

## INDUSTRY STUDIES

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AGRIBUSINESS

AIRCRAFT

BIOTECHNOLOGY

CONSTRUCTION

**EDUCATION**

ELECTRONICS

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SYSTEMS

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MUNITIONS

NEWS MEDIA

SERVICES

SHIP BUILDING

STRATEGIC  
MATERIALS

SPACE

TRANSPORTATION

HOME

INDUSTRY STUDIES  
2000**Education****ABSTRACT**

The performance of the education industry is vital to the national security and economic prosperity of the United States. The advent of the Information Age has significantly increased both the opportunities and the challenges presented to policymakers and educators. An examination of the education industry leads to three principal conclusions. First, high academic standards and effective assessments are vital to promote achievement and measure progress. Second, efforts to recruit, train, and retain high-quality teachers and administrators require special priority. Third, the United States should continue to implement policies that promote equal access and opportunity for all U.S. citizens. The overall assessment of the U.S. education industry at present produces mixed results. Primary and post-secondary schools are above average compared with those of international competitors; middle schools are average; and secondary schools are below average. The performance of the transitional sector (noncollegiate adult education) is marginal, and that of the workplace sector is satisfactory.

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## **PLACES VISITED**

### **Domestic**

American Federation of Teachers, Washington, DC

The Archdiocese of Detroit, Detroit, MI

Boston Private Industry Council, Boston, MA

Boston Renaissance Charter School, Boston, MA

Chelsea Public Schools, Boston, MA

Educational Testing Service, Washington, DC

Focus: HOPE, Detroit, MI

Francis Parker Charter School, Ft. Devens, MA

General Motors University, Detroit, MI

Harvard Graduate School of Education, Cambridge, MA

Maryland State Department of Education, Baltimore, MD

Minuteman School of Applied Arts and Sciences, Lexington, MA

Montgomery County Public Schools, Rockville, MD

Motorola University East, Mansfield, MA

National Alliance of Business, Washington, DC

National Governors' Association, Washington, DC

Northern Essex Community College, Haverhill, MA

Potomac Job Corps Center, Washington, DC

Raytheon Corporation, Lexington, MA

Thomas Jefferson High School, Alexandria, VA

U.S. Department of Education, Washington, DC

U.S. Department of Labor, Washington, DC

U.S. House of Representatives, Committee on Education and the Workforce, Washington, DC

World Bank Human Development Network, Washington, DC

### **International**

DaimlerChrysler, Ulm, Germany

Department for Education and Employment, London, England

Deutsche Bank, Frankfurt, Germany

Enfield County School, Enfield, England

Goethe Gymnasium, Frankfurt, Germany

Ministry of Education, Baden-Wuerttemberg, Germany

Qualifications and Curriculum Authority, London, England

Royal Military College of Science, Shrivenham, England

Training for Skills, Kensington, England

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## **INTRODUCTION**

The education industry is a complex mosaic composed of a vast array of government organizations, educational institutions, businesses, and individuals. Their objectives vary greatly, ranging from academic achievement to workforce preparation and from professional development to personal enrichment. The critical question is, *How well is the education industry of the United States serving the national security interests of the nation?*

Members of the Education Industry Study group visited a diverse assortment of schools, organizations, and businesses where they learned about a number of exciting initiatives and partnerships, as well as about many of the challenges that confront different sectors of the education industry. The seminar also met with federal, state, and local government representatives involved in policy development and resource allocation. International field studies provided team members the opportunity to compare the education industry of the United States with those of England and Germany.

Team members also interviewed a number of distinguished experts in the field of education, including Ms. Anne C. Lewis, Dr. Gerald W. Bracey, Mr. Denis P. Doyle, and Dr. Ted R. Sizer. The seminar also hosted speakers from the American Federation of Teachers, the National Governors' Association, the Educational Testing Service, and the Human Development Network of the World Bank.

In general, the education industry is serving well the national security interests of the United States. Various constituencies and stakeholders, however, give disparate assessments of success to the many elements that comprise this industrial sector. Some U.S. school systems are quite clearly among the best in the world, but access to the topmost-performing institutions is not always equitable. There are discernible differences in performance, for example, among certain rural, suburban, and urban schools. Various models of education reform and the recent push to articulate rigorous standards of learning are beginning to yield improvements, but challenges remain. Moreover, the respective roles, prerogatives, and sources of funding for federal, state, and local levels add to the ongoing debate over the direction of future policy initiatives. In addition, the continued need for some remedial basic level training in corporate universities occasionally competes with the more professional level courses that are a critical fixture of today's sophisticated workplace needs. On balance, however, the education industry meets and often far surpasses the challenge of educating a highly competitive workforce from the large, diverse population that is the United States.

## **THE EDUCATION INDUSTRY DEFINED**

Defining the education industry is a great deal more challenging than it used to be. The distinctions that formerly existed between many of the industry's sectors are increasingly difficult to delineate as collaborations among schools, training programs, and businesses grow and flourish. Technological advances and market forces continue to stimulate change and innovation.

The education industry encompasses an enormous number of diverse institutions, public and private, traditional and noncollegiate. These institutions can be divided into three sectors—schools, transitional organizations, and workplace. The schools sector includes many child care facilities, preschools, elementary and secondary schools, community and junior colleges, colleges, universities, postgraduate and professional schools, postdoctoral study, and research. Technical and vocational schools fall into this category if their primary objective is the attainment of an academic degree.

The school-to-work transitional institutions sector consists of a diverse group of noncollegiate public and private (nonprofit and commercial) organizations that provide a wide range of adult education and training to individuals. This sector includes business and secretarial schools, computer training, professional and management development training, technical and trade schools, cosmetology and barber schools, flight training, apprenticeship training, fine arts schools, sports and recreation instruction, language schools, examination preparation, and tutoring. It also includes programs serving the working poor, those who are unemployed, welfare recipients, the homeless, those who are incarcerated, and adults with a variety of goals, such as attaining a general educational development (GED) certificate, learning to read, gaining acceptance into other training, becoming a citizen, registering to vote, finding employment, advancing in a job, and supporting themselves without public assistance.

The workplace sector consists of education and job training provided by employers. The training generally focuses on job-specific technical skills, management and supervisory skills, computer literacy and applications, product knowledge, interpersonal and team skills, customer service, sales, administrative skills, business practices, occupational safety, quality control, and basic skills (remedial mathematics, language, and reading). Employer-provided funding for tuition reimbursement, payments to outside commercial vendors, and military training are included in this sector. Corporate training that is marketed externally is also part of the transitional sector.

## **CURRENT CONDITION**

By many measures, the U.S. education industry is performing better than at any time in history. High school graduation rates doubled from 1960 to 1996, increasing from

41 percent of the population to 82 percent. During that period, the percentage of the population with a college degree tripled, increasing from 8 to 24 percent.<sup>[i]</sup> At the same time, real per capita disposable income grew 127 percent,<sup>[ii]</sup> and worker productivity increased by 103 percent.<sup>[iii]</sup> Although education was only one of many factors responsible for the growth in U.S. economic prosperity and worker productivity, it certainly played a significant role.<sup>[iv]</sup>

Along with its successes, the education industry faces many challenges. Teacher shortages and lagging student performance plague elementary and secondary schools. Schools, colleges, and universities must cope with rising costs and increasing enrollments. Providing an equal opportunity to all disadvantaged students and adults remains an elusive goal, and many potential gains in workplace productivity go unrealized due to shortages of skilled personnel.<sup>[v]</sup>

Education is the second largest industrial sector in the United States; only the health care sector is larger.<sup>[vi]</sup> Total expenditures for education and training exceeded \$696 billion in 1998–1999.<sup>[vii],[viii]</sup> That figure does not include expenditures for child care schooling, most preschools, transitional commercial enterprises, and government workplace education and training (for which there are no useful data for analysis).

In-depth discussions of three of the most important issues facing the education industry—standards and assessments, teacher quality, and equity in public education—are contained in essays at the end of this chapter.

### ***The Schools Sector***

The performance of the schools sector is mixed overall. Recent studies analyzing the performance of U.S. and international students found that U.S. elementary and post-secondary schools are above average compared with their international competitors, U.S. middle schools are average, and secondary schools are below average.<sup>[ix],[x]</sup> On the brighter side, U.S. labor market and other outcome measurements, such as enrollment rates in higher education, educational attainment, workforce participation, and wages, are among the best in the world.<sup>[xi]</sup>

Recent efforts to improve U.S. secondary schools are showing signs of success.<sup>[xii]</sup> Almost every state has adopted standards and methods for measuring academic achievement. Reading, mathematics, and science scores are up. The number of students taking advanced placement courses is increasing. Scores on the Scholastic Aptitude Test (SAT) and the American College Testing (ACT) Assessment are at their highest level in a quarter century. Finally, more high school graduates than ever before are attending college.

The task of school reform is far from complete, however. In a recent report, the

United States Commission on National Security/21<sup>st</sup> Century stated that “the U.S. must make it a priority of national policy to improve the quality of primary and secondary education, particularly in mathematics and the sciences, to ensure the vitality of all its core institutions.”<sup>[xiii]</sup>

Expenditures for formal education totaled \$618.6 billion in 1998–1999. They have increased significantly faster than student enrollments over the past 10 years, and that trend is likely to continue.<sup>[xiv]</sup><sup>[xv]</sup><sup>[xvi]</sup> Total expenditures increased by roughly 30 percent in constant dollars over the past 10 years, and current forecasts suggest that they will increase more than 4 percent annually each of the next several years.<sup>[xvii]</sup> At the same time, total school enrollment at all levels increased by only 13 percent and seems likely to grow less than 0.5 percent annually over the next 10 years.<sup>[xviii]</sup> As a result, the average cost per student will continue to increase substantially. Concern over rising costs may decline somewhat, however, because the percentage of educational expenditures relative to the nation’s gross domestic product has been constant for the last 10 years at 7.3 percent.<sup>[xix]</sup> Furthermore, the tremendous economic growth of the past decade has eased the burden of increasing educational expenditures significantly.

### ***The Transitional Sector***

The performance of the transitional sector is marginal. The three most significant problems in the transitional sector’s performance are a lack of emphasis on funding for “safety net” programs; difficulty coordinating among local, state, and federal agencies; and insufficient oversight of commercial training organizations.

Despite growing demands as a result of increasing immigration and poverty rates, funding for noncollegiate education and training programs that provide assistance to disadvantaged adults have remained relatively unchanged in recent years.<sup>[xx]</sup> It is important to the social cohesion of the nation that the United States provides an equal opportunity to all its citizens to attain the skills necessary to become productive members of society. Funding for “safety net” programs should not suffer undue neglect because of competing demands for improvement in the schools sector.

Industry experts have expressed the belief that oversight of commercial training institutions is insufficient. They believe that commercial vendors should be required to comply with regulations and be subject to accreditation mechanisms similar to those for collegiate institutions if they or their students receive state or federal funding. Increased oversight is recommended to help ensure that individuals receive high-quality training and government agencies spend tax dollars effectively.

## *The Workplace Sector*

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The performance of the workplace sector is satisfactory. Although the United States spends considerably less than some of its international rivals on workplace training, this sector appears to be meeting most of the business needs of the nation.[\[xxi\]](#)

The most comprehensive and current data available on workplace education and training come from the American Society for Training and Development (ASTD). According to the ASTD, companies estimate that they spent a total of \$70 billion on employee training in 1998.[\[xxii\]](#) The ASTD reports that total workplace training expenditures increased by 20 percent during 1996–1997 and by 14 percent in 1998. Expenditures are expected to increase during the next several years, but not as rapidly.[\[xxiii\]](#)

High-performing firms typically spend significantly more on training and train a larger percentage of their employees than do other, similar organizations.[\[xxiv\]](#) The average percentage of payroll spent on training by all companies with 50 or more employees was 1.8 percent in 1998. High-performing companies spent double that amount—3.6 percent of payroll on training.

There has been a strong relationship between firms' investment in training and their performance in the marketplace in each of the last 3 years. High-performing firms provide their employees with more technical training and less management training than their competitors. High-performing firms also tend to make more use of learning technologies, such as computer-based training, interactive video, multimedia, and intranets. The ASTD predicts that the use of new and emerging learning technologies by high-performing firms will continue to increase.[\[xxv\]](#)

## **CHALLENGES**

Although the results of many reform initiatives are mixed, the United States has improved its educational performance in many important areas. Some states and individual districts and schools have made remarkable progress; however, progress has not been uniform across the country. Enacting policies that improve performance throughout 50 states, thousands of school districts and colleges, and a variety of transitional and workplace programs is a tremendous undertaking. Because of increased immigration, for example, some educators must overcome a lack of English fluency among their students. Similarly, the rise in the number of poor, single-parent families challenges the education industry to overcome the impact of poverty on academic and social development. At the same time the education industry is expected to improve scholastic performance, many students have greater needs.

While each sector of the industry has unique challenges, many share a common problem—the lack of comprehensive data collection and analysis to assess performance, measure progress, determine best practices, and evaluate educational outcomes. Additionally, because of shortfalls in equipment and instructors, every sector of the education industry struggles to meet the demands for information technology training.

There also appears to be a lack of awareness among parents and the public at large regarding the importance of early childhood preparation for education. Only 37 percent of 3-year-olds and 58 percent of 4-year-olds attend preschool.<sup>[xxvi]</sup> Many poor children start behind their peers because of poor parenting, a lack of proper nutrition, and weak basic cognitive skills.

The achievement gap between low-income students and their more affluent counterparts is large and has remained essentially constant over the years. Inequities in funding, bureaucratic inertia, poorly implemented standards and assessments, mediocre teacher quality, and teacher shortages in key subjects hinder improvements in the performance of elementary and secondary schools, particularly in low-income areas. Efforts to recruit, train, and retain high-quality teachers and administrators require special priority.

Rising costs at colleges and universities are another potential problem. Cost increases exceed inflation significantly and are rendering more colleges and universities out of reach of many families.<sup>[xxvii]</sup> A lack of standardized information on the quality and added value of post-secondary education inhibits competition.

## **OUTLOOK**

### ***Short-Term Outlook (2001–2005)***

The U.S. education system is a growth industry. The National Center for Education Statistics forecasts expenditures for public elementary and secondary schools that will increase by about 5 percent annually through 2005.<sup>[xxviii]</sup> Reasons for the anticipated growth in spending include not only increasing enrollment, but also the need to buy and maintain computers, the need to renovate old facilities, and the need to hire more teachers. The emphasis placed on improving education by elected representatives and by the public at large ensures that this growth trend will continue.<sup>[xxix]</sup> The size of the funding increase will depend on continued economic growth and public support for efforts to improve educational outcomes.

Education reforms, particularly standards-based reforms initiated in the 1980s, will continue to drive the education industry, focusing stakeholders' attention on

standards, assessments, and accountability. Some authorities will push for national standards and national teacher certification, but local control of schools will remain a primary tenet of the elementary and secondary education system. Interstate coordination will be essential in establishing comparable standards throughout the country, however. In higher education, increasing costs will accelerate the demand for greater accountability. As a result, more information will be available to prospective students about colleges and universities, and their performance.

Concern about equity in educational access and opportunity will continue to drive the issues of choice and funding. School choice experiments, such as those involving vouchers, charter schools, and magnet schools, will continue to introduce competition into the public schools. These pilot programs will continue to show sporadic success, but there can be no “one size fits all” solution for improving school and student performance. Ensuring equity in funding for schools across the board will remain a “hot button” issue for policymakers.

Schools will increasingly emphasize instruction in information technology, teamwork, and interpersonal skills to meet the needs of the new economy. Additionally, significant efforts are already under way to encourage more U.S. students to study mathematics and the “hard” sciences. The United States is not alone in facing these challenges. Other industrialized countries, such as Germany and the United Kingdom, face similar challenges in persuading students to study mathematics and science.

Transitional institutions, businesses, and taxpayers will continue to bear the burden of giving a second chance to those who fall between the cracks of the formal school system. In addition, businesses will increasingly provide training to upgrade workers’ skills, especially those related to information technology. As businesses make this investment, more and more people will recognize the importance of lifelong learning.

Finally, information technology will become an even more widely used tool of education and will provide more choice in all sectors of the industry. Already, 48 percent of colleges have distance education programs, and 15 percent offer an accredited degree via distance learning. This option will become an increasingly important part of the education industry. [\[xxx\]](#)

### ***Long-Term Outlook (2005–2020)***

The most profound change in the education industry over the next 20 years will originate in the continued development of computer and telecommunication technologies. Teachers will become facilitators rather than primary sources of knowledge as technology enhances classroom instruction. Distance learning will be widespread. By 2020, some elementary and secondary school students may not go to

classrooms; instead, they may learn largely via a network, which may increase the trend toward home schooling. The U.S. education industry will respond to this technological change; market and social forces will provide the necessary impetus.

Although masked by today's strong economy, current failings in education portend possible long-term problems for U.S. global competitiveness. For example, in a National Association of Manufacturers' survey of workplace professionals, more than half of the respondents reported shortcomings in basic mathematics, writing, and comprehension skills.[xxxix] This problem will drive businesses to get more involved in education issues. Driven by the need for a well educated pool of employees, businesses will increase their support of schools through partnerships and school-friendly employee policies that allow workers time to participate in adult education. The role of business in education will continue to develop and expand. Private sector involvement should result in some improvement in basic competencies.

How well the education industry responds to the projected teacher shortage in the long term will depend on the success of efforts to raise the status of teachers in society. The economy must do sufficiently well for the public to support the use of more tax dollars to recruit and retain more teachers.

## **GOVERNMENT GOALS AND ROLE**

To understand the role of government in education, it is important to recognize two fundamental points. First, as implied in the U.S. Constitution, state and local governments have historically assumed control of and primary responsibility for education. Meanwhile, the federal government's role has been a kind of "emergency response system," a means of filling gaps in state and local support when critical national needs arise.[xxxix] The increased demands of the global Information Age require closer coordination and cooperation among policymakers at all levels.

Second, the distinction between the elements of the U.S. education system and the global economy are blurring. This factor is significant in view of one study's finding that only 30 percent of employers feel that the schools are providing the potential workforce with the skills necessary to compete in the workplace.[xxxix] Thus, increased coordination with industry must take place in order to provide a quality educational system capable of ensuring that the United States remains economically competitive in the rapidly expanding global marketplace.

### ***Federal***

The federal government's role remains critically important to the success of the U.S. education system in a variety of areas. It provides leadership, trying to establish equity in public education and to ensure access to information technology. The federal government must also act in the area of unfunded mandates. Unless the Administration and Congress work together to ensure adequate funding of federal mandates, school districts will continue to face funding problems. Finally, the federal government must increase efforts to ensure that the workforce is sufficiently prepared to meet national security requirements by encouraging partnerships with industry and by continuing to support programs such as those authorized by the Workforce Investment Act of 1998—legislation that has markedly increased access to training and employment opportunities.

Most important, the national leadership, both the executive and legislative branches, must establish education as a top priority and relate the role of the education system to national security. Although there is a need to increase the federal government's investment in education, existing federal programs such as the Class Size Reduction Initiative; the Small, Safe and Successful High Schools Program; and Title I Grants to Local Educational Agencies will help improve student achievement.[\[xxxiv\]](#)

### *State*

The various state governments play a significant role in many areas, including establishing teacher qualifications, recruiting teachers, and setting student performance standards. States must provide incentives to encourage the recruitment of certified teachers and pursue programs designed to increase the supply of teachers in school districts that are perennially challenged in recruiting sufficient numbers of educators. In addition, states should provide incentives such as hiring bonuses and loan relief programs for college graduates who are willing to teach in these districts.

State governments must continue to assume a critical role in ensuring an equal distribution of funding across school districts. The fact that the disparity in funding per student between wealthier and poorer school districts averaged 24 percent before the initiation of state and federal assistance indicated the importance of instituting equality measures.[\[xxxv\]](#) State and federal funding assistance has reduced the disparity to approximately 15 percent.[\[xxxvi\]](#) While inequity in funding is not the only reason for students' performing poorly, it is a major factor.

### *Local*

Local communities and school boards are in the best position to institute educational

reforms and policies to improve their local school systems. In addition to the traditional roles of local school boards in developing curriculum, hiring and firing teachers, and administering the school system, local school districts must increase their efforts to involve parents, develop partnerships with local industries, and work with local communities. Clearly, a high level of cooperation and coordination among all stakeholders is essential.

Government at the local level should determine the role of community-based schools. Although schools have always served as a gathering place for community organizations, schools are now actively serving as after-school refuges, adult continuing education centers, and community centers.

## **CONCLUSION**

How well is the education industry of the United States serving the national security interests of the nation? Some believe that schools in the United States are the best in the world; others contend that the U.S. education industry does not provide the skills that an information-based economy needs to retain its competitive advantage. Some believe that primary control of education policy should remain at state and local levels; others believe that the federal government should take a greater leadership role in crafting, coordinating, and resourcing a comprehensive national strategy for evaluating and improving the productivity of U.S. education. Some believe that choice undermines the U.S. public education system; others believe that choice breeds competition, innovation, access, and opportunity. There is some merit in all of these diverse perspectives.

People from all corners of the world still seek entry to the United States to pursue education and work. This diversity both strengthens the national fabric and presents significant challenges to educators and employers, who must struggle with the demands of integrating vast numbers of immigrants into schools and workplaces. Meanwhile, information technology demands change every 18 months. Some schools and districts are on the forefront of the information technology revolution, while others have only limited access. These deficiencies remain acute in some locales, particularly in poor urban and rural areas. Despite attempts to correct these failings through additional funding, particularly federal funding, some schools and students are still ill-prepared for the challenges of the 21<sup>st</sup> century.

The predominant role of state and local governance in U.S. public education remains appropriate for a nation as large and diverse as the United States. The federal government should take a leadership role, however, in developing a national vision

and goals for education; improving coordination among the federal, state, and local agencies involved in schools and the workplace; and funding programs that promote high achievement, access, opportunity, and equity for all students. Despite the significant challenges confronting the education industry, it seems clear that all stakeholders are committed to the premise that high educational achievement is vital for the national security and economic well-being of the nation.

## **ESSAYS ON MAJOR ISSUES**

The following essays explore in greater depth some of the most challenging and complex issues facing the education industry: standards and assessments, teacher quality, and equity in public education.

### **STANDARDS AND ASSESSMENTS: THE DEBATE RAGES**

America will fail to meet the competitive challenge if high standards are not set and met. It's that simple. The rest—all the hype and hoopla, all the talk about [education] reform—will be for naught if standards are not raised.[\[xxxvii\]](#)

#### ***The Challenge***

Since the early 1980s, the United States has engaged in a sustained period of standards-based education reform. Today, virtually all states have or are in the process of developing standards for student learning and have made a commitment to aligning quality assessments to their standards. Most states are also taking the next step and using the achievement of standards as a basis for holding schools and districts accountable for student performance. Additionally, many states have implemented statewide assessments referred to as “high-stakes testing” to determine students’ promotion, retention, and graduation.

Although most educational policymakers and business people support standards-based reform and the associated accountability movement, some educators and parents do not. Noted research psychologist Gerald Bracey writes, “reaction and resistance to the growing [testing] madness are weak and sporadic, but perhaps building. Students in a few states have started refusing to take the tests, teachers have

refused to give them, and some parents have started refusing to send their children to school on testing day.”<sup>[xxxviii]</sup> However, a 1999 poll on the public’s attitudes toward public education does not reveal widespread dissatisfaction with current standards.<sup>[xxxix]</sup> Rather, 57 percent of those polled believe current achievement standards in the public schools are about right. Only 33 percent of respondents believe that they are too low.

So, what is the truth? The truth is that all stakeholders—teachers, parents, policymakers, and business leaders—are committed to high standards and some accountability for the education of our future leaders. There are many concerns regarding the use and implementation of standards and assessments, however.

### *Questions for Debate*

*Should there be national standards?* In a society that is becoming increasingly mobile, how is it possible to ensure some semblance of standardization across all states and school districts? Mobility is a permanent challenge to public education. In Texas, 68 percent of fifth graders in the 1995–1996 school year had changed schools at least once, and in Chicago, 53 percent had changed schools within a 4-year period. These statistics indicate the scope of student mobility.<sup>[xl]</sup> Combining this mobility with the fact that many of the most mobile students are also new immigrants with language and cultural obstacles to overcome further complicates the difficulties involved in establishing standards and assessments at the district, state, or national level. On the other hand, there appears to be little disagreement among educational policymakers about the need for standards. Some suggest that de facto national standards already exist as states have borrowed from one another in creating their own individual standards.

*Who should decide what the standards are going to be? Parents? Teachers? State Boards of Education?* Gaining a consensus opinion from all stakeholders remains problematic. Various stakeholders disagree on what and how to measure, as well as on the meaningfulness of these measures for both students and teachers. Also, access to public education in the United States is not equal in either quality or resource allocation, and federal efforts to rectify this deficiency have fallen short of the mark. The absence of a level playing field makes it difficult to establish universal standards.

*Are current curricula aligned with the standards?* Many stakeholders in the educational arena believe that standards and assessments are not well aligned. They note that many schools feel the need to “teach to the test,” because the test material falls outside their normal academic curricula. Why? Poorly conceived and articulated in some cases, standards may be too general to have any appreciable effect on the curricula being taught to students. Standards may also be set unreasonably high or fail to account for the challenges of mobility, class size, resource deficiencies, and available class time.

*Do assessments align with the standards and curricula?* Some stakeholders believe that the rush to infuse high standards and accountability into the schools has created a mismatch between what proponents of the standards-based movement say they want to achieve—greater knowledge and more sophisticated ways of using the knowledge—and the tests they are using. Although researchers are scrambling to meet the demand for reliable assessments that accurately determine students' mastery of content, they have not yet succeeded.<sup>[xli]</sup> Many educators point to performance-based tests and portfolios as useful tools for matching standards and curricula to assessments. Unfortunately, these tools are expensive, take a long time to develop, and are difficult to evaluate. Consequently, some states and districts simply modify or customize existing standardized tests that are often not well aligned with the new, higher standards and curricula.

*What should the United States do?* The challenges of creating and implementing high standards and effective assessment tools remain significant. Education's importance to the national strategy and the international competitiveness of the United States demands a renewed effort to forge a consensus among the various stakeholders. In the same vein, the nation needs to ensure that standards are both high and achievable by all. Standards and assessments are not a magic elixir for what ails U.S. education. High standards and performance-based assessments can be useful learning tools, but only if they improve a student's ability to process information and integrate that information with previous experience to achieve mastery and understanding. As noted educator Ted Sizer observes, "Knowing stuff is nice ... Being able to use that stuff makes sense ... Being disposed to use it always, as a matter of habit, is the brass ring, the ultimate standard."<sup>[xlii]</sup>

## TEACHER QUALITY

### *The Challenge*

The United States is currently facing a teacher shortage, and the problem is projected to increase substantially over the next 10 years. It is estimated that the nation will need an additional 2 million teachers before the end of the decade.<sup>[xliii]</sup> The widespread use of uncertified and emergency-certified teachers compounds the challenge of providing high-quality teachers to all U.S. students.

Two basic fundamental problems affect the teacher shortage. First, while the nation is producing a sufficient number of teaching school graduates, many—perhaps as many as 40 percent—do not enter the teaching profession.<sup>[xliv]</sup> In high-demand fields, such as science and mathematics, other career opportunities lure many potential teachers away from teaching and into higher paying careers. The gap

between the average teacher's salary and that of other college graduates (ages 22–28 years) is almost \$8,000 per year.[\[xlv\]](#) The gap widens as teachers' grow older, reaching approximately \$25,000 between the ages of 44 and 50 years.[\[xlvi\]](#)

The second fundamental problem is the poor retention of teachers. One estimate indicates that about 25 percent of teacher education graduates leave the profession after their first 3 years.[\[xlvii\]](#) One reason is a growing dissatisfaction with working conditions, including the lack of support from school administrators, student discipline problems, and the lack of teacher influence in the decision-making process.

Although the shortage of teachers is significant, the quality of the existing teaching force is equally important. Experts argue that the key to improving educational outcomes lies in ensuring the quality of the teachers. One study found that students who had highly qualified teachers 3 years in a row scored higher on standardized tests than students with less qualified teachers.[\[xlviii\]](#)

Some alarming statistics highlight the growing problem of teacher quality. According to Secretary of Education Richard W. Riley, more than 25 percent of new teachers have not fully met appropriate state licensing standards and almost 28 percent do not have majors or minors in the subjects that they teach.[\[xlix\]](#) Similarly, the National Commission on Teaching and America's Future reports that 56 percent of high school students taking physical science courses and 27 percent of those taking mathematics courses have teachers who do not have backgrounds in those fields.[\[l\]](#)

The 1994 National Assessment of Educational Progress (NAEP) report indicates that students in states with the highest numbers of highly qualified high school teachers scored higher than did those in states that had a higher percentage of unlicensed or substandard teachers.[\[li\]](#) Also known as the "nation's report card," the NAEP survey focuses on the academic performance of fourth, eighth, and twelfth graders in a range of subjects. The 1994 NAEP report highlights Louisiana, which scored at the bottom on NAEP tests. In Louisiana, 46 percent of new teachers were either unlicensed or had substandard licenses.[\[lii\]](#) These statistics clearly indicate the importance of certified teachers in increasing student achievement.

### *Questions for Debate*

*What is being done today?* The performance of states in hiring high-quality teachers is mixed. Thirty-nine states require new teachers to pass a basic skills test. Although many states set the qualification standard at a high level, other teacher qualification tests barely measure skills at the equivalent level of a 10<sup>th</sup> grade education.[\[liii\]](#) In addition, 36 states provide loopholes; therefore, even if prospective teachers fail the qualifying test, they will be allowed to teach.[\[liiv\]](#)

*Education Week's* Quality 2000 report indicates a growing disparity in teacher requirements for high school, middle school, and elementary school teaching.<sup>[lv]</sup> The report indicates that 39 states require a major, minor, or equivalent number of credits in a specific subject area for high school teachers and 29 states require new teachers to pass subject matter tests.<sup>[lvi]</sup> On the other hand, only 9 states require middle school teachers to pass a test in their academic discipline. Also, a National Center for Education Statistics study shows that 34 percent of high school teachers do not have an undergraduate or graduate degree in an academic field, while 56 percent of middle school teachers and 78 percent of elementary school teachers do not have a major in an academic field.<sup>[lvii]</sup>

*What should the United States do in the future?* In considering possible solutions to problems in the education industry, it is important to understand, first, that the “one size fits all” approach will not work because of the diversity of the problem and the primacy of local control. Second, solving the quality issue requires solving the overall teacher shortage problem. By increasing the supply of high-quality teachers capable of meeting certification standards, school districts will be able to fill their teaching positions without resorting to a reduction in standards. High-quality teachers who meet strong standards are critical to increasing the academic performance of students.

Several education experts have made recommendations about ways to reduce the number of uncertified teachers. Anne Lewis argues that, “when standards for entering teaching have been raised in the past, accompanied by salary increases, the pool of prospective teachers has actually grown larger.”<sup>[lviii]</sup> Others, such as Linda Darling–Hammond argue that, while higher standards are important, other actions are also necessary (e.g., licensing reciprocity between states and license issuance to out-of-state candidates who are nationally certified).<sup>[lix]</sup> She also suggests the establishment of service scholarship programs, the expansion of teacher education programs, and the creation of programs to reduce attrition rates.

There have also been numerous recommendations for reducing the overall teacher shortage, including increasing pay and improving work conditions. For example, 27 states have scholarship or loan forgiveness programs for potential teachers.<sup>[lx]</sup> Another approach focuses on alternate routes to certification. These programs target individuals who already have a bachelor’s degree, but have not completed any course work in education. Forty states currently have alternate route programs.<sup>[lxi]</sup>

As stated earlier, the interdependence of the quality issue with the teacher shortage crisis is clear. Still, not all the experts agree on what is needed to ensure a high-quality education system. What defines a high-quality teacher? Is subject matter expertise the prime criterion for high-quality teaching, or is skill in classroom management more important? Likewise, do licensing criteria based solely on tests permit a good assessment of teacher performance? These questions and others are worthy of debate. The answer seems to lie somewhere in the middle ground, with subject matter expertise and classroom management each playing a key role in improving teacher quality. Thus, the debate must continue. The federal government,

starting with the President, must take the lead in ensuring that education rises to the top of the national agenda.

One fact remains clear in terms of teacher quality. High-quality teachers do make a difference. Only by ensuring that all students have high-quality teachers can we make certain that our children will be adequately prepared for the challenges of the 21<sup>st</sup> century.

## **EQUITY IN PUBLIC EDUCATION**

### *The Challenge*

Improving educational outcomes for low-performing schools in high-poverty areas is one of the most important challenges facing the U.S. education system. The amount that the nation spends per student on education is among the highest in the world, but educational assessments continue to show a large disparity in achievement between the rich and the poor, as well as between whites and minorities.

The United States is leaving a sizable percentage of its poor and minority children without the education that they need to succeed in society. The percentage of students who achieve “basic skill” levels in reading, mathematics, and science in high-poverty urban schools (29 percent) is less than one-half that of students in suburban schools (65 percent) overall.<sup>[lxii]</sup> Nationally, the U.S. high school dropout rate is 11 percent, but in low-income households, the rate is twice as high.<sup>[lxiii]</sup>

In recent years, federal and state governments have done a better job providing additional funding to low-performing schools in high-poverty areas, but funding gaps remain a major problem. More money alone is not the answer, but it is necessary. High-poverty school districts confront many challenges—difficulty recruiting and retaining highly qualified teachers and administrators, low student expectations, substandard curricula, school violence, and poor facilities. Negative social influences at home and in local communities contribute significantly to the difficulty of implementing effective programs. There is no “silver bullet” solution. Efforts to improve these schools must be systemic. The good news is that there are many successful programs. The government needs to ensure that these success stories become widespread and commonplace throughout the United States.

### *Questions for Debate*

*What is being done today?* The federal government plays an essential role in promoting equity in public education. Title I of the Elementary and Secondary Education Act is the federal government's single largest investment in public schools. It provides almost \$7 billion to school systems across the country to improve education for children at risk of school failure. It reaches more than 6 million children annually, primarily in the early elementary grades. [lxiv]

Prior to 1994, the federal government did not hold recipients accountable for educational outcomes, but Title I underwent a major revision in 1994. Title I now requires recipients to report student performance. Schools risk losing their funding if student performance does not improve. The Improving America's Schools Act, also passed in 1994, promotes state and local school reform efforts based on challenging academic standards and effective assessments that are linked to the new standards. [lxv]

The Department of Education recently released a report on nine high-poverty area elementary schools that have achieved impressive academic results. Although each of these nine schools created its own unique formula for success, researchers identified seven common strategies that contributed to their success:

1. Set an important, but attainable first goal.
2. Increase the quantity and quality of time spent on instructional leadership.
3. Align instruction to state standards and assessments.
4. Get the resources and training necessary for teacher improvement.
5. Create opportunities for teachers to work, plan, and learn together.
6. Win the confidence and respect of the parents.
7. Create additional time for instruction.

All of the high-poverty area schools in the study also reported that Title I funding significantly assisted their reform efforts.

State and local governments are using a variety of programs to improve low-performing schools. Currently, 49 states have established content standards for all children that provide the basis for evaluating their school performance. States and local governments are working to align standards, curricula, and assessments throughout their school systems. Some states (e.g., Maryland) have directed considerable state funding to low-income districts to offset local shortfalls; however, political pressure from local governments and a lack of state money have left considerable gaps in funding per student in other states.

Several states or school districts have stepped in to reconstitute schools that have remained low-performing even after constructive interventions—usually only after a period of probation and the provision of additional resources to the school. If

enacted, recent federal proposals would require states to publicly identify their low-performing schools and provide them assistance to improve. If progress is unsatisfactory, the proposal would require districts to reconstitute the school.

Some states have been examining alternatives to the current public school system and are experimenting with charter school programs. The drive behind this effort is to give parents greater choice, thus encouraging competition and improving results. Using public money, private organizations operate these charter schools with less regulation. Their results have been mixed. Some states are trying to use voucher systems to increase competition. Vouchers would allow students to pay for at least part of their private school tuition with public money. The Constitution prohibits the use of most public money for religious-based private schools, however.

*What should the United States do in the future?* Public education in the United States has a long history of local governance. A significantly greater federal controlling role would face substantial opposition. That said, the federal government has helped improve low-performing schools in high-poverty areas while leaving local and state governments primarily in control of policy and responsible for funding. It can do more with additional targeted funding and effective accountability measures. Special emphasis should go toward improving instructional leadership and teacher development. The federal government can also play a greater role in supporting research and disseminating information on best practices.

High-poverty school districts have 15 percent less funding per student on the average than low-poverty districts.<sup>[lxvi]</sup> Additional resources are still needed to provide more and better teachers. Title I could be an effective vehicle to address this shortfall.

The federal government can also provide substantial assistance to states and school districts by better coordinating and sharing the efforts of states and districts. The Department of Education has already started this effort—sharing success stories with detailed research documenting the process and providing results via its Web site. Highlighting successful improvements of low-performing schools with similar demographics may provide both the motivation and the methodology for instructional staff to fix their failing school.

Improving performance in low-performing schools in high-poverty areas is a matter of national security. Undereducated children and adults often carry with them significant economic and social burdens. State and local governments and other stakeholders should continue to have control of educating their students, but the federal government has an important leadership role as financier, facilitator, and researcher to ensure that no children are without hope for a better future.

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