are significantly clearer and more rigorous than previous state standards and, importantly, aligned with college and employer expectations to ensure that U.S. students have the skills and knowledge they need to compete in the modern global economy.

Of course, higher standards do not guarantee better student achievement. Although the Common Core State Standards may serve as the spark that ignites action, positive impact will ultimately depend on successful implementation. Business leaders have an important role to play in communicating the

value of the Common Core State Standards and ensuring their successful implementation, particularly because the initial test results can be misleading. When standards change, test scores tend to drop temporarily because the new assessments are more demanding. Likewise, when students first take assessments based on the content and skills included in the Common Core State Standards, their scores are likely to decrease until teachers become more adept in helping students learn the new content and skills. The business community’s continued support is essential to maintaining a long-term commitment to the more demanding standards and tests.<sup>10</sup>



#### A CEO Perspective on Common Core State Standards

*“The Common Core State Standards maintain American hallmarks of rigor, states’ rights, economic competitiveness and accountability and should be supported and fully implemented.”*

— Rex Tillerson, Chairman & CEO, Exxon Mobil Corporation  
Chair, Business Roundtable Education and Workforce Committee

#### Policy Solutions

The Business Roundtable supports the full adoption and implementation of the Common Core State Standards as a pathway toward building a more skilled, prepared workforce. The following solutions will help ensure that the standards are successfully implemented:

- (1) Ensure Improved Educational Outcomes:** State and local policymakers should ensure that the shift to more rigorous standards results in improved educational outcomes, such as higher high school graduation rates with no need for remediation at college or work. Specifically, policymakers should:
- **Replace Previous State Tests:** To assess how well students understand the content and skills in the Common Core State Standards, states should replace existing tests with high-quality assessments. New assessments should use the capabilities of online testing, which can provide more accurate measures of student learning and more timely results. States should use common assessments, whether developed by a consortium of states (e.g., Partnership for Assessment of Readiness for College and Careers and Smarter Balanced Assessment Consortium) or other providers, which will improve the comparability of scores across states.
  - **Hold Schools Accountable:** States should hold all schools accountable for achieving challenging, but attainable, growth targets for all groups of students on state assessments aligned to the Common Core State Standards.
  - **Prepare Teachers and School Leaders:** States should align teacher and school leader preparation and professional development to the Common Core State Standards, including best practices and instructional materials. Professional development efforts should also provide opportunities to develop and share lessons and analyze and use data to improve instruction.
  - **Deploy and Apply Technology Effectively:** States should effectively deploy and apply technology to improve learning, teaching and management. Technology can be used to motivate students, individualize the content and pace of instruction, provide enrichment, and increase the productivity of K–12 education.
  - **Communicate Expectations at the Next Level:** States should use the Common Core State Standards to help educators understand and communicate expectations at the next level, which will ease student transitions, especially between major grade levels (e.g., prekindergarten to kindergarten, middle school to high school, and high school to postsecondary education or the workforce).
- (2) Provide Multiple Pathways for Students:** Educators should use the Common Core State Standards to provide students with multiple pathways to college and career readiness. The pathways should provide academic content aligned with real-life applications, project-based learning and apprenticeships mapped to careers. They should also include clear information about the kind of preparation those careers require. Students should have an opportunity to earn not only a high school diploma, but also college credits and workforce certifications valued by employers.
- (3) Increase School Options:** Federal, state and local policymakers should increase the number of public school options (e.g., charter, virtual, magnet, regular, etc.) available to parents and students. Whether selected by choice or assigned to students, all public schools should participate in their states' assessment and accountability systems.
- (4) Create an Independent Organization To Review Curricula:** Educators need an independent organization to create *Consumer Reports*-type reviews that assess how well curriculum and



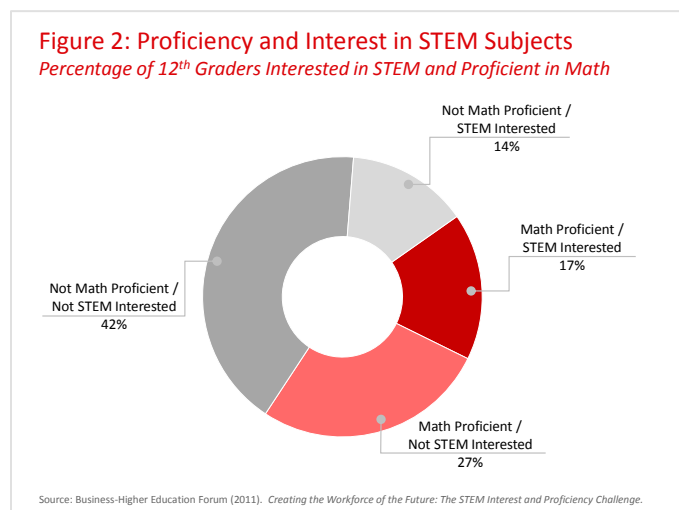
instructional materials are aligned with the Common Core State Standards. Although there is currently a shortage of high-quality curricula aligned to the Common Core State Standards, eventually curricula of varying quality will be available from both nonprofit and for-profit sources. Independent reviews regarding the quality of these materials will assist educators with making well-informed, cost-effective decisions.

**(5) Reauthorize the Federal Elementary and Secondary Education Act (ESEA):** Congress should reauthorize ESEA, using data to improve the law and resolve problems that emerged during implementation of the No Child Left Behind Act.<sup>11</sup> The Administration addressed many of these problems via state and local waivers, but these waivers should not serve as a substitute for Congressional action.

#### IV. Priority #2: Encourage Students To Study and Pursue Careers in STEM Fields

Sustained excellence in the fields of science, technology, engineering and mathematics (STEM) is the hallmark of an innovative and dynamic economy. If the United States is going to compete in the modern global economy, its education and workforce training systems must prepare more students for STEM and STEM-related careers. Although STEM occupations demand extensive postsecondary education and training that ranges from associate degrees to advanced degrees to workforce certifications, they also offer attractive career opportunities. For instance, STEM fields tend to have higher job growth rates,<sup>12</sup> lower unemployment rates<sup>13</sup> and higher starting salaries than non-STEM fields.<sup>14</sup>

Despite the importance of STEM occupations to U.S. economic competitiveness and their attractiveness as a career pathway, far too many U.S. students find STEM learning uninspiring. In fact, more than 80 percent of U.S. high school students are either uninterested or nonproficient in STEM subjects — suggesting that millions of U.S. students (and their parents) are failing to see the relevance and opportunity that a STEM education can bring to their lives and the nation’s future.<sup>15</sup>



As a result, the United States continues to lag behind its peers in terms of STEM education. Although the number of U.S. college graduates with degrees in most STEM-related fields has increased, the growth rates in many competitor nations have been far higher.<sup>16</sup> In addition, U.S. students are falling behind their peers in terms of performance on STEM-related tests. For instance, on international tests of 15-year-old students, the United States ranks 17<sup>th</sup> in science performance and 25<sup>th</sup> in mathematics among 34 Organisation for Economic Co-operation and Development (OECD) countries.<sup>17</sup> Finally, many high school graduates are ill prepared to succeed in STEM subjects at the collegiate level — indeed, more than half of high school graduates are not prepared for college-level math, and 69 percent of high school graduates are not prepared for college-level science.<sup>18</sup>

## A CEO Perspective on STEM Education and Careers

*“There is an alarming shortage of young people pursuing careers in science and engineering — particularly women and people of color.”*

— Ursula Burns, Chairman & CEO, Xerox Corporation

## Policy Solutions

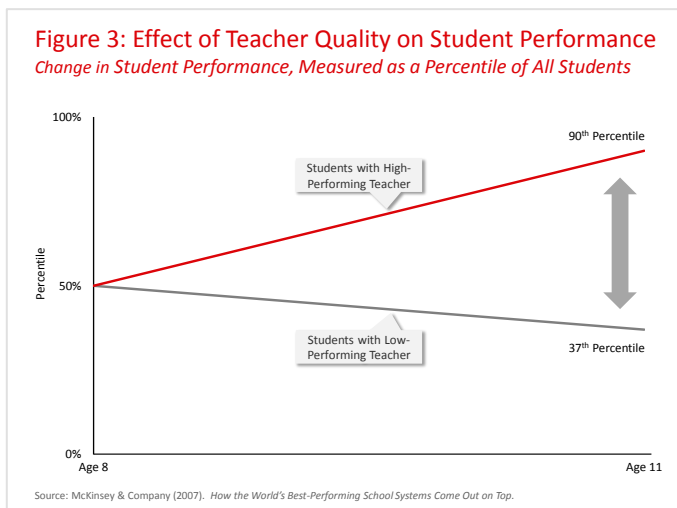
The Business Roundtable supports improving STEM learning for all students and encouraging more students to study and pursue careers in critical STEM fields as pathways toward developing a more skilled, prepared workforce.<sup>19</sup> The following policy solutions are intended to help improve STEM instruction and encourage students to pursue STEM-related careers:

- (1) Adopt the Next Generation Science Standards:** States should adopt the Next Generation Science Standards, which are designed to provide all K–12 students with an internationally benchmarked science education.<sup>20</sup> State and local policymakers and educators should also begin making the necessary changes to support successful implementation of these standards.
- (2) Improve STEM Instruction at All Levels:** State policymakers and educators should strengthen preparation and professional development programs using research-based practices to improve STEM instruction at all levels.
- (3) Increase Exposure to STEM Careers:** National, state and local programs should introduce students early and often to the many career opportunities that require STEM skills, which can provide students with real-life examples and experiences in the different ways that STEM skills are used in jobs of all kinds, at all wage levels.

## V. Priority #3: Develop More Effective Teachers

Effective teachers are critical to educational achievement and, therefore, the development of a skilled, prepared workforce. According to a McKinsey & Company study of international education performance, three things matter most in the world’s top-performing school systems: (1) getting the right people to become teachers; (2) developing them into effective instructors; and (3) enabling them to deliver the best possible instruction for every student.<sup>21</sup> In short, improving teacher effectiveness is a proven pathway to improving student achievement and, ultimately, college and career readiness.

Although the importance of teacher effectiveness is generally recognized, several facts suggest that it is often underappreciated in the United States. For example, in high-



performing countries, teachers are recruited from the top third of college graduates; in the United States, they are primarily recruited from the bottom third.<sup>22</sup> In high-performing countries, teacher compensation is highly competitive with other fields; in the United States, teacher compensation is generally uncompetitive with other professions that top college graduates pursue.<sup>23</sup> In high-performing countries, novice teachers are given structured support, and experienced teachers are given continuous opportunities to improve their skills; in the United States, most teachers are given superficial and limited professional development opportunities.<sup>24</sup> Making matters worse, research indicates that the students who need the most help are frequently assigned to the teachers who have the least experience or preparation in the subject they are teaching and are the least effective in helping students succeed.<sup>25</sup>

### A CEO Perspective on Teacher Effectiveness

*“Education is the engine of economic growth. We will not sustain that growth without effective teachers who have technological tools that help motivate and engage students.”*

— James Goodnight, CEO, SAS

## Policy Solutions

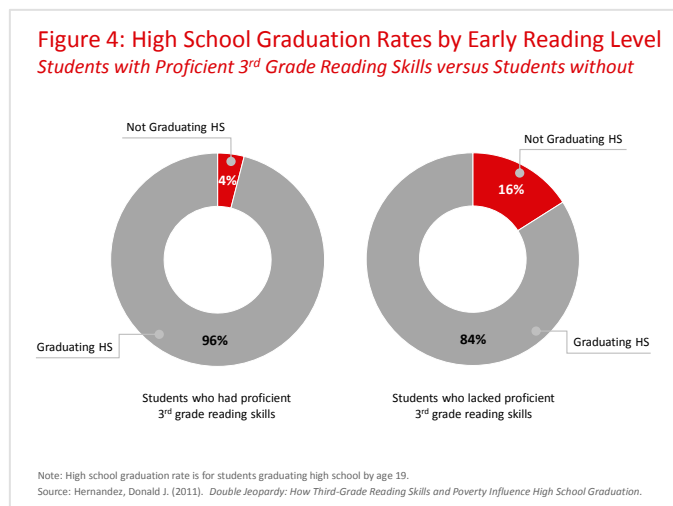
The Business Roundtable supports an intensive focus on improving teacher effectiveness. Significant changes are needed in federal, state and local policies to select and prepare effective teachers and also ensure that they are evaluated, compensated and retained properly. Specifically, policymakers should:

- (1) Increase Selectivity and Improve Preparation:** State policymakers should make entry into the profession (both traditional and alternative routes) more selective with the goal of attracting high-caliber students and high-performing professionals from other fields. Preparation of prospective teachers should focus on developing a strong command of the subject(s) they teach, Common Core content, use of data and technology, clinical observations of effective teachers, and field experience under the supervision of effective teachers.
- (2) Improve Working Environments:** State policymakers and local leaders should create collegial and supportive working environments in which both new and experienced teachers are supported and developed and effective teachers are recognized and retained.
  - **Implement Constructive Teacher Evaluations:** State and local policies on teacher evaluation should view evaluations as useful experiences that focus on continuous improvement based on multiple measures, including growth in student achievement and classroom observations. Fair and swift action should be taken in instances in which teachers do not continuously improve.
  - **Invest in Effective Professional Development:** State policymakers and local leaders should analyze investments in teacher and principal professional development to determine whether they result in improved practice and higher student achievement. Resources should be reallocated to ensure the most effective strategies and use of time.
  - **Ensure Strong School Leaders:** State and local policymakers should focus on the connections among excellent teaching, effective school leadership and successful schools. Strong leaders should be recruited, prepared and trained to foster and retain effective teachers.

**(3) Modernize Compensation and Pension/Benefit Systems:** State and local policymakers need new approaches to modernize compensation and pension/benefit systems to meet the needs of a mobile professional workforce.

## VI. Priority #4: Expand Access to High-Quality Early Learning Programs

High-quality early learning and reading programs build a critical foundation for future educational achievement. Studies show that children who attend high-quality early childhood education programs are more likely to excel in school, graduate from high school, stay out of trouble and earn higher wages



than those who do not attend such programs.<sup>26</sup> Children who do not read proficiently by the end of 3<sup>rd</sup> grade are four times more likely to drop out of school by age 19 than students who read at or above their grade level.<sup>27</sup> Unfortunately, millions of young children in the United States continue to struggle to read at grade level, with 33 percent of all 4<sup>th</sup> graders nationwide — including half of African-American and Hispanic 4<sup>th</sup> graders — reading at below basic levels.<sup>28</sup>

While the evidence is clear, the path forward is not. Under severe budget constraints, states reduced funding in early childhood programs more in 2012 than in any previous year.<sup>29</sup> At the federal level, the Administration supports universal prekindergarten, but Congress remains divided. Large budget deficits limit funding options, and concerns remain about significantly increasing funding for Head Start, child care, prekindergarten and other programs when results are mixed because of varying quality.

### A CEO Perspective on Early Learning

*“The decision about whether to invest in quality early childhood education is easy. It’s a simple choice: Pay now or pay more later.”*

— Edward B. Rust, Jr., Chairman & CEO, State Farm Insurance Companies

## Policy Solutions

The Business Roundtable supports voluntary access to high-quality early childhood programs, as well as financial assistance that enables participation by low-income children who are most at risk of starting school behind their peers. The Roundtable also supports proven policies and programs that focus on all students reading proficiently by the end of 3<sup>rd</sup> grade. The following policy solutions will help support these goals and improve early learning:

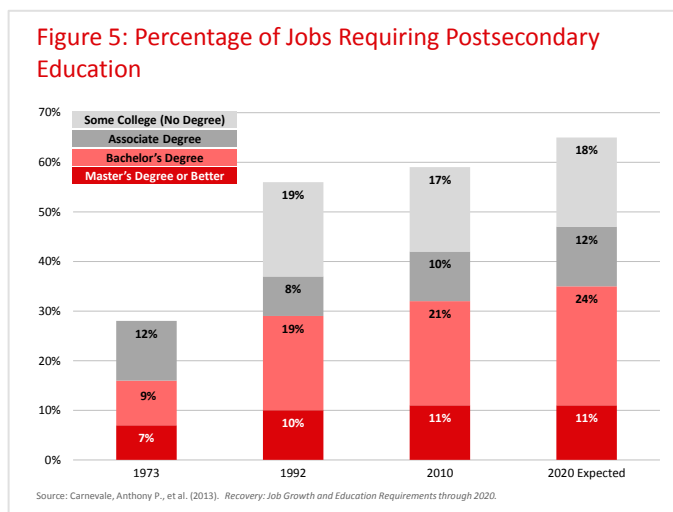
- (1) Increase and Expand Access to High-Quality Prekindergarten Programs:** Federal, state and local policymakers should increase the number of and expand access to high-quality prekindergarten programs.<sup>30</sup> Assessments of children’s progress provide important data to improve teaching, evaluate student readiness for kindergarten and measure program quality.
- (2) Encourage Family Engagement:** Federal, state and local policymakers should support involvement by parents or other adults with parental responsibility, who ultimately serve as a child’s first teacher. Parents and guardians should have easy access to data and information on program quality to help them make informed decisions.
- (3) Require Early Screening of Children:** States should require early screening to identify and support children who are at risk or are already exhibiting signs of developmental delays.
- (4) Target Funding for Effectiveness:** When making difficult choices about funding, federal and state policymakers should consider a wide range of options:
  - Invest in expanding access to only high-quality programs;
  - Refocus Head Start on low-income infants and toddlers (ages 0–2), particularly given research on early brain development;
  - Develop federal/state partnerships that enable children from low- and middle-income families to participate in high-quality early childhood programs by using a sliding scale payment system that is tied to family income;
  - Offer innovative funding to incentivize results (e.g., social impact bonds that are premised on their predicted ability to pay for themselves by reducing future costs);
  - Eliminate costly regulatory barriers that prevent coordination among federal, state and local funding; and
  - Shift free public education to prekindergarten through 11th grade, with the goal of educating children earlier while still providing 13 years of free education. Under this model, the 11<sup>th</sup> grade would serve as the final year of high school.
- (5) Allow for Data Sharing between Early Childhood and K–12:** State policymakers should build data systems that early childhood providers and teachers in the early grades can use to track student progress and improve school readiness and success in grades K–3.
- (6) Improve Reading Proficiency:** States should require all students to read on grade level before beginning 4th grade. To ensure that students are able to meet this requirement, policymakers and educators should focus on proven policies and practices, including high-quality prekindergarten programs, research-based reading practices to prepare prekindergarten through grade 3 teachers, policies that reduce chronic absenteeism, and extended time for students who need extra help to develop their reading skills.<sup>31</sup>

## VII. Priority #5: Ensure that Postsecondary Education and Workforce Training Programs Align with Employer Needs

Postsecondary education and training is critical to building a skilled, prepared workforce and, ultimately, boosting the long-term growth of the U.S. economy.<sup>32</sup> Between 1973 and 2010, the share of all jobs requiring postsecondary education and training more than doubled — increasing from 28 percent to 59 percent.<sup>33</sup> The importance of postsecondary education and training is expected only to grow in the future, with roughly 65 percent of all jobs requiring postsecondary education and training by 2020.<sup>34</sup>

Nevertheless, evidence suggests that the United States is losing ground in terms of developing college graduates who are ready to work and prepared to succeed in the modern global economy. Although the United States used to lead the world in the percentage of young adults with postsecondary credentials, it now trails 13 other nations.<sup>35</sup> And despite spending an estimated \$53 billion on workforce training and retaining in 2010, businesses continue to see a substantial gap between graduates' skills and what is required in a knowledge economy.<sup>36</sup> Indeed, according to a 2012 survey by the *The Chronicle of Higher Education*, nearly one-third of employers are dissatisfied with the skills of their workers.<sup>37</sup>

Rising concerns about the affordability of postsecondary education and training are compounding these trends. According to the Consumer Financial Protection Bureau, federal student debt topped \$1 trillion in July, with an additional \$165 billion in private student loans.<sup>38</sup> Aside from mortgages, student loans are now the most widely held debt in the country.<sup>39</sup> Improving affordability will be critical to increasing the number of young adults with degrees and credentials that are valued by employers.



### A CEO Perspective on Postsecondary Education and Training

*“Building skills begins with training — and schools, universities, governments and businesses are not doing enough of it. Until we put the burden on those who train rather than those who need to be trained, we’ll never solve the problem threatening U.S. competitiveness today.”*

— Eric Spiegel, President & CEO, Siemens Corporation  
Vice Chair, Business Roundtable Education and Workforce Committee

### Policy Solutions

The Business Roundtable supports policies that increase the number of U.S. workers who earn credentials (e.g., degrees, workforce certifications and skills assessments) that are valued by employers. The following policies will help address America’s skills and training gap:

**(1) Encourage Completion of Credentials Valued by Employers:** Federal and state policies that target postsecondary education institutions should incentivize completion of credentials valued by employers, rather than rely on access and enrollment metrics as the primary indicators of success. For instance, performance-funding formulas (e.g., formulas that link funding to completion rates) can encourage institutions to adopt strategies that provide additional support to students who are on the path to graduation. Such strategies may include offering courses at times and places that are convenient for students, creating early warning systems to identify and help struggling students, and making better use of summers for coursework and internships sponsored by businesses. At the same time, policymakers can assist by increasing support for community colleges and high-quality certificate programs that efficiently deliver education and training to working students.

**(2) Increase Affordability:** Congress and state policymakers should increase the affordability and productivity of postsecondary education and training by providing incentives to institutions to reduce costs and slow tuition increases while improving quality. Policymakers should target financial aid at the neediest students, particularly those under-represented in higher education. In addition, policymakers should provide incentives for degree completion, extend Pell grants to adult and part-time students and make them available on a year-round basis, and use College Work Study funds to provide students with off-campus internships that build their employment experience and exposure to careers. Finally, policymakers should increase the flexibility of unemployment insurance funds with the goal of enabling adult workers to retrain and upgrade their skills.

**(3) Implement and Expand upon Proven Models and Promising Innovations:**

- **Encourage Competency-Based Learning:** Postsecondary education institutions should provide opportunities for students to demonstrate competencies rather than just credit hours. Students should receive credit for competencies developed through prior learning (e.g., skills learned at work or in the military). Students should also be able to move at their own pace to earn a degree or workforce certification based on demonstrated mastery of skills and knowledge.<sup>40</sup>
- **Leverage Technology:** Postsecondary institutions should increase access to technologies that have the potential to deliver high-quality education and training at a lower cost, such as Massive Open Online Courses. When evaluating the cost effectiveness of these options, institutions should compare them to both more traditional delivery systems and a blended use of both, as transitioning from in-person to an internet-based platform is not a remedy for poor teaching or weak courses.
- **Expand Pathways between Education and the Workplace:** Policymakers, educators and employers should expand apprenticeships; grade 9–14 schools; and other models that provide pathways between high school, postsecondary education and training, and entry-level positions. When the Carl D. Perkins Career and Technical Education Improvement Act is reauthorized, Congress should modernize career and technical education, involving businesses and aligning the skills that are taught with higher education requirements and the actual needs of the labor market.



- **Encourage Skills-Based Assessments and Hiring:** Policymakers, educators and employers should accelerate the development and use of assessments that enable prospective hires and current employees to demonstrate the skills they possess even if they do not have a degree.

**(4) Build More Efficient and Transparent Data Systems:** Federal and state policymakers should encourage postsecondary education and training institutions to provide clear and useful data to parents, students, employers and the public on degree completion rates, tuition, student borrowing, students' ability to repay debt, and job placement and earnings for each degree and certification program. Better data systems are needed to track students as they take courses, earn credentials and obtain employment.

**(5) Improve and Reauthorize the Workforce Investment Act (WIA):** Congress should reauthorize WIA using the Business Roundtable's principles as a foundation to improve the legislation by making it more business and performance driven, reducing bureaucracy, expanding training for in-demand occupations, and increasing innovation.<sup>41</sup>

## VIII. Conclusion

There is a persistent and growing mismatch between the skills that U.S. workers possess and the skills that U.S. businesses need. This mismatch is symptomatic of more fundamental failures within the U.S. education and workforce training systems, including significant gaps among U.S. socioeconomic groups in terms of student achievement and educational attainment, as well as between the United States and its international peers in terms of student performance in mathematics, science and reading. Closing these gaps and improving America's capacity to develop homegrown talent effectively is one of the most important challenges of our time. Larger, faster improvements in education and talent development are not only possible, but also urgent and imperative.

Fortunately, the actions needed to develop a more skilled, prepared workforce are within our reach. *Taking Action on Education and Workforce Preparedness* outlines five such actions:

- (1) Fully adopt and implement the Common Core State Standards;
- (2) Encourage students to study and pursue careers in STEM fields;
- (3) Develop more effective teachers;
- (4) Expand access to high-quality early learning programs; and
- (5) Ensure that postsecondary education and workforce training programs align with employer needs.

Implementing these solutions will not be easy. It will require new ways of thinking about teaching and learning in the 21<sup>st</sup> century. It will require data-driven research and analysis to identify which methods work and why. It will require investments in proven solutions that can deliver scalable results. And perhaps most important, it will require a sustained commitment from leaders at all levels — policymakers, business executives, school administrators, teachers, parents and other stakeholders — to embrace and advance new ideas about what, when, where and how we teach and learn.



The U.S. business community is prepared to play its part. As organizations that compete on a daily basis in the global marketplace, member companies have a constant need for world-class talent. As a primary “customer” of the U.S. talent pipeline, our companies have a responsibility to communicate our needs to the nation’s schools, colleges, universities and workforce training programs. And as employers, parents and concerned citizens, we have a duty to engage in the public debate and step forward with a practical, forward-leaning plan to develop a more skilled, prepared U.S. workforce. We believe that *Taking Action on Education and Workforce Preparedness* is that plan, and we look forward to working with stakeholders who share our vision of a future in which all Americans are ready to work and prepared to succeed in the modern global economy.

## Appendix A: List of Experts Interviewed

The Business Roundtable interviewed the following experts regarding their views on current education and workforce policy issues, their thoughts about priorities that CEOs and the Roundtable should address, and their advice on how America’s business leaders can be most useful in advancing reform. We appreciate their insights and thank each of them for their participation. However, none of the experts reviewed or approved this report, and they are not responsible for the content.

Expert	Organization
Lande Ajose	California Competes
Rob Atkinson	Information Technology & Innovation Foundation
Byron Auguste	McKinsey & Company
Sir Michael Barber	Pearson
Julie Bell	National Conference of State Legislatures
Kate Blosveren	National Association of State Directors of Career Technical Education Consortium
Betsy Brand	American Youth Policy Forum
John Bridgeland	Civic Enterprises
Anthony P. Carnevale	Georgetown University Center on Education and the Workforce
Michael Cohen	Achieve, Inc.
Kristin Conklin	HCM Strategists
Emily DeRocco	E3
Brian Fitzgerald	Business-Higher Education Forum
Kim Green	National Association of State Directors of Career Technical Education Consortium
Kati Haycock	The Education Trust
Nancy Hoffman	Jobs for the Future
Tom Kane	Harvard Kennedy School
Michael Levine	Joan Ganz Cooney Center
Sara Mead	Bellwether Foundation
Jamie Merisotis	Lumina Foundation
Rich Neimand	Neimand Collaborative (for James Heckman, University of Chicago)
Hilary Pennington	The Generations Initiative
Travis Reindl	Bill & Melinda Gates Foundation
Andrew Rotherham	Bellwether Education
Bill Schmidt	Michigan State University
Bob Schwartz	Harvard Graduate School of Education
Louis Soares	Center for American Progress
Peter Stokes	Northeastern University
Tom Vander Ark	Getting Smart
Jane Wellman	National Association of System Heads
Gene Wilhoit	National Center for Innovation in Education, University of Kentucky

## Appendix B: Expert Interviews — Summary of Key Insights and Observations

A number of key insights and observations emerged from the more than 30 interviews that the Business Roundtable conducted with experts in the fields of education and workforce training, including:

- **The time is ripe for CEO leadership.** The debate over U.S. education and workforce training reform is on “business turf,” and as job creators, U.S. employers can help inform the agenda. Employers need to be involved at a higher level than in the past.
- **Disruptive times offer big opportunities for change.** The still-recovering economy and need for fiscal discipline cry out for the business community to provide a vision for what skills will be necessary in the global and digital age. It is time to “reboot.”
- **Diversity should be an American advantage.** By not educating our fastest-growing populations, America is turning what should be a strategic advantage — diversity — into a disadvantage. CEOs should be unequivocal in ensuring that diversity serves America’s competitive interests through education.
- **Technology delivers efficiencies and breakthroughs.** As with the trend toward personalized health care — through which the more a physician knows about you and your dispositions, the more likely it is that you will receive effective treatment and disease prevention — so too can technology help deliver more personalized instruction models for education breakthroughs.
- **Data are key to improvement.** Decisions frequently are misinformed because data are not tracked, and a growing data stockpile has the potential to provide the evidence that will settle many of our current debates.
- **The Common Core State Standards represent a tremendous opportunity.** With the Common Core, America is on the brink of providing the best education students have had in a generation. We are on the edge of doing something profoundly important for our future, and we must succeed.
- **The skills gap is a product of education being stranded from workplace realities.** The skills that employers need must be better linked to what students learn, and to do that, business must provide a clearer picture of change and why it is needed.
- **Feedback and evaluations are vital for teaching to improve.** Adult behavior change is hard and does not happen without feedback. We will not make a difference if we cannot inform teachers whether they are meeting expectations and how they can improve.
- **Early childhood investments require greater focus.** Research makes clear that high-quality early childhood programs have significant positive results. However, expanding access to mediocre programs is expensive and not worth the investment.
- **Higher education reforms need the same Business Roundtable energy that has been committed to K–12 education reform.** U.S. higher education must become more efficient and better at serving the needs of students, and the Business Roundtable can help influence those changes.

## Endnotes

- <sup>1</sup> Business Roundtable (2012). *Workforce Skills Survey: Results Overview*.
- <sup>2</sup> U.S. Bureau of Labor Statistics (2013). “The Employment Situation — August 2013”; and U.S. Bureau of Labor Statistics (2013). “Job Openings and Labor Turnover — June 2013.”
- <sup>3</sup> U.S. Department of Education (2012). *Findings in Brief: Reading and Mathematics 2011*, National Assessment of Educational Progress. Pp. 10–11; U.S. Department of Commerce, Census Bureau (2011). *Current Population Survey (CPS), October 1970 through October 2010*. July 2011. Table 117; Mortenson, Thomas G. (2010). “Family Income and Educational Attainment 1970 to 2009.”
- <sup>4</sup> Organisation for Economic Co-operation and Development (2010). *PISA 2009 Results: Executive Summary*. Figure I, p. 8; TIMSS & PIRLS International Study Center (2012). *TIMSS 2011 International Results in Mathematics*. Chapter 1, Exhibits 1.1 and 1.2, pp. 40–43.
- <sup>5</sup> National Assessment of Educational Progress (2012). *2012 Long-Term Trend Report Card*. Available at <http://nces.ed.gov/nationsreportcard/pubs/main2012/2013456.aspx>.
- <sup>6</sup> See scatterplot comparisons of 2011 performance (NAEP scale scores) and improvement between 2003 and 2011 by state, subject, grade and student group. The Education Trust (2011). *State Academic Performance and Improvement Tool*. Available at [http://www.edtrust.org/naep\\_state\\_scores](http://www.edtrust.org/naep_state_scores).
- <sup>7</sup> Selingo, Jeff, et al. (2013). *Next Generation University Report*. New America Foundation. Available at [http://newamerica.net/publications/policy/the\\_next\\_generation\\_university\\_0](http://newamerica.net/publications/policy/the_next_generation_university_0).
- <sup>8</sup> For a list of experts interviewed, see Appendix A. For a summary of key insights and observations gleaned from the interviews, see Appendix B.
- <sup>9</sup> Alaska, Nebraska, Texas and Virginia have not adopted the Common Core State Standards. Minnesota adopted English language arts but did not adopt the mathematics standards.
- <sup>10</sup> The Business Roundtable and its members are actively engaged in a number of outreach activities to support states’ efforts to implement the Common Core State Standards. These activities include media outreach and work with stakeholders within the advocacy community, including teachers, state policymakers and education experts, among others.
- <sup>11</sup> For additional details, see Business Roundtable (2013). *Principles for Elementary and Secondary Education Act Reauthorization*. July 2013. Available at [http://businessroundtable.org/uploads/studies-reports/downloads/Business\\_Leaders\\_Release\\_Principles\\_for\\_Reauthorizing\\_ESEA.pdf](http://businessroundtable.org/uploads/studies-reports/downloads/Business_Leaders_Release_Principles_for_Reauthorizing_ESEA.pdf).
- <sup>12</sup> Carnevale, Anthony P., Nicole Smith, and Jeff Strohl (2013). *Recovery: Job Growth and Education Requirements through 2020*. Georgetown Public Policy Institute, Center on Education and the Workforce. Available at <http://cew.georgetown.edu/recovery2020>.
- <sup>13</sup> Change the Equation (2012). *STEM Help Wanted*. Vital Signs Report. Available at [http://changetheequation.org/sites/default/files/CTEq\\_VitalSigns\\_Supply%20%282%29.pdf](http://changetheequation.org/sites/default/files/CTEq_VitalSigns_Supply%20%282%29.pdf).
- <sup>14</sup> For students graduating from college in 2013, seven of the top 10 starting salaries were in different fields of engineering, and all 10 were STEM majors or majors that require strong math skills. Available at [http://www.naceweb.org/uploadedFiles/NACEWeb/Research/Salary\\_Survey/Reports/salary-survey-april-2013-executive-summary.pdf](http://www.naceweb.org/uploadedFiles/NACEWeb/Research/Salary_Survey/Reports/salary-survey-april-2013-executive-summary.pdf).
- <sup>15</sup> Business-Higher Education Forum (2011). *Creating the Workforce of the Future: The STEM Interest and Proficiency Challenge*. BHEF Research Brief. August 2011. Available at <http://files.eric.ed.gov/fulltext/ED527256.pdf>.
- <sup>16</sup> National Science Foundation, National Science Board (2012). *Science and Engineering Indicators 2012*. Figure O-9. Available at <http://www.nsf.gov/statistics/seind12/figures.htm>.

<sup>17</sup> Organisation for Economic Co-operation and Development (2010). *PISA 2009 Results: Executive Summary*. Note that rankings are for the 34 countries that are members of the Organisation for Economic Co-operation and Development, not for all 65 countries that participated in PISA 2009.

<sup>18</sup> ACT (2012). "College Readiness Benchmarks by Subject 2012." Available at <http://www.act.org/research/policymakers/cccr12/readiness1.html>.

<sup>19</sup> In an August 2012 survey, approximately 72 percent of Business Roundtable member companies cited improving STEM education as their top priority for education-related philanthropy (106/211 members responded).

<sup>20</sup> See Next Generation Science Standards, released in April 2013. Available at <http://www.nextgenscience.org/next-generation-science-standards>.

<sup>21</sup> McKinsey & Company (2007). *How the World's Best-Performing School Systems Come Out on Top*. September 2007. Available at [http://mckinseysociety.com/downloads/reports/Education/Worlds\\_School\\_Systems\\_Final.pdf](http://mckinseysociety.com/downloads/reports/Education/Worlds_School_Systems_Final.pdf).

<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*

<sup>24</sup> *Ibid.*

<sup>25</sup> For example: "Core academic classes in high-poverty secondary schools are almost twice as likely to have an out-of-field teacher as counterpart classes in low-poverty schools. In high-poverty schools, more than one in every five core classes (21.9 percent) is taught by an out-of-field teacher, compared with one in nine classes or 10.9 percent in low-poverty schools." Almy, Sarah, and Christina Theokas (2010). *Not Prepared for Class: High-Poverty Schools Continue to Have Fewer In-Field Teachers*. The Education Trust. November 2010. Available at <http://www.edtrust.org/sites/edtrust.org/files/publications/files/Not%20Prepared%20for%20Class.pdf>. See also Peske, Heather G. and Kati Haycock (2006). *Teaching Inequality: How Poor and Minority Students Are Shortchanged on Teacher Quality — A Report and Recommendations by the Education Trust*. The Education Trust. June 2006. Available at <http://www.edtrust.org/sites/edtrust.org/files/publications/files/TQReportJune2006.pdf>.

<sup>26</sup> The Pew Charitable Trusts (2010). *The Costs of Disinvestment: Why States Can't Afford to Cut Smart Early Childhood Programs*. April 2010. Available at [http://www.pewtrusts.org/our\\_work\\_report\\_detail.aspx?id=56874](http://www.pewtrusts.org/our_work_report_detail.aspx?id=56874).

<sup>27</sup> Hernandez, Donald J. (2011). *Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation*. Annie E. Casey Foundation. April 2011. P. 3. Available at <http://www.aecf.org/Newsroom/NewsReleases/HTML/2011Releases/~media/Pubs/Topics/Education/Other/DoubleJeopardyHowThirdGradeReadingSkillsandPoverty/DoubleJeopardyReport040511FINAL.pdf>.

<sup>28</sup> U.S. Department of Education, National Center for Education Statistics (2012). *Reading 2011: National Assessment of Educational Progress at Grades 4 and 8*. Figure 3, p. 10, and Figure 8, p. 15. Available at <http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf>.

<sup>29</sup> Barnett, W.S., M.E. Carolan, J. Fitzgerald and J.H. Squires (2012). *The State of Preschool 2012: State Preschool Yearbook*. National Institute for Early Education Research. Available at <http://nieer.org/publications/state-preschool-2012>.

<sup>30</sup> For example, policymakers also should consider interventions, such as home visits, that have research-based positive outcomes. See, for example, Sheldon, Steven B. and Joyce L. Epstein (2004). "Getting Students to School: Using Family and Community Involvement to Reduce Chronic Absenteeism." *The School Community Journal*. Vol. 14. No. 2, pp. 39–56. Available at <http://www.adi.org/journal/fw04/Sheldon%20&%20Epstein.pdf>.

<sup>31</sup> For example, in Florida, an emphasis on early reading that identifies students who need extra help from preschool through 2nd grade, as a way to prevent 3rd grade retention, has proved particularly effective for English language learners. All Florida public school students eligible for free or reduced-price lunch scored well above

average on international and national reading tests. Available at <http://excelined.org/news/florida-leads-international-student-literacy-test/>.

<sup>32</sup> Swail, Watson Scott and Adriane Williams (2005). *Is More Better? The Impact of Postsecondary Education on the Economic and Social Well-Being of American Society*. May 2005. Available at <http://www.educationalpolicy.org/pdf/gates.pdf>.

<sup>33</sup> Carnevale, Anthony P., Nicole Smith, and Jeff Strohl (2013). *Recovery: Job Growth and Education Requirements through 2020*. Georgetown Public Policy Institute, Center on Education and the Workforce. Available at <http://cew.georgetown.edu/recovery2020>.

<sup>34</sup> *Ibid.*

<sup>35</sup> Organisation for Economic Co-operation and Development (2012). *Education at a Glance: OECD Indicators 2012 – Country Note: United States*. September 11, 2012. Chart A1.1. Available at <http://www.oecd.org/education/CN%20-%20United%20States.pdf>.

<sup>36</sup> HR Policy Association (2010). *Educating the 21st Century Workforce: The Views of Chief Human Resource Officers Regarding Workforce Development*. August 25, 2010. Available at <http://www.hrpolicy.org/documents/positions/10-123%20Educating%20the%2021st%20Century%20Workforce.pdf>.

<sup>37</sup> The Chronicle of Higher Education (2012). *The Role of Higher Education in Career Development: Employer Perceptions*. December 2012. Available at <http://chronicle.com/items/biz/pdf/Employers%20Survey.pdf>.

<sup>38</sup> See <http://www.consumerfinance.gov/speeches/student-debt-swells-federal-loans-now-top-a-trillion/>.

<sup>39</sup> Federal Reserve Bank of New York (August 2013). *Quarterly Report on Household Debt and Credit*. Available at [http://www.newyorkfed.org/research/national\\_economy/householdcredit/DistrictReport\\_Q22013.pdf](http://www.newyorkfed.org/research/national_economy/householdcredit/DistrictReport_Q22013.pdf).

<sup>40</sup> For example, accelerated associate degree programs are a good match for the growing number of working adults and displaced workers who want to complete a degree in one year or less.

<sup>41</sup> Business Roundtable (2013). *Reauthorization of the Workforce Investment Act: Key Principles for Reform*. April 2013; and Business Roundtable (2009). *Getting Ahead — Staying Ahead: Helping America’s Workforce Succeed in the 21st Century. Executive Summary*.