A Review of the 1996 National Education Summit
“We could debate ideas for days and weeks. Instead, let’s act. Let’s take risks. Let’s start to make change happen. There has to be a starting point for change, and here it is.”

Louis V. Gerstner, Jr.
Chairman and CEO
IBM Corporation
There is in America today a sense of urgency about educational reform. Students in many other countries outperform Americans in tests of basic skills. Our schools and students will not meet any of the key academic goals set at the start of this decade. Corporate leaders question how much longer we can compete effectively in a global economy.

Believing that educators and students need higher instructional standards as a prerequisite to achieving academic goals, Governors and business, education and community leaders met in Palisades, New York in March for a National Education Summit. Their mission: To start a national effort to establish high academic standards, assessment and accountability and improve the use of school technology as a tool to reach high standards.

This newsletter summarizes the proceedings of the 1996 National Education Summit. It provides ideas and facts that educators, parents and community leaders can use to move these policies to reality as they establish higher academic standards in their schools.
1996 National Education Summit:

an "enduring gift to America's future"

Standards, Assessment, Accountability and Technology
A series of actions that will establish K-12 academic standards, assessments and accountability for student performance, and improve the use of school technology to reach high standards are under way as a result of the 1996 National Education Summit. Commitments to action came from 49 Governors and 49 corporate executives who attended the meeting on March 26 and 27 at the IBM Corporation's Executive Conference Center in Palisades, New York.

Within weeks of that meeting:

- The National Governors' Association Executive Committee adopted a proposal to create a non-governmental organization to serve as a clearinghouse for standards information and benchmarks and public reporting. The Executive Committee recommendation will be presented for endorsement by all Governors at NGA's annual meeting in July. This follows commitments unanimously approved by the Governors and business leaders at the Summit.

- State-level Education Summits, aimed at focusing business and government attention on the issues, were planned in states from Alaska to Nevada, New York to Georgia, and New Jersey to Florida.

- The Business Roundtable and other national business groups have begun work to make education standards, assessment and accountability the number one issue for its members.

Implementing Standards.
The Governors committed to establish in each of their states within two years internationally competitive academic standards, assessments to measure academic achievement, and accountability systems. The Governors will reallocate funds to implement standards and provide educator professional development, infrastructure and new technologies to meet the goals.

Business Practices.
Business leaders within one year will require job applicants to demonstrate academic achievement through transcripts, diplomas, and portfolios. They also will consider the quality of a state's academic standards and student achievement levels a high priority factor in determining business location decisions. And they committed to develop and help implement inexpensive and easy-to-use technology products and services to support teaching.

Public Reporting.
The Governors and business leaders agreed to be accountable for progress in their states toward student achievement in core academic subjects. An annual report by an external, independent, non-governmental group will measure each state's progress in setting standards, improving the quality of teaching, incorporating technology, supporting innovation and improving student achievement.

Information Sharing and Technical Assistance.
The Governors and business leaders agreed to work together on a voluntary basis to pool information resources and expertise and to designate by this summer an external, independent, non-governmental entity to facilitate their work and provide guidance and information to interested states and school districts.

In individual states the Governors and business leaders agreed to a variety of activities — including town meetings, hosting educators at businesses to help them understand workplace needs, and organizing state-level Education Summits — to help continue momentum at a state and local level.

The Summit came about following IBM CEO Louis V. Gerstner, Jr.'s speech at the National Governors' Association (NGA) 1995 annual meeting. Gerstner and NGA Chairman Governor Tommy Thompson of Wisconsin agreed there was a need for Governors and business leaders to act on K-12 education standards.
"I think the major impact of the Summit for teachers is that we can feel like we have some allies in the war on ignorance. Students know there is not much required of them, and when teachers do there is an outcry. Now they can see it is not just teachers who expect them to be educated. We must make it clear that a diploma means something. I think things have gone so far afield that we are forced to react like we did when the Russians launched Sputnik. There is more of a sense of urgency."

Joyce A. Elliott  
English and Speech Teacher,  
Joe T. Robinson High School

Former President George Bush convened the last Education Summit in 1989 at Charlottesville, Virginia. The Governors at that session endorsed six broad national education goals to be reached by the year 2000. But by 1995, only six Governors who had attended the 1989 meeting were still in office and, based on the progress to date, the nation’s schools and students will not meet any of these goals.

Summit participants emphasized that they are not trying to dictate what or how students should learn — decisions that rightfully should be made locally by educators and parents. Rather, they said, the urgency of generating momentum for reform convinced them to play a more active role in promoting an education policy emphasizing high academic standards.

Speaking during the second day of the Summit, President Clinton told participants, “I accept your premise; we can only do better with tougher standards and better assessment, and you (Governors) should set the standards. I believe that is absolutely right. And that will be the lasting legacy of this conference.”

President Clinton, who participated in the 1989 Education Summit as Governor of
Arkansas, said setting standards is the foundation for every other strategy. "Here in 1996, you're saying you can have all of the goals in the world, but unless somebody really has meaningful standards and a system of measuring whether you meet those standards, you won't achieve your goals. That is the enduring gift you have given to America's schoolchildren and to America's future."

Business executives have a stake in the K-12 standards issue because students graduating from high school must have mastered core academic subjects in order to analyze problems, propose solutions and communicate clearly—skills increasingly in demand for jobs today and in the next century. But the business executives and Governors shared concern that students, parents and educators too often aim too low.

"Standards drive excellence. We're talking about something that's very ambitious—setting high standards, telling our kids they have to do better because we know they can do better," said Governor Thompson. "Imagine the reaction if our Olympic athletes were able to finish no better than 13th or 14th this summer in Atlanta," he added. "That's about where we are in education. Our Olympic athletes have standards by which to measure their success. Many of our schools don't have standards."

It is important that high academic standards apply to all students, according to Nevada Governor Bob Miller, Vice Chairman of the National Governors' Association.

"It doesn't take a crystal ball to predict the affluent suburban school districts will do markedly better on average compared to those districts that are poorer and burdened by many of our social problems," Miller said. "If we are committed to highlighting the performance discrepancies between student-to-student, school-to-

<table>
<thead>
<tr>
<th>Support for Standards Broad Across All Groups</th>
<th>Set up very clear guidelines on what kids should learn and teachers should teach in every subject</th>
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<tbody>
<tr>
<td>GENERAL PUBLIC</td>
<td>82%</td>
</tr>
<tr>
<td>PARENTS</td>
<td>86</td>
</tr>
<tr>
<td>NON-PARENTS</td>
<td>80</td>
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<tr>
<td>AFRICAN AMERICAN PARENTS</td>
<td>92</td>
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<tr>
<td>WHITE PARENTS</td>
<td>87</td>
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<tr>
<td>TRADITIONAL CHRISTIAN PARENTS</td>
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<td>AGES 18-35</td>
<td>78</td>
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<td>AGES 36-54</td>
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<td>AGES 55 OR OLDER</td>
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<td>DEEP SOUTH</td>
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<td>MIDWEST</td>
<td>79</td>
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<td>WEST</td>
<td>81</td>
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Source: Public Agenda, First Things First: What Americans Expect from the Public School (1994)

school and district-to-district, we must be equally committed to providing the technical support and resources to our disadvantaged regions. This is the only way we can ensure all children will reach their full potential."

Corporations do not want K-12 schools to become vocational schools, according to Gerstner. To the contrary, schools could better serve their students and the business community by producing graduates with higher academic, problem-solving and communication skills.

"We'll teach (students) how to be marketing people," Gerstner said. "We can teach them how to manage balance sheets. What is killing us is having to teach them to read and to compute and to communicate and to think."

Summit participants saw eleven technology demonstrations conducted by students and teachers highlighting cutting-edge instructional and administrative applications. The demonstrations were selected as the best from more than 80 proposals.

Technology has a key role in the standards and assessment movement, the Governors and business leaders noted in the policy statement. They said they "are convinced that technology, if applied thoughtfully and well-integrated into a curriculum, can be utilized as a helpful tool to assist student learning, provide access to valuable information and insure a competitive edge for our workforce." They also said in the policy statement that they would support educators in overcoming barriers that impede the effective use of technology, such as planning and acquisition, high costs, lack of school technology policies, resistance to change and "most important, the need for staff development and curriculum change."

For a list of Governors, business leaders and educators who attended the 1996 National Education Summit, see page 20.

For key excerpts from the 1996 National Education Summit Policy Statement, see the article on page 6.
IN NOVEMBER 1995, the National Education Goals Panel marked the progress made in achieving the goals at the midpoint between the time they were established and the year 2000, when they are to be achieved. The report shows some positive developments, but it is clear that, at the current pace, we will not meet these goals in any area. The report also shows that limited information is being collected to help us understand how students are performing. While we remain committed to implement at the state and local level the education goals adopted by Governors following the Charlottesville Summit in 1989, it is clear that simply setting goals is not enough.
Why we have come together

Students must be challenged to perform at higher academic levels and be expected to demonstrate mastery of core academic subjects. In addition to basic skills, all individuals must be able to think their way through the workday, analyzing problems, proposing solutions, communicating, working collaboratively and managing resources such as time and materials.

Governors and business leaders must assist state or local school districts in developing assessments to measure student achievement and to use such assessments as measurements for providing students and parents with continuous feedback about student performance and specific areas where students may need some extra help. Finally, we must put in place the technology, professional development opportunities, and curriculum that will enable both parents and communities as a whole to hold their schools accountable.

Explicit expectations and school accountability

Academic standards clearly define what students should know and be able to do at certain points in their schooling to be considered proficient in specific academic areas. However, standards and assessments are necessary tools to inform and direct our work; not an end unto themselves. Without a clear articulation of the skills needed, specific agreement on the academic content students should be learning, clear goals for what needs to be accomplished, and authentic and accurate systems to tell us how well schools and students are doing, efforts to improve our schools will lack direction.

We believe that setting clear academic standards, benchmarking these standards to the highest levels, and accurately assessing student academic performance is a state, or in some cases a local, responsibility, depending on the traditions of the state. We do not call for a set of mandatory, federally prescribed standards, but welcome the savings and other benefits offered by cooperation between states and school districts and the opportunities provided by a national clearinghouse of effective practices to improve achievement.

Technology to give students the knowledge and skills they will need in the workplace

We cannot reach higher standards without developing new approaches and strategies to help students, teachers, and parents. While not a silver bullet, technology is one important tool to accomplish this.

Governors and business leaders need to support educators in overcoming the barriers that impede the effective use of technology. Such barriers may include the complexities of planning for the acquisition and integration of technology into classrooms and schools; the high costs of acquiring, developing, and maintaining it; the lack of school technology policies; resistance to change from individuals both within and outside the education system; and most important, the need for staff development and curriculum change.

Why we believe in the use of standards to improve student achievement

We endorse these efforts because we believe it will:

- help all students learn more by demanding higher student proficiency and providing effective methods to help students achieve higher standards;
- provide parents, schools, and communities with an unprecedented opportunity to debate and reach agreement on what students should know and be able to do;
- focus the education system on understandable, objective, measurable, and well-defined goals to enable schools to work smarter and more productively;
“Students are going to know that outstanding performance in the classroom leads directly to better jobs and economic opportunity. That connection has not been clear in the past. Our objective is to make it clear in the future.”

John E. Pepper
Chairman and CEO,
Procter and Gamble

► reinforce the best teaching and educational practices already found in classrooms and make them the norm; and provide real accountability by focusing squarely on results and helping the public and local and state educators evaluate which programs work best.

What we commit to do
...This summit is intended to demonstrate – to parents, students, educators, and our constituents – our strong and nonpartisan support of efforts to:

► set clear academic standards for what students need to know or be able to do in core subject areas;
► assist schools in accurately measuring student progress toward reaching these standards;
► make changes to curriculum, teaching techniques and technology uses based on the results;
► assist schools in overcoming the barriers to using new technology; and
► hold schools and students accountable for demonstrating real improvement.

What specific actions we will take
Implementing Standards.
As Governors, we commit to the development and establishment of internationally competitive academic standards, assessments to measure academic achievement, and accountability systems in our states, according to each state’s governing structure, within the next two years.

Business Practices.
As business leaders, we commit to actively support the work of the Governors to improve student performance and to develop
coalitions of other business leaders in our states to expand this support. As such we will clearly communicate to students, parents, schools, and the community the types and levels of skills necessary to meet the workforce needs of the next century and implement hiring practices within one year that will require applicants to demonstrate academic achievement through school-based records, such as academic transcripts, diplomas, portfolios, certificates of initial mastery, or others as appropriate. We commit to considering the quality of a state's academic standards and student achievement levels as a high priority factor in determining business location decisions.

Public Reporting.
As Governors and business leaders, we commit to be held accountable for progress made in our respective states toward improving student achievement in core subject areas. First, we will establish an external, independent, non-governmental effort to measure and report each state's annual progress. To review student academic progress, we will explore the use of a reliable benchmarked assessment. Second, we will produce and widely distribute in each of our individual states an annual report showing

"This isn’t only about standards and assessments for the sake of making more measurements. This is about training, helping, and giving kids a clear target and a learning experience that helps them reach that target... You (business leaders) have got to tell us... what kind of skill levels do we have to have in order to compete in that world?"

— Roy Romer
Governor of Colorado
Technology will play an important role in helping students develop the skills they will need to be successful in the workplace, say Governors and business leaders who attended the National Education Summit. Examples of the best in K-12 technology were on display during the Summit. Participants saw eleven demonstrations picked as the most impressive from among 80 proposals plus 16 instructional software products. The demonstration products and projects were selected by the Center for Children and Technology, a New York-based nonprofit research and evaluation group. (For a list of the demonstrations, see below.) In their policy statement, Governors and business leaders say they believe that new uses of technology in schools will:

- improve access to the best instructional methods and materials;
- give families greater access to teachers and schools;
- provide students with the hands-on experience they will need to compete successfully in the workplace;
- find and reinforce the best uses of technology and make them the norm;
- serve as a driving force for innovation and creativity;
- offer teachers access to specialized support, collegial relationships, and professional development; and

Example of the best practices, conducted primarily by teachers and students, exemplified the potential for technology to help schools reach high standards in four areas.

### Teaching and Learning

**CoVis**
(School of Education and Social Policy, Northwestern University, 2115 North Campus Drive, Evanston, IL 60208; 847-467-2405)
CoVis, which is a short form of “Collaborative Visualization,” teaches middle and high school students meteorology and environmental science by using a series of computer-based tools.

**Middle-School Mathematics through Applications Project (MMAP)**
(Institute for Research and Learning, 2550 Hanover Street, Palo Alto, CA 94304; 415-614-7900)
Imaginative real-world projects, such as designing a field station in Antarctica, help middle school students develop basic skills and pre-algebra concepts with technology.

### Staff and Professional Development

**Apple Classrooms of Tomorrow (ACOT)**
(2100 California Street, San Rafael, CA 94901; 415-453-0000)
This innovative software helps middle and high school teachers and students investigate phenomena that are usually not included in science classes. Teachers use images that are original data from recent research in biology, earth and space science, physics and chemistry to develop new ways of presenting classic laws of science.
> provide new ways for students to work at their own pace.

“We will be inadequate in our response to the competitive education challenge if we do not integrate technology into the classroom,” said John Clendenin, chairman and CEO, BellSouth Corp. “The jobs we’re hiring for are technology-driven. If we don’t apply technology during the school year, how can we expect our graduates to acclimate to the jobs they aspire to hold?” Wisconsin Gov. Tommy G. Thompson, chairman of the National Governors’ Association (NGA) and the Education Commission of the States, added, “Technology is the great equalizer between school districts, making sure all our children have access to a high-quality education.” Similar views were expressed in the following excerpt from the Summit Policy Statement:

“We are convinced that technology, if applied thoughtfully and well integrated into a curriculum, can be utilized as a helpful tool to assist student learning, provide access to valuable information and insulate a competitive edge for our workforce. It can be used by trained educators in classrooms and other places students learn, such as in libraries, in museums, and at home. Interactive learning enables parents and educators to find new ways to help students improve academically, while helping students learn to use the tools that are being used not only in today’s high-technology workplaces, but increasingly in any workplace.”

The Governors and business leaders committed to help educators overcome barriers, including planning for the acquisition and integration of technology in schools, the high cost of acquiring and maintaining technology, the lack of school technology policies, resistance to change, and the need for staff development and curriculum change. Those barriers combine to make K-12 education the only knowledge-intensive industry not to embrace new technologies, according to a report by the Center for Children and Technology. George M.C. Fisher, chairman, president, and CEO of Eastman Kodak called that finding “astonishing, but true.”

“It must be equally disturbing to all the Governors here, who know they can’t re-engineer and transform government without applying modern technology,” he said.

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> LabNet
> (TERC LabNet, 2607 Massachusetts Avenue, Cambridge, MA 02140; 617-547-0430)
> LabNet lets teachers download public domain software, articles and lesson plans. It also uses the Internet to serve as an electronic meeting place for 1,500 primary and secondary school math and science teachers.

> School/Home/Community Connections

> ArtEdge
> (The Kennedy Center for the Performing Arts, Washington, DC 20566-001; 202-416-8873)
> ArtEdge is a national arts information network. It delivers primary source materials to students and teachers, and also lets educators share information on teaching the arts and how to enhance other subjects by using the arts.

> National Digital Library
> Many of the vast holdings of the Library of Congress are now available on the Internet. The digital library makes it possible for homes and schools to have free access to historical documents and national cultural treasures.

> Wired for Learning
> (IBM Research, P.O. Box 218, Kitchawan Road, Yorktown Heights, NY 10598; 914-945-2138)
> This software helps teachers, parents and mentors review and evaluate student work and share ideas while students complete multi-faceted group projects.

> Administration and Management

> Digital Portfolio Project
> (Coalition for Essential Schools, Brown University, P.O. Box 1969, Providence, RI 02912; 401-863-3384)
> Data and student work are stored in digital portfolios that present a multimedia picture of the student’s abilities for administrators and parents. It mirrored the demonstration with...

> Assessment for Standards
> (IBM Research, 30 Saw Mill River Road, Hawthorne, NY 10532; 914-784-5603)
> A tool for aiding student assessment, this software gives teachers access to local, state and national educational standards and student work that illuminates mastery at different levels.

> Union City
> (Union City Board of Education, Office of Academic Programs, 3912 Bergen Turnpike, Union City, NJ 07087; 201-348-5671)
> The Union City schools, a predominantly Latino district with a large at-risk enrollment, worked with Bell Atlantic and other corporate partners to restructure instruction and integrate technology. The result has been a dramatic increase in achievement test scores.
One-third of corporate economists surveyed in 1995 said that their firms were encountering problems in finding skilled labor.


The American Management Association (AMA) estimated that in 1993, the average cost per trainee receiving remediation was $244. Only four percent of American businesses provided remedial training in 1989. By 1994, that figure had jumped to 20 percent.

Source: American Management Association (1994)

Eight out of ten Americans say that academic standards are too low in public schools in their own community and that youngsters are not expected to learn enough. Almost half of Americans (47 percent) say a high school diploma does not guarantee mastery of even basic skills.

Source: Public Agenda, First Things First: What Americans Expect from the Public School (1994)

"By committing ourselves to local standards, we're saying that we're going to change the current situation that measures how much time students spend in their seats, but not how much goes into their heads."

Tommy G. Thompson
Governor of Wisconsin
Chairman, National Governors' Association

"Support from government and business leaders is essential. Without it, we can't set and meet the higher academic standards we know we need."

Waldemar "Bill" Rojas (at right)
Superintendent,
San Francisco Unified School District
"I believe this meeting will be historic. Here in 1996 you are saying that you can have all the goals in the world, but unless somebody has meaningful standards and a system to measure whether you meet the standards, you won't achieve the goals."

President Bill Clinton

More than half of U.S. math classrooms are dominated by elementary arithmetic topics; ten percent of U.S. eighth grade math programs are essentially remedial arithmetic programs—compared to countries like France, Japan, Thailand and Belgium where there are no remedial classrooms.


Seven in ten Americans (71 percent) say youngsters will "pay more attention to their school work and study harder" and 72 percent say that youngsters will "actually learn more" if standards are clearer and more rigorous.


"Kids in France, Germany and Japan are not smarter than American kids. They simply have greater expectations placed upon them. We owe it to our children to put higher academic standards in place. If we don't, we will be stealing their future and robbing them of their ability to compete."

Bob Miller
Governor of Nevada
Vice Chairman, National Governors' Association
Summaries of 1996 National Education Summit Briefing Materials

Twelve papers were commissioned to prepare Governors and business leaders for the 1996 National Education Summit. These papers address the implementation of high academic standards, assessment and accountability and the potential of technology. Following are brief summaries. Unless noted, full text versions of each of the papers are available on the 1996 National Education Summit World Wide Web site:
http://www.summit96.ibm.com

High Academic Standards and School Reform: Education Leaders Speak Out
(Prepared by Sue Lehmann with Evan Spring, 37 pages.)

Fourteen education leaders, representing different political viewpoints and professional experiences, were interviewed about high academic standards and school reform. There was general agreement about what needs to be done:

High academic standards – defined as a common core of learning for all public school students, with measures of performance based on that common core – are essential to school reform.

High academic standards would substantially help all students – including minorities and the poor – reach higher student achievement levels.

Standards alone are insufficient – to be relevant, they must be related to reforms in testing, teacher education and teaching practices and the allocation of resources.

Standards, at least initially, should concentrate on the traditional academic disciplines: namely, reading, writing, mathematics, science, history, geography and literature.

Standards should be clear and concise, challenging but realistic.

Standards initiatives should be undertaken primarily at the state level.

States should recognize schools that improve student performance and intervene in schools that persistently fail to improve student performance.

**Percentage of Age Cohort Who Take and Pass Advanced Subject-Specific Examinations**

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<thead>
<tr>
<th>Country</th>
<th>% Take</th>
<th>% Pass</th>
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<tbody>
<tr>
<td>England &amp; Wales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-level examination</td>
<td>31</td>
<td>25</td>
</tr>
<tr>
<td>France Baccalauréat</td>
<td>43</td>
<td>32</td>
</tr>
<tr>
<td>Germany Abitur</td>
<td>37</td>
<td>36</td>
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<tr>
<td>Israel Bagrut</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Japan University Entrance Examinations</td>
<td>52</td>
<td>33</td>
</tr>
<tr>
<td>US Advanced Placement Examinations</td>
<td>6.6</td>
<td>4.4</td>
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Students who perform well in high school should be rewarded in terms of employment prospects or college admissions.

Annotated Bibliography

(Prepared by Sue Lehmann and Alexandra Noel; 59 pages.)

The bibliography is an overview of more than 250 books, documents, reports, handbooks, monographs, brochures, pamphlets, and articles received in response to a request from the planning committee to national and state organizations and individuals to submit publications related to the topics of the 1996 National Education Summit.

Americans' Views on Standards

(Prepared by John Immenschuh and Jean Johnson of Public Agenda; 34 pages.)

This report by Public Agenda, a nonprofit, nonpartisan research organization, analyzes Americans' attitudes about raising and enforcing higher academic standards in public schools. Based on this review, it is clear that:

There is nearly universal support for the idea that public schools do not currently demand enough from students.

Support for academic standards is high among all demographic and ideological groups.

Proposals to raise and enforce academic standards are supported by all groups in roughly even percentages. For example, support for requiring good command of English as a standard for high school graduation ranges from 80 to 90 percent regardless of whether respondents are from North or South, whether they are young or old, whether they are African-American, white, or traditional Christian parents.

Source: Public Agenda, First Things First: What Americans Expect from the Public School (1996)

Support for academic standards seems to be virtually "unbudgeable." People support raising standards even when it is clearly pointed out to them that some youngsters will be denied diplomas or kept back in school.

Americans think that higher and clearer academic standards are every bit as important for inner-city children as for children from more affluent neighborhoods.

Some of the public's chief complaints about the schools - youngsters graduating without minimal basic skills, truants sporting diplomas alongside youngsters who worked hard, announcements of yet another educational "fad" - reflect economic anxiety, fears of moral decay, and a perception that many leaders are out of touch.

Teachers broadly support a variety of proposals to raise and enforce academic standards, but their endorsement is less vigorous than that of the public or community leaders.

Standards Mean Business

(Prepared by Nelson Smith for the National Alliance of Business; 19 pages.)

When job openings are announced, applicants line up by the hundreds. Yet managers say they can't find people to fill jobs. The mismatch between skills required and skills available generates huge costs for industry. Some, like the cost of remedial training in basic skills, are clearly related to school-system underperformance. Others are less obvious, but also result from lax educational standards: the cost of extensive testing and screening needed to identify qualified job applicants because a high school diploma no longer guarantees adequate skills; fees paid to temporary agencies; and overtime costs generated by high turnover. Corporate taxes also support a range of public-sector costs. These costs are not only for K-12 education, but for college-
level remediation, welfare, incarceration, and other consequences of school failure. Setting educational standards calibrated to workplace needs is the first step toward ending this inefficiency. Standards-driven reform is the best way to equip students for the opportunities offered by the new economy.

Mathematics and Science Curriculum and Standards: An International Comparison
(Prepared by the United States National Research Center, Third International Mathematics and Science Study — TIMSS; 35 pages.)

Among the findings of international mathematics and sciences studies:

The U.S. mathematics and science curriculum is less demanding than that of high-achieving countries. There are fewer classes in algebra, geometry, and calculus, with an over-emphasis on arithmetic and remedial arithmetic.

All countries have content standards for mathematics and science classes, some of which (like the U.S.) are issued at the state and local level. However, in 85% of the countries, there is a formal, required link between the standards and instruction. The U.S. is among the 15% of countries for which instruction is not driven by the standards.

The mathematics curriculum in the U.S. does not give much attention to any one topic. Although gains in achievement are greater in topics focused on by a country’s curriculum, curriculum in the U.S. remains unfocused, dividing its attention among many topics and focusing on none.

Expectations are lower for both high school graduates and for college-bound students in the U.S. than in most other countries.

World-class Performance: Education Standards in Other Nations
(Prepared by Ann Borkowski and Kate Nolan of New Standards; 4 pages.)

This report by New Standards – a collaboration of the Learning Research Development Center of the University of Pittsburgh and the National Center on Education and the Public.

France’s curriculum and the exams based on it are available at virtually every bookstore. After yearly exams are conducted, there is public discussion of the questions and results in much the same way as U.S. citizens discuss the Super Bowl.

Rigorous.
Standards that will contribute to improving student achievement must set a performance expectation that sets a challenge to high performance.

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<th>Growing Dissatisfaction with Public Schools</th>
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<tr>
<td>Very little confidence or none</td>
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<td>Great deal of confidence/quite a lot of confidence</td>
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(Source: Gallup Organization)

Economy, in partnership with states and large urban districts -- examines the standards in place in other countries. The conclusion is that there are six qualities of a “world-class” education standards system:

Specific.
Specificity is the hallmark of the standards found in the Japanese national curriculum. For every subject, the standards define precisely what content must be covered.

High Stakes.
The most distinctive characteristic of the highly-regarded French and German systems is that doing well on the (French) baccalauréate and (German) abitur really matters. The results on these assessments decide students' access to different education and training.

Inclusive.
Historically, U.S. schools were among the first to provide secondary schooling for all
students. Many have argued that this is why the U.S. fares poorly in international comparisons. In fact, research shows that other countries have caught up with and even surpassed us in terms of retaining students throughout the years of secondary schooling.

Measurable.
Standards that cannot be counted do not count. The courses of study for the Victoria certificate of education in Australia set very clear requirements for students working to earn it. Similarly, French students studying for any of the national examinations know in advance what the exam will look like and the criteria that will be used in grading.

Judging Standards in Education Reform and State Standards: A Selective Comparison
(Prepared by the Council for Basic Education; 65 pages.)
The first part of this detailed 65-page report outlines criteria and a coherent approach to standards-based education reform. It focuses on the first step to reform: developing the content standards that educators and the public use to identify what students should learn. The second part, "State Standards: A Selective Comparison" presents the range of standards currently in use or development across the country. Latest reports indicate that 49 states and the District of Columbia are either beginning or in the midst of the standards-setting process. This report provides illustrations of a number of ways standards have been designed by the States.

Performance Standards: How Good is Good Enough?
(Prepared by Anne Borowick and Kate Nolan of New Standards; 25 pages.)
Most states have established programs to develop standards for what students should know and be able to do. Content standards are limited as tools to assist in improving student performance. Quality of performance or "how good is good enough" is fundamental to the idea of standards. Performance standards make content standards operational. They transform inert statements of content into active expectations for performance.

Education Standards, Assessment, and Accountability in the States
(Prepared by the National Governors' Association; 14 pages.)
This document provides a state-by-state status report on education standards, assessment systems, and accountability mechanisms in the states. The data reflect primarily the findings of surveys conducted by the Council of Chief State School Officers (CCSSO) and the North Central Regional Educational Laboratory (NCREL) during 1995. The first chart provides an overview of state progress on standards, assessment and accountability. Three additional charts present more detailed information in each area.

Technology in Education: Transitions
(Prepared by Jan Hawkins, Center for Children and Technology, Education Development Center; 16 pages.)
While computer technologies have been available to schools in substantial numbers for about fifteen years, we are now in a period of transition for technology in education. Rapid advances in telecommunications and multimedia technologies combine with national consensus about the need for higher standards of achievement in schools to present new challenges. This is a time of transition in three ways:

In France, Germany, Israel, and Japan, between 2% and 4% of students take advanced tests in mathematics and science, and more than 90 percent who take the test pass. In the U.S., comparable Advanced Placement (AP) exams are taken by only 1.6 percent of the students and only about 66 percent who take the test pass.

Transition from primarily stand-alone hardware in schools to connectivity—linking computers throughout schools with communications technologies and to resources around the world;

Transition from primarily isolated skills-practice to integrating technologies as tools throughout the disciplines to achieve higher standards of education and to enable more effective teaching;

Transition from inadequate preparation of teachers to support for all teachers to learn how to use technologies effectively throughout their everyday teaching and for self-directed staff development.

**Issue Brief: Technology and Education Standards**

(Prepared by National Governors' Association, Education Policy Studies Division; 7 pages.)

Technology can be a powerful ally in the quest to reform schools. Higher standards mean that all students need to master basic skills as well as become adept at thinking analytically, solving problems, and communicating clearly. Computers, telecommunication, and interactive cable are among the many technologies that have immense potential to help schools reach higher standards. Yet, the sad truth is that schools are technologically impoverished. Equally disturbing is the fact that when technology is present in schools, it is all too often used with styles of teaching that fail to maximize its full potential. To realize the potential of technology to support high performance, it is of paramount importance that policy makers and educators rethink teaching and learning together with technology purchases.

**Technology for School Reform**

(Prepared by IBM Corporate Support Programs; 14 pages.)

The paper reviews examples of technology as a tool to improve classroom practice, direct instruction, performance-based assessment, professional development, school-community links and administration and management. Barriers to the effective use of technology include: cost; knowledge of technology; professional development; equity; and poor practice. This paper is not available from the 1996 National Education Summit World Wide Web site. However, a paper copy can be ordered by sending an e-mail message with your name and mailing address to: ibmgives@vnet.ibm.com or by writing:

**Corporate Support Programs**

**IBM Corporation**

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Armonk, NY 10504

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**Current Standards Too Low**

<table>
<thead>
<tr>
<th><strong>General Public</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Set higher standards than are now required about what students should know and be able to do in the basic subjects...for promotion from grade to grade</td>
</tr>
<tr>
<td>Academic standards are too low and kids aren't expected to learn enough</td>
</tr>
<tr>
<td>A high school diploma is no guarantee that the typical student has learned the basics</td>
</tr>
</tbody>
</table>

Source: Public Agenda, Americans' Views on Standards (1996)
A January 1996 USA Today/CNN/Gallup survey shows the quality of public education as the number one concern of voters in the upcoming election.

Source: USA Today/CNN/Gallup nationwide telephone poll of 1,000 adults (January 5-7, 1996)
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A non-profit, nationwide interstate compact formed in 1965 to help Governors, state legislators, state education officials and others develop policies to improve the quality of education at all levels.

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National Educational Goals Panel
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An instrument through which the nation's Governors collectively influence the development and implementation of national policy and apply creative leadership to state issues.

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Internet: rainsinfo@nces.org
Founded in 1990 to create an internationally benchmarked system of standards and assessments, New Standards is a collaboration of 14 states and six urban districts representing nearly half the students in the U.S., the Learning Research and Development Center at the University of Pittsburgh, and the National Center on Education and the Economy.

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A non-profit, nonpartisan research organization, Public Agenda has produced more than a dozen separate reports and conducted more than 100 focus groups on education issues.

Principal photographer: Bill Galler