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Industry Study**

**Final Report
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The Dwight D. Eisenhower School for National Security and Resource Strategy

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ABSTRACT: U.S. national security is founded upon an economically strong backbone that feeds all aspects of the nation. The spine of this backbone is the K-12 public education system. It is a central source for any hope of continued U.S. growth within the global market. While the U.S. Constitution levies the responsibility to administer and provide for public education to each state, there remains a requirement and need for federal involvement. The argument among educators and politicians, alike, is just how much the federal government should and is legally obligated to direct the K-12 public education system to ensure a quality and equally accessible education for all children regardless of background or socio-economic condition. As such, this paper will explore and discuss five key focus areas (common core curriculum teacher quality/qualifications; science, technology, engineering, and mathematics, socio-economic integration and equitable funding, and preventing gun violence in schools) the authors believe are key drivers for renewed hope for improvements within the U.S. education system. These drivers will lead change in how the states and the federal government act and interact to maintain the U.S.'s leadership position within the world.

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PLACES VISITED

Domestic

American Federation of Teachers (Washington, DC)
 American Council of Education (Washington, DC)
 American Public University (Washington, DC)
 Amidon Elementary School (Washington, DC)
 Boston Latin School (Boston, MA)
 Boston City Public Schools (Boston, MA)
 Century Foundation (Washington DC)
 Chelsea Public Schools (Chelsea, MA)
 Council of Great City Schools (Washington, DC)
 Department of Defense Education Activity (DODEA) (Washington, DC)
 Early Education Initiative, New America Foundation (Washington, DC)
 Early Learning Center (Chelsea, MA)
 Education Testing Service (Washington, DC)
 Einstein Fellows Teacher Panel, (Washington, DC)
 Home School Legal Defense Association (Washington, DC)
 KIPP DC Key Academy, (Washington, DC)
 Maryland State Department of Education (Baltimore, MD)
 Massachusetts Department of Elementary and Secondary Education (Malden, MA)
 Minuteman Regional High School (Lexington, MA)
 Montgomery County Public Schools (Rockville, MD)
 Montgomery County Community College/Montgomery County Career and Postsecondary Partnerships (Rockville, MD)
 Massachusetts Institute of Technology, (Cambridge, MA)
 Mountain View Alternative High School (Centreville, VA)
 National Center on Education and the Economy (Washington, DC)
 National Governors Association (Washington, DC)
 Northern Essex Community College (Lawrence, MA)
 Potomac Job Corps Center (Washington, DC)
 Raytheon Corporation Headquarters (Waltham, MA)
 Smithsonian (Washington, DC)
 Sylvan Learning Center Headquarters (Baltimore, MD)
 The Education Trust (Washington, DC)
 Thomas Jefferson High School for Science and Technology (Alexandria, VA)
 U.S. Department of Education (Washington, DC)
 U.S. House of Representatives, Committee on Education and the Workforce (Washington, DC)
 University of Maryland (College Park, MD)
 Virtual High School Collaborative (Maynard, MA)
 Woodrow Wilson National Fellowship Foundation (Washington, DC)
 World Bank (Washington, DC)



International (By Video Teleconference)

Enfield County School (Enfield, United Kingdom)

Finnish National Board of Education (Helsinki, Finland)

King's College (London, United Kingdom)

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Ontario Ministry of Education (Ontario, Canada)

UK Department for Education (London, United Kingdom)



Introduction

When Americans think about threats to our national security, education is not normally the first thing that comes to mind. Instead, we typically think along the traditional lines of defense threats, diplomatic issues, cyber attacks, and in recent years, our weak economy.¹ What is often forgotten is the impact education plays in mitigating and addressing these threats. In order to secure our vital national interests and continue projecting our ideals across the globe, the U.S. must rely upon a strong military and an influential diplomatic corps. The viability of these assets depends upon the funding that comes from a strong economy. The effects of a weakened economy on our national defense and other federally funded activities are being felt today, more than ever, as budget sequestration takes effect. Underpinning the path to economic recovery is a workforce imbued with the knowledge and skills to outperform our competitor nations in a global market that is increasingly dependent upon technological innovations and advanced thinking.

Today, the U.S. post-secondary education system is widely regarded as the best in the world. Our colleges and universities are among the highest ranked, and we see increasing numbers of international students applying for admission. At the same time, the U.S. K-12 education system is perceived to be struggling to provide a quality education that prepares its students for the competitive global economy. Currently, the U.S. is not among the highest scoring nations on any of the standardized international assessments that target performance in elementary and secondary learning; in fact, our students fail to crack the top five on the most recent tests. Further, studies continually show that the quality of U.S. K-12 education varies widely by school districts' socio-economic status. In short, poor districts tend to perform worse than wealthy districts. Finally, student safety remains a paramount concern, especially in light of recent, tragic events like the Sandy Hook shootings. While many observers dispute the extent and underlying causes of these problems, virtually all policymakers and commentators agree that the U.S. K-12 education system faces serious challenges in both quality and equality, with no clear end in sight.

So, what can our nation do to address these problems? This question raises a broad and complex set of issues and invokes national policies—like social welfare, health care, and immigration—which are far beyond the limited scope of the Education Industry Study. Instead, this paper focuses more narrowly on the federal government's role in K-12 education and what it could do to address five specific challenges: “common core” curriculum standards, teacher quality/qualifications, STEM education, socio-economic integration and equitable funding, and school safety.

As discussed below, the federal government's role in education is strictly limited by law and previous practice, in some cases dating back to the earliest days of our nation. Consequently, state and local officials have often viewed any attempt by the federal government to change their schools as an unwelcome (and potentially unlawful) intrusion on their authority. Over time, the strict division of responsibility between the federal, state, and local authorities has consistently impeded efforts to improve our nation's schools. In fact, it has been one of the most formidable obstacles facing proponents of wide-scale reform. Even so, the paper addresses actions the federal government can and should take, within the constraints of its current authority, to make meaningful changes to improve the U.S. K-12 education system.



The Industry Defined

The Education Industry is extensive and multi-faceted. It includes educational opportunities starting with pre-kindergarten in many states. Nationally, the elementary and secondary education system includes public/charter, Department of Defense, and private schools, home schooling, as well as non-traditional career/vocational training programs. Post-secondary education includes institutions that grant two-year, four-year, and graduate-level degrees, corporate universities, and trade schools. These institutions may be public or private, brick-and-mortar or on-line, for-profit or not-for-profit. A number of supporting activities are also part of the education industry, including textbook publishing, curriculum development, tutor services, testing services, educational software development, internet/computer support, food services, and facilities maintenance. Although these industries are covered by 38 separate North American Industry Classification System (NAICS) codes, this study addresses two industries: public and private K-12 education (NAICS 61111a and 61111b, respectively). The market structure of these industries is defined as an oligopoly with high barriers to entry, is heavily regulated by state, federal, and local laws, and is considered a public good.

The K-12 portion of the industry includes both public and private elementary (grades K-8) and secondary (grades 9-12) schools, which provide education for a community's children and are supported by government and private funds. The primary education activities within the public and private K-12 industry consist of teaching and the administration of basic literacy and numeracy; establishing foundations in science, mathematics, geography, history and social sciences; completing standardized testing to meet regulatory and funding requirements; and providing access to extracurricular activities. According to the Center for Education Reform, there are 98,706 public elementary and secondary schools; 5,714 charter schools; and 28,220 private schools. Total K-12 enrollment is 60.1 million students. That number is expected to increase by .7 percent to over 63.2 million by 2020.² Taken together, the U.S. K-12 education system is a broad enterprise that encompasses public and private agencies that are guided by federal law and administered and governed at the state level. It is a system that supports the U.S. as a global leader on many fronts. It must overcome challenges that if left unchecked by federal leadership and its policies, will ultimately impact the U.S. national security and its ability remain a global superpower.

Current Condition

Background

In 1983, the U.S. Department of Education (ED) released *A Nation at Risk: The Imperative for Educational Reform*, its groundbreaking report on the status of U.S. education. The report concluded that “our supposedly world-class system of education was not keeping pace with the progress of other nations,” citing such challenges as “mediocre to poor performance on international tests, an illiteracy rate of 13 percent among 17-year olds, falling achievement on standardized tests, and a sharp increase in the need for remedial education in colleges.”³ In 2002, President George W. Bush signed the No Child Left Behind Act (NCLB), the largest overhaul of the Elementary and Secondary Education Act (ESEA) since President Lyndon Johnson first signed ESEA in 1965. The ESEA provides funding to primary and secondary education to direct priorities including: equal access to education, high standards and accountability, and close achievement gaps between students. ESEA had been slated for reauthorization in 2007. However,



we are still waiting for Congress to prioritize ESEA reauthorization. The lack of ESEA reauthorization has forced the ED to manage the adverse impact of structural flaws within NCLB through waivers.⁴

In the midst of this federal government regulatory purgatory, there has been a consistent call for improving academic outcomes in education. The Council on Foreign Relations identified “a world-class education system [as being] vital to preserving not just the country’s physical security but also to reinforcing the broader components of American leadership, such as economic dynamism, an informed and active democracy, and a coterie of informed professionals willing and able to live and serve around the world.”⁵ An educated population forms the basis of the economic engine that drives our economy. Without educated citizens, we will not have the necessary skilled work force to continue to produce the innovations that enable the necessary technological advancements required for our economic and military security. William Bennett, a former Secretary of Education, recently stated, “As we continue to think through and debate our GDP, budget deficits and national debt problems, we should be discussing how to improve our students' academic achievement, ... To help solve our nation's fiscal crisis, we must once and for all take seriously the idea that we need to solve our nation's education crisis.”⁶ If the U.S. is to develop a viable strategy for improving educational outcomes, we must first understand our current educational status, what, if any, progress has been made, how prepared today’s students are to work or pursue advanced studies, and the cost of inaction.

Current Educational Status

Just as political inaction belies the importance of education, the statistics and indicators provide conflicting perspectives on the status of U.S. elementary and secondary education. The 2009 Programme for International Student Assessment (PISA), the international standard for educational assessment, ranked U.S. 15-year-old students 31st in reading, 23rd in math and 17th in science.⁷ Perhaps more concerning, the District of Columbia Public School system per pupil finances amounted to \$27,263 in 2010⁸ and was ranked 50th in overall school quality by *Education Week’s* “Quality Counts 2011” survey which measures performance in six areas of education policy and performance.⁹ For only \$7,743 per pupil¹⁰, however, Utah was ranked 41st.¹¹ Consequently, this stark contrast shows that funding alone is not the solution.

Progress in Educational Outcomes

For each statistic that provides cause for concern, there is one that indicates a positive trend. The Trends in Mathematics and Science Study (TIMSS) 2011 is the fifth administration of TIMSS carried out since 1995 by the International Association for the Evaluation of Educational Achievement (IEA). Fourth and eighth graders take the TIMSS test, and results indicate improvement in science and mathematics scores from the 1995 baseline.¹² The high school class of 2010 graduated 78 percent of students in four years, the highest rate since 1974. While this is not an overly impressive statistic, it is significant given the demographic changes of the student body as a result of immigration and the dramatic improvement posted by English Language Learners.¹³ In addition to national statistics, the 2013 Education Industry Seminar witnessed first- hand several programs that overcame diverse challenges systemic to the national educational landscape. Knowledge Is Power Program charter schools and others like it are breaking down barriers to academic achievement for urban youth. Mountain View Alternative High School in Centerville, Virginia and the Potomac Job Corps in Washington D.C. provide high school



dropouts a second chance at educational success. Boston Latin High School in Massachusetts and Thomas Jefferson High School for Science and Technology in Arlington, Virginia challenge gifted students through their robust academic curriculum. Minuteman Career and Technical High School in Massachusetts has a dual purpose to prepare students both academically and with courses focused on variety of highly sought after vocational career fields. The emphasis placed on citizenship and the community service requirement for graduation in many programs visited was encouraging. So there are definite products of excellence within the U.S. to study and appropriately duplicate based on the unique educational challenges throughout the country.

Educational Preparedness

It is widely asserted that tomorrow's economy will require a more educated workforce. Since the publication of *A Nation at Risk*, the percentage of high school graduates pursuing post-secondary education has risen from 53 percent to 70 percent in 2009.¹⁴ It is encouraging that college graduation rates are on the rise. However, those rates are still not growing fast enough to achieve President Obama's goal for the U.S. to have the largest proportion of college graduates in the world by 2020. In our visits with administration officials from community colleges, for-profit institutions, public universities and private universities there was no concern about a shortage of students pursuing higher education. What was concerning at the less selective universities was the need for remedial education. Today, nearly 40 percent of college bound students will require at least one remedial course.¹⁵ This may indicate a seam between high school and college academic standards, lax accountability for educational standards, or simply poor retention. Additionally, although record numbers of high school graduates are pursuing higher education, the completion rate for a full-time student pursuing a bachelor's degree within six years is a lackluster 56 percent and the rate for two-year degrees within three years is less than 30 percent.¹⁶ Academic readiness is probably not the only reason for these unsatisfactory undergraduate completion rates but the data on remediation indicates that it may play a significant role. Reports on skills in the workplace are not much better. A recent survey of 3,500 Human Resources professionals indicated gaps in basic educational and applied skills such as writing English (55 percent), mathematics (38 percent), reading comprehension (31 percent), speaking English (29 percent), critical thinking/problem solving (51 percent), and written communication (41 percent).¹⁷ Certainly, inconsistencies exist between the standards upheld by our public secondary education system and the expectations of skills that a graduate should possess. Projections indicate that 66 percent of job opportunities in 2018 will require at least some post-secondary education.¹⁸ If the U.S. education system is going to meet this demand, we must align standards with expectations on a national level and ensure that students are academically prepared to meet and exceed them.

Cost of Inaction

Public elementary and secondary education is a \$500 billion/year enterprise.¹⁹ Such a large investment in our future human capital demands better systemic results. The demand for better outcomes has led many families to commit significant financial resources to either forego or augment public education. Nearly 10 percent of K-12 students in the U.S. attend private schools,²⁰ and a growing percentage of families choose to home school their children in pursuit of better outcomes.²¹ According to a May 2012 *Education News* article, "The number of primary school kids whose parents choose to forgo traditional [public] education is growing seven times faster than the number of kids enrolling in K-12 every year."²² Additionally, the competitiveness of higher education has created an increasing demand for tutorial services as parents seek to augment



formal instruction with private services to boost academic performance.²³ However, these supplementary expenditures focused on improving results come with an opportunity cost.

The costs of poor performance extend beyond opportunity costs of dollars spent today. According to a recent study by the National Bureau of Economic Research, the imbalance in college completion between rich and poor children has grown by about 50 percent since the late 1980s.²⁴ Failure to complete high school or college comes with lifelong consequences for employment opportunities and earning potential. The unemployment rate for high school dropouts is 12.4 percent, but for college graduates with a bachelor's degree, it is 4.5 percent. The weekly income for each is \$417 and \$1,066, respectively.²⁵ Improving not just access but readiness to succeed in higher education is critical to stemming the now growing inequitable distribution of wealth. This cost of inaction is just too high.

Government Roles

In the U.S. K-12 education system, government plays a role at the federal, state and local levels. This section briefly addresses the government's responsibilities, authorities, and limitations at each level.

Federal Role

The federal government's role in education is limited by the Constitution, which enumerates certain powers at the federal level and—through the Tenth Amendment—reserves the remaining powers, including education, to the states or the people.²⁶ In spite of its limited authority, the federal government has intervened in K-12 education at crucial times during the past several decades. For example, Congress passed the National Defense Education Act (NDEA) in 1958, which greatly expanded the federal government's role in K-12 education by providing funds to improve math, science, and foreign language instruction in public schools.²⁷ The ESEA, signed into law by President Johnson in April 1965 as part of his "War on Poverty," was designed to meet the special needs of educationally deprived children in high concentrations of low-income families. The most far-reaching federal education legislation ever enacted, the ESEA emphasized equal access to education and established high standards and accountability for state and local authorities, although many of these standards were not enforced until the ESEA was reauthorized as the NCLB of 2001.

Finally, the ED was established in 1980 to implement the federal government's evolving role in education.²⁸ The current mission of the ED appears to be both timely and expansive: "To promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access."²⁹ In short, the federal government pursues this mission by providing financial aid, funding research, collecting data, and enforcing federal laws. Despite its significant and increasing involvement, however, the federal government's role in K-12 education remains limited, and it continues to recognize the central role of state and local governments in funding and operating schools.³⁰



State Role

Providing a complete description of the U.S. education system is a challenge, because there is no single national system. Essentially, there are 55 different systems—one for each state, plus the District of Columbia and U.S. territories.³¹ As one would expect, state-level school governance, scope of responsibility, and authority vary greatly across the nation. One common thread is that each state’s laws determine how education is governed and financed within its borders. Typically, state departments of education oversee schooling from early childhood through post-secondary education and technical/community colleges, implementing statewide educational policies and budget priorities established by law. Unlike local boards of education, state-level boards often have no taxation authority, which can reduce their ability to effect significant, systemic changes.³²

The passage of the 2001 NCLB caused a dramatic shift in states’ responsibilities for K-12 education. Until then, state boards had traditionally focused on compliance and regulatory enforcement functions, like setting teacher certification standards and high school graduation requirements, approving textbooks, and overseeing federally funded free or reduced price lunch programs. The NCLB further required state boards to expand the scope of their responsibilities to include the management of schools’ performance.³³ The NCLB’s testing and data collection requirements drove states into areas previously handled at the local level: educational opportunity and quality for all students. This shift has caused friction between state and local authorities over the control of individual schools—traditionally the “hallowed ground” of local school boards.³⁴

Local Role

Local control of education is a long-standing American tradition. School districts in most states act as independent, special-purpose governments, or they may fall under the control of local government officials (e.g., in Maryland). In the U. S., there are 13,506 separate school district governments, 178 state-dependent school systems and 1,330 local-dependent school systems.³⁵ Although the number and type of school districts vary greatly from state to state, one common theme is the role of a local school board in managing the school’s curriculum and finances. The primary source of funding for K-12 education remains local property taxes levied directly by the school district (except in Virginia, where districts have no taxation authority). School board members, whether elected or appointed by a local government executive, allow citizens a direct voice in the education of their communities’ children.

In sum, all three levels of government figure heavily in our K-12 education system, but most observers would concur that local government plays the leading role. This is because local control—most notably, through funding from property tax revenue—strongly affects how well schools perform. While some states like Massachusetts set a “baseline” statewide, per-child funding level, most localities fund schools according to their residents’ income level and willingness to set high tax rates. Of note, ED Title I funds are designed to help schools with high numbers of children from low-income families meet their states’ academic standards.³⁶ Despite these targeted federal funds, a school’s performance is still heavily influenced by the relative affluence of its communities. This disparity in funding gives rise to many issues and underlies several of the challenges discussed below.



Challenges

Although the U.S. K-12 education system confronts numerous challenges, this paper addresses five distinct issues the federal government should address to improve the system.

Common Core State Standards (CCSS)

The CCSS Initiative represents a bold effort to improve the national performance of K-12 public education students by aligning the disparate state curricula under a common set of overarching guidelines. The CCSS Initiative will face a tremendous challenge in the 2014-15 school year when for the first time, states will employ their new assessment benchmarks to assess students against the newly adopted standards. The NCLB version of the 2001 authorization of ESEA sought to improve quality by instituting rigorous accountability provisions. It also brought student achievement to the forefront. The focus on reading and math proficiency within different socio-economic sub-groups will be an enduring legacy in the next chapter of education policy. However, like many large education packages, NCLB suffered from “overly ambitious goals, inadequate funding, incomplete implementation, and ultimately few (if any) penalties for failing to meet objectives.”³⁷ Presently, 34 of 45 states that submitted requests for flexibility have been approved. The parallel to CCSS is that state and local education agencies’ curricula and instruction produce college and career ready high school graduates. So the challenge will be to build the fundamental academic capabilities with K-12 students. This will better ensure CCSS can ultimately be met across our states and throughout the nation. This challenge is for all the stakeholders to focus on developing and maturing CCSS as we continue to reform the U.S. education system.

Teacher Quality and Qualifications

As a statistical outcome, the U.S. historically ranks very high on surveys where innovation is graded. However, in an April 2013 *Education Weekly* article, it was reported the U.S. dropped from 7 to 11 in the 2012 Global Innovation Index.³⁸ While this drop could easily be attributed to the ongoing recession, it may also be an indicator as to the health of the U.S. education system and the ability of its teachers to educate its students. Two of the most important issues in America’s struggle to affect academic success are teacher preparation and performance. According to a recent Organization for Economic Cooperation and Development (OECD) report, of all educational policy factors open to change, “factors to do with teachers and teaching are the most important influences on student learning...broad consensus is that ‘teacher quality’ is the single most important school variable influencing student achievement.”³⁹ This highlights the challenge of attracting a cadre of teachers capable and well prepared to meet the educational demands for the U.S. to remain a leader in the 21st century global economy.

Science, Technology, Engineering, and Mathematics (STEM)

As the existing U.S. STEM workforce continues to age and pursue retirement, too few of today’s students are prepared to perform as future innovators.⁴⁰ Economies that used to be largely regional and labor-intensive have transitioned to a global market that relies increasingly on the country’s intellectual ability rather than the physical might of the past. Addressing STEM challenges is not only critical to maintaining a strong economy, but it is essential to preserving the American way of life and protecting our national security interests.⁴¹ For this country to



successfully compete in the rapid evolving high-tech industries will require an increase in the number of quality students specializing in STEM subjects. Unfortunately, many students currently pursuing post-secondary education are not interested in STEM or change their STEM majors early in their college careers into other fields such as social sciences or finance. Private industry that supports this country's defense industrial base is infinitely aware of the STEM issues and deeply concerned about the lack of available talent to support the national security workforce.⁴² Today's STEM challenges are not new and will require a collaborative approach that involves both public and private entities to identify meaningful solutions.

Socio-economic Integration and Equitable Funding

The idea of socio-economically integrated schools is hardly new. On the one hand, the idea of economically integrated schools runs deep in American history. In 1837, Horace Mann, who famously argued that public education should be “the great equalizer,” wrote that in order to serve that role, public schools had to be “common schools,” by which he meant institutions in which “the children of all classes, rich and poor, should partake as equally as possible in the privileges” of the enterprise.⁴³

Just because an idea is old is not alone proof that it is effective. As discussed below, we have objective data that demonstrates that the idea of socio-economically integrated schools and equitable funding are not just in keeping with American ideals of social justice but also produce positive results. The potential challenge any state faces in enacting such measures is convincing its wealthier citizens that their children will not suffer from socio-economic integration, and that society as a whole will benefit from their tax dollars being spent on students in poorer areas. The data on that are also clear, and positive. As one commentator notes:

Low-income students can benefit in economically mixed schools, and middle-class students are not hurt, for two central reasons. First, the numerical majority sets the tone in a school: the negative effects of concentrated poverty tend to kick in only where a clear majority of students are low income. Second, middle-class children are less affected by school influences (for good or ill) than low-income children.⁴⁴

To continue the progress this country has achieved in socio-economic integration will require additional support at the federal level.

Preventing Gun Violence in Schools

Violence in schools, especially when it involves the use of firearms, is at the forefront of our national conscience. The Sandy Hook shootings in December 2012 (the second-deadliest school shooting in U.S. history, after the Virginia Tech massacre) reinvigorated an ongoing national debate on the question so many have asked: How does the federal government ensure the safety of our nation's most precious asset—our school children? Some attribute the problem to mainstream media sensationalism, while others cite the steady, but low occurrence of school gun violence. To be sure, gun-related incidents make up a small percentage of the violent behavior—like bullying and sexual assault—that endangers students and disrupts their education. In fact, the chances of a child dying in a school-associated homicide in the U.S. are nearly one in 2.7 million,⁴⁵ about the same as the odds of dying from chickenpox.⁴⁶ Despite President Obama's and others' attempts to expand public discourse to the broader issue of school safety, gun violence



remains the lightning rod issue. Political lines have been drawn, and the contentious issue of gun control has emerged as the prevailing national theme. But just as the nation took steps to immunize children and halt the spread of diseases like chickenpox, it is time for the federal government to exercise leadership, making school safety a priority and taking swift action to protect our children from exposure to school gun violence.

Essays on Major Issues - Solving the Challenges

Common Core State Standards (CCSS)

The CCSS Initiative represents a bold effort to improve the national performance of K-12 public education students by aligning the disparate state curricula under a common set of overarching national guidelines. Its espoused mission statement is

[T]o provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers.⁴⁷

The CCSS movement is sponsored by the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) and enjoys the full support of the Obama administration. This essay will briefly cover the background of the CCSS movement and then provide a current assessment of its implementation, followed by an assessment of current federal legislation.

Since the release of “A Nation at Risk: The Imperative for Educational Reform” in 1983, policymakers have grappled with different strategies to reform an education system that was failing to prepare students for a competitive workforce. Since that report, the “accountability movement” has gained prominence as a means to establish a set of accountability standards that represent a common core of knowledge that all citizens would need in order to perform “the high-level tasks required in the twenty-first century workplace.”⁴⁸ The CCSS Initiative is a state-led effort that establishes a single set of clear educational standards in English and mathematics that states voluntarily adopt.

Teachers, researchers and educational experts developed the standards over several years drawing upon various states’ best practices and with the active participation of the NGA. The standards were released in 2010 and were quickly adopted by more than half the states within two weeks. Although the federal government was not involved in the development of the standards, the ED quickly leveraged the states’ efforts with common core and created financial incentives for adoption. As an example, states that adopted the standards received extra points on their Race to the Top application that allocated over \$4 billion dollars to grant winners adopting specific reform measures.

Currently, 45 states, the District of Columbia, four U.S. territories and the Department of Defense Education Activity have adopted the CCSS. As of April 2013, Alaska, Nebraska, Texas, and Virginia have not adopted the common core and in February 2013 the Indiana State Senate passed Bill 193 to repeal the CCSS. Several other states including Alabama, Georgia and South



Dakota also have pending state legislation to repeal their states' inclusion in the initiative. The central complaint among these states and CCSS critics is that the initiative is federal overreach that encroaches upon state's authorities and responsibilities as outlined in the Tenth Amendment to the U.S. Constitution. South Carolina Governor Nikki Haley captures the argument by stating it creates a "one-size fits all" curriculum and that states should not "relinquish control of education to the federal government, [and] neither should [states] cede it to the consensus of other states."⁴⁹

The CCSS as developed by the states constitutes one of the pillars of education reform being sought by both the states and the federal government. College and career ready young adults are now not simply a societal but also an economic imperative. Arguably, the standards should not vary appreciably across state lines. The ED and the current Administration are both re-characterizing the federal role from one of prescription and access to one of guidance and support. Secretary Duncan is implementing an ESEA flexibility regime when the states do not meet the 2014 goal of 100 percent proficiency, or have been unable to meet Annual Yearly Progress targets but have been implementing meaningful reforms in order to do so. This flexibility principle is in line with the collaborative efforts of the NGA and the CCSSO. Federal funds are now being tied to reform programs and state defined progress towards specific goals. The key distinction being that federal funding is no longer solely or even primarily contingent upon test performance. President Obama's plan casts a wide net but decisively moves away from a punitive to an incentive approach and his budget proposal is consistent with a shift to providing the means to achieve the goals.

President Obama's ESEA reauthorization proposal contains many of the Bush Administration's ideas. Included among them, is "calling on all states to adopt state-developed standards in English language arts and mathematics that build toward college- and career-readiness"⁵⁰ The primary manifestations of inadequate secondary education are freshmen requiring remediation upon entry and prospective vocational employees not possessing rudimentary English and math skills necessary to be hired. The president's plan seeks to "follow the lead" of the NGA and CCSSO, and support interstate collaboration in standards development, and intrastate partnerships with the university systems. The 2012 Obama Administration's education budget contained numerous reward structures, competitive grant opportunities, and incentive programs for innovation minded enterprise development. The proposed ESEA and the budget further sought to consolidate funding streams to facilitate expenditures where they are needed, along with the elimination of ineffective programs.

State derived CCSS along with the current and proposed federal incentives for college and career ready curricula together embody an evolved and potentially successful set of strategies for sustained reform. Defining the objectives via standards is the first step in the process. Setting the standards provides the starting point from which to measure both students' and teachers' abilities, in order to further refine curricula and teacher development.

The CCSS initiative will face a tremendous challenge in the 2014-15 school year when for the first time states will employ their new assessment benchmarks to assess students against the newly adopted standards. Kentucky was the first state to agree to the standards in 2010, piloted the implementation process, and provided initial data when they tested students in the 2011-12 school year. Although officials tried to manage expectations and prepare parents, teachers and policymakers for lower scores initially, there was widespread concern when results showed a 30 to 40 point drop in proficiency. The political consequences of decreased student performance may



be too severe for some administrations and this could significantly undermine the overall CCSS initiative.

Teacher Quality and Qualifications

The public debate on the quality of the U.S. education system highlights many factors as indicators of its performance. Ultimately, its success centers on how well educated the citizenry is to meet the workforce and productivity demands of the economy. The Bureau of Labor Statistics reported that by the year 2018, growth within the U.S. job market will be faster among occupations for which postsecondary education is the most significant form of education or training.⁵¹ The center of gravity within that education system is the teacher. More than any other individuals, teachers most affect their students' motivation and performance on a daily basis. In President Obama's March 2009 address to the Hispanic Chamber of Congress, he punctuated the importance of teachers. "From the moment students enter a school, the most important factor in their success is not the color of their skin or the income of their parents, it's the person standing at the front of the classroom. . . America's future depends on its teachers."⁵² Time and again, academic achievement has been traced directly to superior teaching. As such, attracting, educating, and retaining the best talent to teach in the American K-12 system is *the critical factor* in regaining internationally recognized academic excellence for our children.

Education reform must harness America's ability to craft innovative solutions to these daunting challenges. There are several basic strategies that can help the K-12 education system, writ large, to attract and educate the nation's finest students to the teaching profession and propel an American resurgence. Some, not all, of these strategies lend themselves to government policy recommendations; however, the nature of the American system complicates the solution set. Since education is largely a state and local endeavor, federal policies often have limited effect. Though the ED has significant influence through its implementation of the ESEA and programs like Race to the Top, many of the education policy initiatives need to be initiated at the state level by governors and legislatures in order to be effective.

First, the U.S. must raise the standards for acceptance to teacher preparation programs at its colleges and universities. At a minimum, SAT/ACT scores should exceed the national average, and admission requirements should include either a written or practical test (in accordance with international benchmarks) that shows aptitude for pedagogy and an ability to teach. Simply possessing a high school diploma and the ability to pay for a degree must not be enough; in some states it currently is. Both states and the federal government can then craft a collaborative approach with the ED, NGA, university leaders, and the National Board for Professional Teaching Standards (NBPTS) to strengthen college accreditation requirements. These requirements *must* be raised if we hope to enhance the capability of our teachers.

Next, the federal government needs to work with states, the National Education Association, and the American Federation of Teachers to raise standards for teacher licensure while college and university education programs must raise the bar on teacher preparation. According to Jim Thorpe, President of the National Board for Professional Teaching Standards, as of June 2012 almost 100,000 teachers in the U.S., 2.5 percent of all the country's teachers, have already undergone a more grueling and elaborate evaluation process in earning certification from this body. This certification is akin to becoming a board certified pediatrician or accountant.⁵³ Higher licensure standards will necessarily drive improved teacher prep programs, as demand for



licensed teachers will require excellence in academic preparation. If K-12 educators desire to maintain a “professional” status, then their licensure requirements should be stringent and not allow for “emergency” measures to meet shortages. Alternatively, the federal government should mandate a national licensure requirement, similar to the national boards discussed above, to ensure standardization across the country. Either way, strengthened licensing requirements would drive improved collegiate curricula.

Better teacher preparation should include, first and foremost, a requirement for a minimum of an education master’s degree with a concentration in a specified subject area for all K-12 teachers. This philosophy has started to take hold in the U.S. In Ohio, New York and Massachusetts, all elementary and secondary teachers are required to complete their master’s degree in education within five years after signing their first teaching contract.⁵⁴ Furthermore, many of the most highly ranked international education systems impose a similar requirement. Additionally, all curricula should include clinical, in-classroom experience and regular practical exams to evaluate teaching ability and continued potential to succeed. This should not necessarily negate successful alternate teacher-prep programs like Teach for America that have a proven record of success. However, graduates should have to meet and maintain compliance with the improved licensure standards.

Furthermore, the U.S. education system must provide a professional path for America’s teachers that allow them to advance within the teaching ranks vice only entering an administration or leadership track. Many successful international and state systems, like Finland and Maryland, provide a professional ladder that teachers can climb to increasing levels of responsibility, authority, and pay within the classroom. All other professions are marked by this characteristic, and teaching should be no different. Just as trade workers progress from apprentice to master, teachers should progress in their careers. Again, states should work with the federal government in modifying licensure requirements to include progressive levels of teacher qualification. Localities should follow through, assigning appropriate pay increases and incentives as educators progress. The federal government should also create momentum by funding grants and fellowships. Finally, they should create an NBPTS-sanctioned, research-based master’s program in education. Both federal and state policy makers can support this effort directly by funding teacher professional development programs.

Ultimately, the U.S. must find a way to place greater trust in the hands of its educators—trust to understand the educational needs of our students, to develop appropriate curricula and delivery methods, and to conduct periodic internal assessments on the efficacy of their efforts. Though it costs nothing in terms of finances, this is a long-term effort that will likely be born-out as the aforementioned policy prescriptions are implemented. This tenet by no means intends a laissez-faire federal role; it simply suggests that there is a better balance. While a standardized state or national curriculum could be appropriate, its implementation and execution should be left to local educators who understand the human landscape—teachers, parents, and students—in their schools. Such independence of effort will likely not be legislated but rather grown as standards for both educators and students rise and educational goals are fulfilled. Educational independence and a supportive environment will enhance future improvement and innovation by both empowering our teachers and setting higher standards. Most importantly, it will attract new teachers who will thrive in an environment that allows them to engage their students successfully with the full support of their communities and administrations.



All in all, creating federal policy prescriptions to improve our teacher corps is a collaborative effort. Federal, state, and local governments and their attendant administrative bodies will have to work together to develop fiscal and legislative remedies to attract America's best and brightest to teaching. Our undergraduate students and young teachers are supremely talented and dedicated and will be drawn to K-12 education as a career if we can provide the intellectual, motivational, and financial incentives to attract them. Cross-functional engagements between federal, states, colleges, and business will allow a multi-faceted approach to improve teacher education. The NGA could then be the catalyst to propagate the best ideas tested in our 50 educational laboratories. This method will serve as the most prudent means to enact comprehensive change. As witnessed with successful international education systems over a generation, U.S. teacher education can evolve and attract students ready to matriculate in a system focused on creating a truly professional educational cadre capable of teaching a curriculum to meet the global challenges of the 21st century.

Science, Technology, Engineering, and Mathematics (STEM)

Unfortunately, many K-12 students in this country are not adequately prepared for today's high-tech industries or advanced manufacturing opportunities. For example, studies conducted by the National Research Council determined that 75 percent of eighth-graders are not proficient in mathematics.⁵⁵ Another National Research Council study reflects that 60 percent of current students graduating from high school are not prepared for college-level mathematics.⁵⁶ Although this country's existing unemployment rate remains relatively high, the demand for STEM equipped workers surpasses the supply of trained individuals, especially those that can qualify for a security clearance. In fact, the defense industrial base alone will be seeking to replenish tens of thousands of STEM positions in the very near future; however, industry has expressed concern with the lack of innovative young scientists, engineers, and mathematicians available for them to hire.⁵⁷ For this country to remain the most powerful and prosperous nation in the world, will require more Americans of all races and genders excelling in science and engineering.⁵⁸

Results from international test scores (PISA and TIMSS) reflect that American students' literacy in math and science remains lower compared to other advanced countries. These testing results would lead one to assume that the challenges associated with STEM are not going away any time soon. To be successful in addressing our STEM challenges, it will require commitment from leaders at all levels within the public and private sectors. Even in the midst of the current divisive political environment in our nation's capital, there is bipartisan agreement on our impending STEM crisis. In fact, it is difficult to find literature that supports a contrary viewpoint or opinion on this subject. Many fear that this country will fall behind our global competitors as the STEM gap continues to expand.⁵⁹ As the global economy continues to evolve from labor-intensive manufacturing based to knowledge based, the need for STEM equipped applicants will only increase. A study conducted by the Georgetown University Center on Education and the Workforce projected that by the year 2018, eight million jobs in our economy will require a college degree in STEM.⁶⁰ As aging baby-boomers depart the workforce in the near term, the economy and the defense industrial base will need young innovators with a STEM background. Having a young and vibrant STEM educated workforce will be important to sustaining this country's ability to compete in the global economy and support our national security interests. Data supports this notion by demonstrating that well over 50 percent of America's gross domestic product growth over the past 50 years was attributed to advancements in science and



engineering.⁶¹ Just as STEM advancements were significant in expanding our economy in the past, it will inevitably be even more important to advancing our economy in the future.

Historically, the U.S. K-12 curriculum focuses mainly on basic math and English skills with less emphasis on science and little to no attention on technology or engineering topics.⁶² Research has shown that by the time a student reaches the fourth grade, a third of them lose interest in science and by eighth grade half of students view science as irrelevant to their academic future.⁶³ The lack of interest can be attributed to the minimal exposure of STEM subjects during K-8 studies and the failure of informing students of the worthwhile career opportunities associated with a STEM education.⁶⁴ If the U.S. is serious about addressing STEM-related issues and increasing the pipeline, we need to focus efforts at the K-5 level.⁶⁵ Introducing STEM subjects early in a child's education can stimulate their interest in pursuing additional science and advanced math courses in high school and college. Generating the needed interest can be addressed by simply providing greater access to STEM educational resources to all K-5 students.⁶⁶

Recognizing the limited role the federal government has in mandating state requirements involving education policy, it can nonetheless provide a much needed strategic leadership role in addressing STEM issues. This was successfully demonstrated in the late 1950s as a result of the Soviet Union's launch of *Sputnik*, which resulted in national level attention on STEM education. Currently, there are a number of STEM initiatives within the public sector being implemented, as well as in private industry. These ongoing efforts are encouraging in addressing our STEM challenges. However, without a strategic approach that involves specific goals/milestones and performance measures they have little chance for success. For example, in the federal government alone there were 13 separate agencies administering 235 STEM education programs in 2010 at a cost of \$3 billion in obligated funds.⁶⁷ The President's 2013 budget contains the same level of funding and a similar decentralized approach in addressing our STEM challenges. Although the federal government recently reduced the number of federal STEM programs to 209, many of these programs are a duplication of effort with little evidence to support a collaborative or strategic approach. Additionally, there is a clear lack of a defined method of measuring progress or outcomes to justify the expenditures. Lastly, the funding within these 13 federal agencies has not targeted efforts to transform our current STEM education but typically spent on topics or projects relevant to the agency's mission.⁶⁸

This country's ability to maintain a strong economy, preserve our way of life, and protect our national security interests in the future will be determined by our ability to address the existing and forthcoming STEM challenges. A STEM partnership involving both public and private sector entities could serve as the needed platform to unite ongoing initiatives and encourage a collaborative effort that begins to identify solutions that will adequately equip our next generation of innovators. To meet the projected STEM applicants by 2018, the federal government needs to fulfill the strategic leadership role, consolidate existing STEM activities into a single agency, and develop STEM performance measures to justify funding expenditures. In closing, this country cannot afford to waste another decade discussing STEM issues but must act in the near term to implement a collaborative effort such as a STEM partnership to begin identifying much needed solutions.

Socio-economic Integration and Equitable Funding

The U.S. has objective data demonstrating that the ideas of socio-economically integrated



schools are not just in keeping with American ideals of social justice but also produce positive results. In the 1966 Coleman Report, 600,000 students were observed in 4,000 schools.⁶⁹ The report stated that “the social composition of the student body is more highly related to achievement, independent of the student’s own social background, than is any school factor.”^{70 71} The reason for this, it concludes, is “Coleman’s Law”⁷² which states “aspirations and achievement are more firmly rooted for those with strong family backgrounds.”⁷³ Or in other words, culture truly matters. The 1997 Congressional study of 40,000 students found that as the poverty level of schools increase, average achievement level decrease.⁷⁴ A 2010 re-analysis of Coleman, found that “the social class of the school matters even more to student achievement than does the socio- economic status of the family.”^{75 76} Additionally, two other independent 2010 studies come to similar conclusions, including the fact that the improvements in student performance from socio- economic integration came roughly two-thirds from the school, and one-third from living in a better neighborhood.⁷⁷ To avoid upsetting the positive climate in those successful schools, at-risk students should make-up no more than 30 percent of the student body based on research that showed a 30-50 percent occurrence of low-income students in a school resulted in better performance for those students than an admixture of 60 percent or higher.⁷⁸

The Metropolitan Council for Educational Opportunity (METCO) is the second oldest voluntary school desegregation program in the country.⁷⁹ Currently 37 Massachusetts suburban towns participate and provide a public school education for 3,300 Boston minority students.⁸⁰ That is only about 6 percent of the student body but the success and longevity of the program demonstrate that busing from poor failing schools to successful schools in middle-class areas can succeed. There are some issues with METCO that do not make it a perfect model for exporting to the country as a whole in its current form.

Post-World War II, Housing and Urban Development (HUD) built large housing projects for low-income Americans. By the 1960s these had become clusters of anti-social behavior. In the 1990s, the large projects were torn down, and the residents given Section 8 housing vouchers to pay their rent in affordable housing spread-out through the cities and suburbs. Although its impact on academic performance nationwide is unclear,⁸¹ the Section 8 housing voucher program has given millions of children from low-income areas the opportunity to attend higher performing schools in more affluent neighborhoods. And in some school districts, the program is seen as a key ingredient in their recipe for improving educational opportunities for lower-income students. Montgomery County is the top school district in the top state, Maryland. In addition to hosting Section 8 housing, they also adopted a policy in the early 1970s, requiring developers to set-aside between 12 percent and 15 percent of units for low-income and working-class families.⁸² Despite these efforts, and its overall wealth, parts of Montgomery County are low income. To make sure that the needs of their students in these areas are met, it has divided the county into a high performing, more-affluent green zone and a high-needs low-income red zone, where schools receive about \$2,000 more in per-pupil funding.⁸³

In the red zone schools more money was spent per pupil, top teachers were employed, longer days enacted, and smaller class sizes employed. Student performance did improve in the red zone, which is good news, but pales in comparison to the results in the green zone where no additional money was spent per student. There, low-income students attending more-affluent elementary schools (and living in more-affluent neighborhoods) significantly outperformed low-income elementary students who attend higher-poverty schools with state-of-the-art educational



interventions. By the end of elementary school, students living in public housing who attended the most-affluent schools cut their initial, sizable math achievement gap with non-poor students in the district by half. For reading, the gap was cut by one-third. What is particularly remarkable about the comparative success of students in public housing attending Montgomery County's more-affluent schools is they were not besting students stuck in lousy schools but rather students in schools that saw improvement. Indeed, the school system's interventions in its less-affluent red zone schools have been generally effective and widely lauded.⁸⁴

This combined approach had overall remarkable results. In "2003, the gap between white and African American third graders on the Maryland state reading exam was 35 percentage points. By 2008, it had shrunk to 19 points. For Hispanics, the gap narrowed from 43 points to 17 points. The trends in mathematics are similar."⁸⁵

Common sense dictates that it is impractical to bus the majority of low-income children from the inner-cities to the suburbs or resettle them there. Enacting these policies still leaves the public schools of major cities socio-economically the same if somewhat less crowded. The U.S. must find a way to lure its middle-class back to its public schools voluntarily. Magnet and charter schools offer a chance to do so. In the case of cities like Boston where the majority is middle-class, this is easier to do than in a city like Detroit that is majority low-income. In Detroit, or a similar urban area, new residents would need to be attracted to the city and its public schools. This is not an impossible task as Washington, D.C. has demonstrated in the last 15 years.

Boston adopted this approach for its high schools in the last decade. The Boston Latin School, a "magnet school" of national renown alone amongst Boston's public high schools, successfully attracts a diverse student body representative of the city.⁸⁶ Through outreach efforts with community groups, and the internet, the Boston Public School System is attempting to reproduce the same results at its other high schools. A multi-tiered approach to attracting back the middle-class of the city to its schools via tax breaks or other incentives has not been tried in Boston⁸⁷ but should be enacted there and elsewhere to help the magnet schools plan to succeed.

The ability of the federal government to influence equitable funding is limited by the 10th Amendment. The NGA has demonstrated that it can drive education reform within the states with the CCSS. States that have revenue sharing, like Massachusetts and Maryland, score the highest nationally, while the states with the most disparity in education funding score near the bottom. Massachusetts Education Reform Act of 1993 provides a good blueprint that other states can emulate. The act created the Chapter 70 education aid formula. Under this formula each community sets a foundation budget based on its number of students and their demographics. Then the local calculation required by each community is determined by its property tax value and average income of residents. State aid is then provided to ensure that every community meets the minimum requirement for each of its students.

Preventing Gun Violence in Schools

In 1996, the Centers for Disease Control (CDC), with the assistance of the ED and the U.S. Department of Justice, published its first review of violent deaths in our nation's schools, using data collected since 1992. A review of school-associated violent deaths over the past 20 years revealed that from 1992 to 2010, 423 children between the ages of 5 and 18 lost their lives in school homicides.⁸⁸ Although this number is striking, the same document cautions that school



homicides are extremely rare, stating that “over all available survey years, the percentage of youth homicides occurring at school remained at less than 2 percent of the total number of youth homicides, and the percentage of youth suicides occurring at school remained at less than 1 percent of the total number of youth suicides.”⁸⁹ Despite the rarity of school-associated violent homicide, recent tragedies have brought about two opposing positions that highlight our nation’s polarized stance on school gun violence.

In response to the Sandy Hook shootings, National Rifle Association (NRA) CEO Wayne LaPierre stated, “It is now time for the U.S. to assume responsibility for [children’s] safety at school. . . . The only way to stop a monster from killing our kids is to be personally involved and invested in a plan of absolute protection. The only thing that stops a bad guy with a gun is a good guy with a gun.”⁹⁰ LaPierre pledged to harness the NRA’s “knowledge, dedication and resources to develop a model National School Shield Emergency Response Program for every school that wants it. From armed security to building design and access control to information technology, to student and teacher training, this multi-faceted program will be developed by the very best experts in their fields.”⁹¹ In contrast, Mayors Against Illegal Guns (MAIG), a coalition of 784 mayors co-chaired by New York City Mayor Michael Bloomberg, proposed an agenda designed to “make it harder for dangerous people to possess guns and easier for police and prosecutors to crack down on them.”⁹² MAIG’s plan consisted of seven tenets, the first three of which were federal legislative proposals: “require every gun buyer to pass a criminal background check; get high- capacity rifles and ammunition magazines off our streets; and make gun trafficking a federal crime.”⁹³

These competing solutions have been characterized by the media as the gun lobby’s “more-weapons-in-school” and the liberals’ “affront-to-Constitutional-rights” proposals. Of course, the opposing viewpoints are rooted in conflicting interpretations of the Second Amendment. But while this Constitutional discussion is of great consequence to our nation, it detracts from the pressing need to improve the safety of our schoolchildren, and it will delay immediate actions that could prevent future incidents now.

In an effort to exert a degree of leadership on the subject and forge a way ahead, the Obama Administration has recently published its position. The President’s plan to protect our children and our communities by reducing gun violence adopts two ideas from the MAIG: “Closing background check loopholes to keep guns out of dangerous hands;”⁹⁴ and “Banning military-style assault weapons and high-capacity magazines, and taking other common sense steps to reduce gun violence.”⁹⁵ The Administration’s plan also offers two proposals similar to the NRA’s. The first is to employ measures that enhance emergency preparedness, physical security, and emergency response. Second, the plan devotes resources to meet a continuum of specific school and district needs—from physical security measures to armed police.⁹⁶ Finally, the President proposes steps to improve mental health services, ensuring that students and young adults have access to affordable treatment for mental health issues.⁹⁷ Taken together, the NRA, MAIG, and Obama Administration proposals set out a variety of policy options to stimulate and continue a national conversation on the issue of school gun violence.

Dealing with school violence is a difficult policy issue. The continually shifting political environment and unpredictable manner in which our nation develops policy, especially on education matters, makes it so. Today’s political reality does not allow the luxury of coupling gun control and school safety in a single debate. To reach an acceptable outcome, emotionally charged



issues of Constitutional interpretation—such as who can and cannot possess assault weapons, or defining what constitutes a “high-capacity” magazine—should be discussed independently of school violence prevention. Solutions at the national level must be swift and based on compromise. As a result, making gun control an element of school safety legislation does little more than frustrate and prevent progress.

An analogy may be helpful. Preventing gun violence in schools is like preventing fires in schools. As a nation, the U.S. has nearly mastered the challenge of fire prevention. Our schools are equipped with fire extinguishers, smoke alarms, and sprinkler systems to prevent fires at the source. Schools also have trained personnel and systems in place for fire drills and emergency response plans to prevent fire-related deaths. Due these multiple preventative measures, one would be hard pressed to find an example of a fire-related death in a U.S. school in the past several years, if not decades.⁹⁸ Likewise, our nation is a standard-bearer for childhood disease prevention, because we recognized the problem and devoted resources and effort to fix it. Simply put, prevention is powerful because it works.

Among the many policy options offered by the NRA, MAIG, and the Obama Administration to prevent school violence, a few stand out as politically feasible: improving mental health evaluation and treatment, and enhancing emergency preparedness, physical security, and emergency response capabilities. Implementing these proposals would have a direct and immediate impact on many types of school violence, not simply gun-related incidents. Most notably, these options would avoid the possibility of protracted national debate on gun control, because now is not the time to muddy the water with such a debate. It is time to gain traction with actionable policies that will improve school safety in the short and long term. Measured steps like these, established by federal policy, supported by federal resources, and diligently enforced over time—just as the nation successfully did to prevent fires and childhood diseases—are bound to succeed.

Policy Recommendations

Although the federal government’s responsibility and authority for K-12 education is limited, it should vigorously pursue the policy recommendations listed below, in cooperation with state and local authorities, to have a lasting, positive impact on the quality of K-12 education.

Common Core State Standards

Adopt Common Sense Legislation. Congress should adopt the President's plan for reauthorization of the ESEA. This will support interstate collaboration in standards development. Furthermore, it will promote federal incentives to implement for college and career ready curricula. This will be necessary to ensure the U.S. has a workforce ready for the 21st century global economy.

Teacher Quality and Qualifications

Enhance ED and NGA Alignment. The best solutions to the U.S. education dilemma will only be found through a continued and collaborative relationship between the ED and the NGA. Leveraging the national platform available to the ED and the unique solutions provided by NGA membership will amplify the opportunity for solutions individual states can accept.



Create a National Licensure Requirement. A NBPTS should be adopted to ensure standardization across the country.

Enhance the Educator's Professional Rigor. The federal government in concert with the NGA should also create momentum by funding grants and fellowships for approved programs and create an NBPTS-sanctioned, research-based master teacher education and qualification standards.

Leverage States to Comply. To encourage continuity in schools across the U.S., the federal government should leverage states to implement CCSS by creating meaningful financial incentives for those states that embrace and adopt the requisite standards.

Science, Technology, Engineering, and Mathematics (STEM)

Provide Much Needed Strategic Role. To prepare and increase the number of young innovators with a STEM background the federal government should provide the much needed strategic role in addressing this challenge. This includes increasing the existing \$3 billion in federal funding and formalizing a STEM partnership that involves representation from both public and private entities. There is also an urgent need to implement a collaborative initiative to develop a strategic vision or roadmap on how this country is going to address its STEM issues in the near term.

Consolidate STEM Efforts at the Federal Level. The lack of an effective national strategic approach in addressing this country's STEM issues will continue to be a challenge. For example, the ongoing efforts of 13 different federal agencies appear to be ineffective in transforming or improving our STEM education.⁹⁹ Furthermore, state and local governments should not have to work with multiple federal agencies when addressing STEM related topics. The federal government should consolidate all ongoing STEM initiatives into a single agency (*i.e.*, Department of Education) that is responsible for all funding, strategic planning, policy development, and representing federal interest during STEM partnership meetings and activities.

Socio-economic Integration and Equitable Funding

Provide Additional Federal Incentives. States that develop similar programs to METCO should receive additional federal funding from the ED. Programs like these could become part of the "Race to the Top" points system and be included under the "Turning Around the Lowest- Achieving Schools" type programs. In order to incentivize additional parents to voluntarily participate in similar programs, the federal government should offer an additional tax credit for low income families involved in voluntary busing.

Continue Section 8 Housing Vouchers. Due to the overwhelming success of Section 8 housing in addressing this country's socio-economic integration, the federal government should continue funding this program. The ongoing efforts of demolishing housing projects and replacing them with Section 8 vouchers, HUD can remove all families in need of public housing out of decaying urban areas and into thriving suburban school systems.

Expand Existing Child Tax Credit. In order to attract the middle-class families back to the cities and its schools, the federal government should offer an increase in the Child Tax Credit above the current \$1,000. The existing reduction in the credit that occurs between incomes of \$110,000 to \$130,000 should be totally eliminated, as well as the eligibility cap at \$130,000. Additionally,



states could also be incentivized by receiving additional “Race to the Top” points for adopting their own tax incentives that complement the ones implemented by the federal government.

Preventing Gun Violence in Schools

Improve Physical Security, Emergency Preparedness and Response, and Mental Healthcare. Combining school safety with the Constitutional debate over gun control tends to generate emotional responses that discourage political compromise and complicate our ability to identify politically viable solutions. To move forward, the federal government should deliberately decouple the gun control debate from the larger issue of school safety. Instead, it should focus on proposals that are more feasible and will have an immediate impact in improving school safety. As an example, the federal government should direct its resources toward assisting local and state authorities to enhance schools’ emergency preparedness, physical security, and emergency response capabilities.

Outlook and Conclusion

The U.S. education system is crucial to our national strength and security. Yet, headlines and pundits repeatedly tell us the U.S. K-12 education system is falling further and further behind our global peers and potential competitors, often citing the results of recent international assessments. Although public discourse can devolve into hyperbole (as when a former Assistant Secretary of Education equated the 2009 PISA results to Pearl Harbor, *Sputnik*, and an attack by China, rolled into one),¹⁰⁰ U.S. policy makers, educators, and parents cannot afford to panic or act out of fear. They must take a clear-headed, realistic approach to the challenges, while recognizing the many reasons for optimism and opportunities to replicate programs that have proven to be successful. Unfortunately, there is no single solution that can produce the results desired in such a vast and complex landscape. Although public perception of the current system is pessimistic, in recent years the U.S. has placed a renewed focus on improving our K-12 education. Our Industry Study is optimistic that the ongoing dialogue has made the American public and policymakers aware of the challenges and attentive to the work ahead.

This paper considered several challenges and offered realistic, politically feasible recommendations to improve teacher quality, curriculum, socio-economic integration, STEM education, and to prevent gun violence in schools. While the federal government’s direct role may be limited, it can and should encourage these improvements in a number of ways. First, it should continue to incentivize states to adopt CCSS, equitable funding, and socio-economic integration through a combination of “Race to the Top” funds and tax credits to close the achievement gap and accelerate performance. Next, the federal government can implement a national STEM education policy and assist the NGA in setting national standards for teachers entering the system. These initiatives will improve the overall instructional quality and better prepare students for 21st century job opportunities. Finally, a comprehensive national plan to eliminate school violence through enhanced mental health services, physical security, and emergency preparedness, will ensure our K-12 students have the proper environment to learn and grow. The success to all these recommendations will rely on collaboration among stakeholders and the integration of best practices. By addressing these key aspects central to K-12 education, the federal government, in concert with state entities, can continue to improve the U.S. education system.



Endnotes

1. David Ignatius, "Latest national security threat? Our weak economy," *Oregon Live*, May 23, 2010, http://www.oregonlive.com/opinion/index.ssf/2010/05/latest_national_security_threat.html (accessed May 13, 2013).
2. Center for Education Reform, "K-12 Facts," <http://www.edreform.com/2012/04/k-12-facts/> (accessed May 13, 2013).
3. *A nation accountable twenty-five years after A nation at risk*. Washington, D.C.: U.S. Dept. of Education, 2008.
4. Barbara Michelman. "Policy Priorities: The Never-Ending Story of ESEA Reauthorization." Membership, policy, and professional development for educators - ASCD. http://www.ascd.org/publications/newsletters/policy_priorities/vol18/num01/The_Never-Ending_Story_of_ESEA_Reauthorization.aspx (accessed April 28, 2013).
5. Joel I. Klein. "Preface." In *U. S. education reform and national security*. New York, NY: Council on Foreign Relations, Independent Task Force, 2012. ix.
6. William Bennett, "STEM deficiencies cost nation," *Appeal-Democrat*, February 13, 2013, <http://www.appeal-democrat.com/articles/nation-123520-stem-education.html> (accessed April 29, 2013).
7. National Center for Education Statistics, U.S. Department of Education, "Highlights from PISA 2009," December 2010, 5 <http://nces.ed.gov/pubs2011/2011004.pdf> (accessed April 5, 2013).
8. U.S. Department of Commerce. Economics and Statistics Administration. *Public Education Finances: 2010* by Mark Dixon. Washington, DC: GPO, 2012. <http://www2.census.gov/govs/school/10f33pub.pdf> (accessed April 29, 2013).
9. Education Week. "Report Awards State Grades for Education Performance, Policy." *Edweek*. http://www.edweek.org/media/ew/qc/2011/QualityCounts2011_PressRelease.pdf (accessed April 29, 2013).
10. Mark Dixon, *Public Education Finances: 2010* (Washington, DC: U.S. Department of Commerce, 2012). <http://www2.census.gov/govs/school/10f33pub.pdf> (accessed April 29, 2013).
11. Education Week. "Report Awards State Grades for Education Performance, Policy." *Edweek*. http://www.edweek.org/media/ew/qc/2011/QualityCounts2011_PressRelease.pdf (accessed April 29, 2013).
12. National Center for Education Statistics, "TIMSS 2011 Results," December 2012, <http://nces.ed.gov/timss/results11.asp> (accessed 13 April 2013).
13. Lyndsey Layton. "National public high school graduation rate at a four-decade high - Washington Post." Featured Articles From The Washington Post. http://articles.washingtonpost.com/2013-01-22/local/36472838_1_graduation-rate-dropout-rate-



[asian-students](#) (accessed April 28, 2013).

14. National Center for Education Statistics, "Recent high school completers and their enrollment in 2-year and 4-year colleges, by sex: 1960 through 2010." http://nces.ed.gov/programs/digest/d11/tables/dt11_209.asp (accessed April 28, 2013).
15. Paul A. Attewell, David E. Lavin, Thurston Domina, and Tania Levey. "New Evidence On College Remediation." *The Journal of Higher Education* 77, no. 5 (2006): 886-924.
16. National Center for Education Statistics, A-Z, Subject Index, "The Condition of Education - Postsecondary Education - Completions - Postsecondary Graduation Rates - Indicator 45 (2012)," http://nces.ed.gov/programs/coe/indicator_pgr.asp (accessed April 28, 2013).
17. Don Tennant. "U.S. Technology Labor Pool Stagnant Due to Skills Shortage, Study Finds." Business Technology News, Analysis and Context | ITBusinessEdge.com. <http://www.itbusinessedge.com/blogs/from-under-the-rug/u.s.-technology-labor-pool-stagnant-due-to-skills-shortage-study-finds.html> (accessed April 28, 2013).
18. Anthony P. Carnevale, Nichole Smith, and Jeff Strohl. *Help wanted: projections of jobs and education requirements through 2018*. Washington DC: Georgetown University Center on Education and the Workforce, 2010.
19. Mark Dixon, *Public Education Finances: 2010* (Washington, DC: U.S. Department of Commerce, 2012). <http://www2.census.gov/govs/school/10f33pub.pdf> (accessed April 29, 2013).
20. A-Z, Subject Index. "The Condition of Education - Participation in Education - Elementary/Secondary Enrollment - Private School Enrollment - Indicator 5 (2012)." National Center for Education Statistics (NCES) Home Page, a part of the U.S. Department of Education. http://nces.ed.gov/programs/coe/indicator_pri.asp (accessed April 29, 2013).
21. "Fast Facts." National Center for Education Statistics (NCES) Home Page, a part of the U.S. Department of Education. <http://nces.ed.gov/fastfacts/display.asp?id=91> (accessed April 29, 2013).
22. Julia Lawrence, "Number of Homeschoolers Growing Nationwide," Education News, May 21, 2012, <http://www.educationnews.org/parenting/number-of-homeschoolers-growing-nationwide/> (accessed May 14, 2013).
23. "Global Private Tutoring Market to Exceed \$100 Billion by 2017, According to a New Report by Global Industry Analysts, Inc." Press Release Distribution - Submit Press Releases Online - PRWeb. http://www.prweb.com/releases/private_tutoring/online_tutoring_tuitions/prweb8343522.htm (accessed April 29, 2013).
24. Sabrina Tavernise, "Education Gap Grows Between Rich and Poor, Studies Say," *NYTimes.com*, February 9, 2012, <http://www.nytimes.com/2012/02/10/education/education-gap-grows-between-rich-and-poor-studies-show.html?pagewanted=all&r=0> (accessed May 27, 2013).



25. "Education pays." U.S. Bureau of Labor Statistics. http://www.bls.gov/emp/ep_chart_001.htm (accessed April 25, 2013).
26. The Constitution of the United States, National Center for Constitutional Studies (USA, Second Edition, 2010).
27. U.S. Department of Education, "The Federal Role in Education," <http://www2.ed.gov/about/overview/fed/role.html> (accessed May 13, 2013).
28. Ibid.
29. Ibid.
30. Ibid.
31. National Association of State Boards of Education, "State Boards of Education," <http://www.nasbe.org/about-us/state-boards-of-education/> (accessed May 13, 2013).
32. National Association of State Boards of Education, "State Education Governance," April, 2012, <http://www.nasbe.org/wp-content/uploads/State-Education-Governance-A-State-by-State-Chart-of-Essential-Governance-Information.pdf> (accessed May 13, 2013).
33. Patrick J. Murphy and Paul Hill, "The Changing Role of States in Education: The Move from Compliance to Performance Management", *2011 PIE Network Summit Policy Briefs* (Seattle: Center on Reinventing Public Education, November 2008) 1-2.
34. Patrick J. Murphy and Paul Hill, "The Changing Role of States in Education: The Move from Compliance to Performance Management", *2011 PIE Network Summit Policy Briefs* (Seattle: Center on Reinventing Public Education, November 2008) 1-2.
35. The United States Census Bureau Home Page, <http://www.census.gov/govs/www/gid2002.html> (accessed May 9, 2013).
36. The Department of Education Home Page, <http://www2.ed.gov/programs/titleiparta/index.html> (accessed May 9, 2013).
37. Maris A. Vinovskis. "The Past is Prologue? Federal Efforts to Promote Equity and Excellence." *Carrots, Sticks, and the Bully Pulpit: Lessons From a Half-Century of Federal Efforts to Improve America's Schools*. Ed. Frederick M. Hess and Andrew P. Kelly. Cambridge: Harvard Education Press, 2011. 30.
38. Jason Tomassini. "U.S. Drops in Global Innovation Rankings" *Education Week.com*, April 15, 2013, http://blogs.edweek.org/edweek/marketplacek12/2012/07/us_drops_in_global_innovation_rankings.html (accessed May 9, 2013).
39. "Teachers Matter: Attracting, Developing and Retaining Effective Teachers." *Directorate for*



Education, Education and Training Policy Division. September (2011).

40. Anonymous, "Aerospace Industries Association; America Falling Further Behind in STEM Education." *Defense and Aerospace Week*, Feb 17, 2010, 124.
41. References. *Successful STEM Education: A Workshop Summary*. Washington, DC: The National Academies Press, 2011.
42. Anonymous, "Aerospace Industries Association; America Falling Further Behind in STEM Education." *Defense and Aerospace Week*, Feb 17, 2010, 124.
43. Horace Mann, *First Annual Report (1837), The Republic and the School: Horace Mann on the Education of Free Men*, ed. Lawrence Cremin (New York: Teachers College Press, 1957), 23–24, 31–32.
44. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 5.
45. Simone Robers et al., "Indicators of School Crime and Safety: 2011," February 2012, <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2012002>, table 1.1. (accessed April 12, 2013).
46. Figure The Odds, "Risk of Death," FigureTheOdds.Org, <http://figuretheodds.org/risks.html> (accessed April 12, 2013).
47. Mission Statement, www.corestandards.org (accessed May 9, 2013).
48. Thomas H. Gibbs, and Aimee Howley, "World Class Standards and Local Pedagogies: Can We Do Both?" *Thresholds in Education*, ERIC Publications, 51-55.
49. Stephanie Banchemero, "School Standards Pushback" online.wsj.com/article May 8 2012, (accessed April 24, 2013).
50. U.S. Department of Education, "A Blueprint for Reform." Last modified March 2010. http://www2.ed.gov/policy/elsec/leg/blueprint/publication_pg4.html. (accessed April 29, 2013).
51. T. Allen Lacy and Benjamin Wright. "Occupational Employment Projections to 2018," *Monthly Labor Review*, December 22, 2010.
52. Barack H. Obama. "Remarks by the President to the Hispanic Chamber of Commerce on a Complete and Competitive American Education." WhiteHouse.gov http://www.whitehouse.gov/the_press_office/Remarks-of-the-President-to-the-United-States-Hispanic-Chamber-of-Commerce (accessed May 27, 2013).
53. Baker, Al. "To Earn Classroom Certification, More Teaching and Less Testing." *The New York Times* http://www.nytimes.com/2012/07/30/nyregion/with-new-standards-going-beyond-paper-and-pencil-to-license-teachers.html?pagewanted=all&_r=1& (accessed May 17, 2013).



54. Sullivan, Janie. "What States Require a Master's Degree for Teachers." *eHow Money* http://www.ehow.com/list_6325844_states-require-master_s-degree-teachers_.html (accessed May 17, 2012).
55. References. *Successful K-12 STEM Education*, Washington DC: The National Academies Press, December 2010.
56. References. *Successful STEM Education: A Workshop Summary*. Washington, DC: The National Academies Press, 2011.
57. Anonymous, "Aerospace Industries Association; America Falling Further Behind in STEM Education." *Defense and Aerospace Week*, Feb 17, 2010, 124.
58. Dodson, Angela P. 2013. "STEM Education is Important for our Future." *Diverse Issues in Higher Education* 29 (26), 16-17.
59. Anonymous, "Aerospace Industries Association; America Falling Further Behind in STEM Education." *Defense and Aerospace Week*, Feb 17, 2010, 124.
60. Murphy, Tony. 2011. "STEM Education - it's Elementary." *U.S. News & World Report*, 1. <http://search.proquest.com.ezproxy6.ndu.edu/docview/890535794?accountid=12686> (accessed May 9, 2013).
61. References. *Successful STEM Education: A Workshop Summary*. Washington, DC: The National Academies Press, 2011.
62. Tony Murphy. "STEM Education - it's Elementary." *U.S. News & World Report*, 2011, 1.
63. Ibid.
64. Bart A. Aslin. "Blunting Job Losses with STEM Education." *Manufacturing Engineering* 146, no. 1 (2011): 82-84.
65. Tony Murphy. "STEM Education - it's Elementary." *U.S. News & World Report*, 2011, 1.
66. Bart A. Aslin. "Blunting Job Losses with STEM Education." *Manufacturing Engineering* 146, no. 1 (2011): 82-84.
67. Anonymous, "Science, Technology, Engineering, and Mathematics Education – Strategic Planning Needed to Better Manage Overlapping Programs Across Multiple Agencies." United States Accountability Office (GAO-12-108), January 2012, 1-15.
68. Anonymous, "Science, Technology, Engineering, and Mathematics Education – Strategic Planning Needed to Better Manage Overlapping Programs Across Multiple Agencies." United States Accountability Office (GAO-12-108), January 2012, 4.
69. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration,"



- American Educator* (Winter 2012-2013): 2.
70. James S. Coleman et al., *Equality of Educational Opportunity* (Washington, DC: U.S. Department of Health, Education, and Welfare, Office of Education, 1966), 22.
71. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 2.
72. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 5.
73. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 5.
74. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 4.
75. Geoffrey Borman and Maritza Dowling, "Schools and Inequality: A Multilevel Analysis of Coleman's Equality of Educational Opportunity Data," *Teachers College Record* 112, no. 5 (2010): 1201–1246.
76. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 4.
77. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 5.
78. Ibid.
79. The Metropolitan Council for Educational Opportunity Incorporated (METCO), "METCO Home/About Us/History." April 2013, <http://www.metcoinc.org/> (accessed 16 March, 2013).
80. Ibid.
81. Lisa Sanbonmatsu, et al., "New Kids on the Block: Results from the Moving to Opportunity Experiment," *EducationNext*, Fall 2007, 61-62, <http://educationnext.org/new-kids-on-the-block/> (accessed May 16, 2013).
82. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 5.
83. Ibid.
84. Richard D. Kahlenberg, "From All Walks of Life: New Hope for School Integration," *American Educator* (Winter 2012-2013): 4-5.
85. Stacey M. Childress, Denis P. Doyle, and David A. Thomas, *Leading for Equity: The Pursuit*



of Excellence in Montgomery County Public Schools, Cambridge, MA: Harvard Education Press, 2009, 2.

86. Jonathan Mulhern, Assistant Headmaster at Boston Latin School, Question and Answer Session with Eisenhower School Seminar 12, Boston, Massachusetts, 8 April 2013.
87. Mary Skipper, Assistant Superintendent for Networks (High Schools), Question and Answer Session with Eisenhower School Seminar 12, Boston, Massachusetts, 9 April 2013.
88. Simone Robers et al., "Indicators of School Crime and Safety: 2011," February 2012, <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012002>, 6, table 1.1. (accessed April 12, 2013).
89. Ibid.
90. Wayne LaPierre, NRA Press Conference, online transcript presented in Washington, DC, *The New York Times*, December 21, 2012, http://www.nytimes.com/interactive/2012/12/21/.nra-news-conference-transcript.html?_r=0LaPierre, 5, (accessed April 12, 2013).
91. Wayne LaPierre, NRA Press Conference, online transcript presented in Washington, DC, *The New York Times*, December 21, 2012, http://www.nytimes.com/interactive/2012/12/21/.nra-news-conference-transcript.html?_r=0LaPierre, 8, (accessed April 12, 2013).
92. Michael R. Bloomberg et al., Mayors Against Illegal Guns (MAIG) Letter to President Barack Obama, December 19, 2012, www.mayorsagainstillegalguns.org/html/media-center/letter_121912.shtml, (accessed April 12, 2013).
93. Ibid.
94. Barack Obama, *Now is the Time: The President's plan to protect our children and our communities by reduction gun violence*, (Washington, DC: The White House, January 16, 2013), <http://www.whitehouse.gov/issues/preventing-gun-violence>, 2, (accessed April 12, 2013).
95. Ibid.
96. Ibid., 10.
97. Ibid., 13.
98. National Fire Data Center, "School Fires," *Topical Fire Research Series*, Volume 8, Issue 1, August 2007 (Emmitsburg, MD: U.S. Department of Homeland Security, 2007) <http://www.usfa.fema.gov/downloads/pdf/tfrs/v8i1.pdf> (accessed May 13, 2013).
99. Anonymous, "Science, Technology, Engineering, and Mathematics Education – Strategic Planning Needed to Better Manage Overlapping Programs Across Multiple Agencies." United States Accountability Office (GAO-12-108), January 2012, 1-15.
100. Valerie Strauss, "Hysteria over PISA misses the point," *Washington Post*, December 7, 2010 <http://voices.washingtonpost.com/answer-sheet/standardized-tests/hysteria-over-pisa.html> (accessed 13 April 2013).

