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ABSTRACT

The skills and knowledge required for productive employment and citizenship are constantly expanding. To secure America's economic future, more students than ever before must be educated at much higher levels. States have responded to the challenge with energy, leadership, and resources. This report describes those efforts and analyzes their effects on schools and student achievement. The first section documents the gap between student performance and work force demands, and describes differences between the skills of U.S. students and those of their international peers. The second section reviews the range of state education reforms initiated during the past decade, which include standards and increased accountability, deregulation, school choice, and school-safety and discipline policies. The impact of negative public perceptions of education and other forces shaping school reform are examined in section 3. The fourth section summarizes research on school restructuring, school size, site-based management, school choice, and reform networks. Recommendations made in the final section include: (1) balance public concerns with research; (2) focus on the system; (3) back reforms for several years; and (4) engage reform networks. (Contains 90 endnotes.) (LMI)

BRIDGING THE GAP

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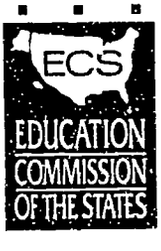
BRIDGING THE GAP

School Reform and Student Achievement



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EXECUTIVE SUMMARY

The skills and knowledge required for productive employment and citizenship — in fact, the very definition of literacy — are constantly expanding. To secure America's economic future, more students than ever before must be educated at much higher levels.

Overall, American students are doing better in school today than they did in the past. Unfortunately, these gains are coming too slowly to meet present and future workforce demands — and they are rising from a baseline truly dismal by international standards. Although Americans stay in school longer than their counterparts around the world, they continue to perform poorly in comparison with students in other industrialized nations.

Significant achievement gaps also persist between white and minority children in the United States. This gap has narrowed significantly since 1970, but progress has stalled in recent years.

During the past decade, states have undertaken a series of reforms to improve the performance of school systems and students. The first wave of change — raising graduation requirements, increasing teacher salaries and devoting additional funds to education — did little to boost student achievement. The second wave, initiated partly in response to the National Education Goals in 1989, included many of the provisions — standards, assessments, public reporting and sanctions — that "systemic reform" experts recommended.

Six years later, most analysts agree that these efforts still have a long way to go. As a result, the pressure for more sweeping reforms has increased. Many states have responded by attempting to broaden the reins of school governance, decentralizing power and introducing site-based management. At the same time, state governments are using "academic bankruptcy" laws to take over schools or school districts that consistently fail to perform.

To encourage competition and thus more options for parents and students, some states are also experimenting with school voucher and choice programs — allowing families to pick the schools their children attend. And parents and teachers themselves are establishing semi-autonomous "charter schools" within the public school system.

Despite these reforms, most Americans rate public schools as mediocre, at best. And while they support the implementation of stricter standards, as well as some of the other measures states have already taken, few see much evidence of progress

Overall, American students are doing better in school today than they did in the past. But these gains are coming too slowly to meet present and future workforce demands — and they are rising from a baseline truly dismal by international standards.

Indeed, many parents regard public schools as unsafe and increasingly ineffective. Their concerns present a challenge to education policymakers, who must take into account both the public's demand for immediate action and the longer-term lessons of experience and research.

In truth, the evidence of school reforms' success is decidedly mixed. Smaller schools generally perform better than larger schools, but reducing class size may make no difference. Site-based management — rarely evaluated and often pursued as an end in itself — appears to have little effect on student performance. And while parents who choose their children's schools appear more satisfied than others, the choice program studied in at least one major city did not boost students' achievement.

Research suggests that while each of these measures may produce "transitional" improvements — e.g., by increasing parental involvement or by making the school environment more conducive to learning — real gains in student achievement will come only when the process of teaching and learning itself is restructured.

Indeed, the most promising reforms are aimed at what goes on in the classroom: strengthening the interaction between students and teachers and enhancing the curriculum. The models most likely to succeed also seem to be those that give teachers, students and other stakeholders a clear and common vision of their school's direction.

Such models are being studied and promoted by school reform networks nationwide. Ultimately, the lessons that these networks — and other state- or school-level innovations — provide may hold the most hope for educators who seek to bridge the gap between student performance and workplace demands.

INTRODUCTION

America's future is increasingly defined not by its natural resources or its military might but by its "human capital" — i.e., the skills and knowledge of its people.

The importance of human capital is growing as the nation's economic base shifts from industry to information. Producing an automobile requires 40% ideas, skills and knowledge and 60% energy and raw materials. Producing a computer chip requires 2% energy and raw materials and 98% ideas, skills and knowledge. Since 1929, machines and materials accounted for 20% of the increase in American productivity; human factors accounted for 80%.[1]

Educational excellence is now a moving target. The skills and knowledge required for productive employment and citizenship — in fact, the very definition of literacy — are constantly expanding. To secure the nation's economic future, more students than ever before must be educated at much higher levels.

States have responded to this challenge with energy, leadership and resources. This report describes those efforts and analyzes their effects on schools and student achievement.

The first section of this report documents the gap between student performance — which has improved slightly in recent years — and workforce demands — which are exploding. The data also reveal striking differences between the skills of American students and those of their international peers.

The next section of the report reviews the range of state education reforms initiated during the past decade. While individual strategies vary, some trends are clear. A great majority of states are developing or implementing standards and increasing accountability. In addition, some states have deregulated or decentralized public education and injected choice, charter schools and other market forces into the system. Almost every state has adopted policies to make schools safe and orderly, and to reinforce the responsibilities of students and their families.

Despite these efforts, public confidence in the education system is sagging. Indeed, in the eyes of many observers, schools are unsafe, ineffective — and getting worse all the time. The third section of this report examines the impact of these perceptions and other forces shaping school reform.

States must decide how to respond to these forces with reforms that work; i.e., those that have produced real and measurable improvements in student performance. Unfortunately, though, few of the reforms initiated during the past decade have been subjected to rigorous research. And the existing evidence — summarized in the fourth section of this report — is often inconclusive and incomplete.

The skills and knowledge required for productive employment and citizenship — in fact, the very definition of literacy — are constantly expanding. To secure the nation's economic future, more students than ever before must be educated at much higher levels.

If public opinion and practical experience agree on any point, it is this: Real reform requires more than a piecemeal or quick-fix approach. Only a thorough restructuring of the teaching and learning process can produce lasting gains in student achievement. Ultimately, this report concludes, the nation's educators can afford to do no less, if they intend to bridge the performance gap.

I. THE PATH OF STUDENT PERFORMANCE

Overall, American students are doing better in school today than they did in the past. Unfortunately, these gains are coming too slowly to meet present and future workforce demands — and they are rising from a baseline truly dismal by international standards.

A variety of data shows a stable or slightly increasing level of student performance. Achievement levels are returning to the highs experienced in the 1970s, even though the population of test-takers today is much larger and more diverse.[2]

Recent Scholastic Assessment Test (SAT) and American College Testing (ACT) results show slight increases in overall scores and a marked decrease in the performance gap between males and females. In 1995, SAT scores were five points higher for the verbal assessment and three points higher for the mathematics assessment than in the previous year.[3] (These gains may in part reflect changes in the verbal assessment, putting more emphasis on critical reading and testing vocabulary in context, and changes in the new mathematics assessment, emphasizing application of concepts and data interpretation.) ACT scores held steady after two years of gains.[4]

While the SAT and the ACT are designed to gauge a student's aptitude to undertake college-level work, they are frequently — if inappropriately — used by the media as a measure of high school achievement. Changes in the SAT this year and additional changes to the scoring system next year will bring the test under further scrutiny as a national indicator of student achievement.

Results from the National Assessment of Educational Performance (NAEP) are mixed: They show slight gains in mathematics and science achievement and declines in reading and writing.[5]

- Average mathematics, science and reading levels in 1992 were equal to or slightly higher than those of the early 1970s.
- Declines in science achievement during the 1970s were followed by a period of recovery from 1982 to 1992.
- With the exception of 8th grade writing, there have been no significant improvements in reading or writing performance between 1984 and 1992. In fact, the 1992 scores showed a decline in reading achievement at age 9; and the 1994 scores showed a decline in reading for 12th graders.

How can states implement clear academic standards without tying the hands of local educators? How can schools and school districts be held accountable for student performance? And how can education systems expand the range of choices they offer without abandoning their commitment to equity?

- Significant achievement gaps persist between white and minority children. This gap has narrowed significantly since 1970, but progress has stalled in recent years.

While test scores may not be soaring, many students are tackling tougher courses. A recent study by the Council of Chief State School Officers found dramatic increases in the proportion of high school students who had reached a third year of mathematics or science by graduation:

- Between 1982 and 1992, enrollments in algebra 2 increased from 37% of high school graduates to 56%.
- During the same period, enrollments in chemistry increased from 32% to 56%.[6]

On average, Americans tend to stay in school longer than anyone in the world. The typical American worker has attended more years of school — and is more likely to have graduated from college — than his or her counterpart in almost any other country.[7]

Yet American students continue to perform poorly in comparison to their international peers. The average American 13-year-old scored lower on mathematics tests than students in every other large country (with the exception of Spain). U.S. students at age 13 perform at levels similar to Taiwanese 11-year-olds. The records of individual states such as Iowa, North Dakota and Minnesota, however, far surpass the performance of the nation as a whole and compare more favorably with other countries.[8]

II. THE RANGE OF STATE RESPONSES

Twelve years ago, the National Commission on Excellence in Education issued a blistering attack on the American school system, in a report entitled *A Nation at Risk*. The commission called for major reforms in virtually every area of American education.[7]

State policymakers responded by increasing the "inputs" of education: raising graduation requirements, increasing teacher salaries and devoting additional funds to education. A whole new body of rules emerged, in areas ranging from extracurricular activities and student attendance to competency testing for prospective teachers.

Amid this blizzard of activity, it became easy to lose sight of the central aim: improving the teaching and learning process to support higher levels of student achievement. Those levels were established as National Education Goals in 1989.[8] In announcing the goals, the nation's governors encouraged states and localities to focus on results — not regulations and "inputs" — and to increase the flexibility and discretion of local schools and their faculties. The governors urged educators to help students meet the goals by the year 2000, but did not provide a prescription.

At roughly the same time, national organizations, as well as such academic experts as Stanford University's Marshall Smith and Jennifer O'Day, were beginning to articulate performance-based strategies for "systemic school reform."[9] These strategies were designed to revamp the entire teaching and learning process, on the theory that students must reach high standards and that other aspects of education — professional development, instructional methods, teacher training, curriculum and assessment practices — must be "aligned" to reinforce one another.

Many states greeted these proposals with enthusiasm, turning them, in some cases, into law. Thus a second generation of reforms — including standards, assessments, public reporting and sanctions — was born.

Questions Remain

Six years later, most analysts agree that these efforts are not proceeding quickly enough, and a new round of debates has ensued. Among the questions: How can the implementation of standards-driven reforms — and thus student achievement — be accelerated? Although the public supports higher standards for all students, how can this reform be related to the public's concerns about the performance of public schools and the role of government in setting standards?[10]

How can states implement clear academic standards without tying the hands of local educators? How can schools and school districts be held accountable for student performance? And how can education systems expand the range of choices they offer without abandoning their commitment to equity?

SAMPLE MATHEMATICS STANDARD

National Council of Teachers of Mathematics
Standard 1: Mathematics as Problem Solving

In grades K-4, the study of mathematics should emphasize problem solving so that students can use problem-solving approaches to investigate and understand mathematical content, formulate problems from everyday and mathematical situations, develop and apply strategies to solve a wide variety of problems, verify and interpret results with respect to the orginal problem, and acquire confidence in using mathematics meaningfully.

Problem solving should be the central focus of the mathematics curriculum. As such, [problem solving] is a primary goal of all mathematics instruction and an integral part of all mathematical activity. Problem solving is not a distinct topic but a process that should permeate the entire program and provide the context in which concepts and skills can be learned."[5]

Consider the following problem:

"I have some pennies, nickels, and dimes in my pocket. I put three of the coins in my hand. How much money do you think I have in my hand?"

This problem leads children to adopt a trial-and-error strategy. They can also act out the problem by using real coins. Children verify that their answers meet the problem conditions. Follow-up questions can also be posed: "Is it possible for me to have four cents? Eleven cents? Can you list all the possible amounts I can have when I pick three coins?" The last question provides a challenge for older or more mathematically sophisticated children and requires them to make an organized list of possible coin combinations, perhaps like the one below:

Pennies	Nickels	Dimes	Total Value
0	0	3	30 cents
0	1	2	25
0	2	1	20

How can states implement clear academic standards without tying the hands of local educators? How can schools and school districts be held accountable for student performance? How can education systems expand the range of choices they offer without abandoning their commitment to equity? And how can teachers maintain a safe and orderly learning environment?

The answers have come in several forms, as the following discussion illustrates.

RAISING STANDARDS

Standards are statements of what students should know and be able to do. As a reform strategy, standards are designed to support higher expectations for all students, by producing challenging curricula and providing an anchor for systemic reform. Under this approach, schools are expected to organize time, instruction, learning tools and other resources around a set of objectives — and to hold students and systems accountable for meeting them. Standards help shift the focus of the education system from "inputs" to performance.

Several national groups have developed subject-based content standards as models.[15] The first of these efforts, the mathematics standards developed by the National Council of Teachers of Mathematics, still serve as the prototype.[17] Many states and school districts are using these standards in designing their own reforms.

In fact, according to a recent study by the American Federation of Teachers (AFT), 49 states are developing standards.[16] The states' approaches vary enormously.[17] Some are highly centralized: The state mandates the standards and establishes aligned curriculum frameworks and assessments. Other approaches are more "bottom up": Local districts take the lead in developing or adapting the state standards and in implementing aligned curriculum and assessment practices. Some standards are broad, cross-disciplinary statements of the skills and knowledge that young people should possess. Others are specific, subject-based statements of core academic content. And still other standards incorporate both sorts of statements.

Mixed Results

Overall, the progress on this front has been mixed. "The good news is that the movement to upgrade academic standards has taken hold all across the country," AFT President Albert Shanker reported.[18]

The bad news? According to the AFT study:

- Only 13 states have standards that are clear and specific enough to support a common core curriculum.
- Most states will not hold students accountable for meeting the rigorous standards.
- Most states do not have "world class" standards.[19]

Polling data show that an overwhelming 87% of Americans favor setting higher standards in the basic subjects and holding students accountable for reaching them.[20] Researchers from Public Agenda recently found solid public support for taking such action — even if doing so meant failing students who did not meet the standards.[21]

Why do these reforms enjoy such strong support? Most people seem convinced that holding students to higher standards will improve academic performance. Indeed, in Public Agenda's estimation, "large majorities of the public, parents, teachers and leaders believe that most children will thrive under a system of higher standards."[22]

Nevertheless, many people remain unconvinced that the reforms now being implemented are leading to the standards they have in mind. This "disconnect" — between the public's desire for clear standards and its knowledge and understanding of current reforms — has produced considerable confusion and debate.

Several states have concluded the latest round of debate by revising standards or relaxing deadlines for their implementation. On the whole, though, most states have not wavered in their commitment to standards-driven reform.

Public Agenda's research also revealed a great deal of skepticism on the part of educators, many of whom apparently do not believe that schools will succeed in adopting higher standards or in holding students accountable for reaching them. While most of the educators Public Agenda surveyed said they supported these goals, many were reportedly dismayed by the frequency with which other teachers and administrators practiced "social promotion" — passing unqualified students to higher grades in order to make their schools appear effective and to keep their classrooms manageable.

MONTANA'S SYSTEMIC INITIATIVE

In 1989, the Montana Board of Education asked more than 2,500 citizens to help guide the state's education system into the next century. The academic standards that emerged from this effort — known as Project Excellence — were incorporated into the state's school accreditation requirements. School districts were told to adopt curricula and assessments to help students meet the new standards.

The Montana Council of Teachers of Mathematics (MCTM) responded by securing a grant from the National Science Foundations's Statewide Systemic Initiative. MCTM agreed to work with state policymakers and educators to develop an integrated high school mathematics curriculum; develop and publish curriculum and assessment materials for grades 9-16; increase the participation of females and Native Americans; incorporate the use of technology in mathematics education; redesign teacher preservice and inservice programs and revise teacher certification standards; and, develop a strategy to engage the public and policymakers in these reforms. Once MCTM secured funding from the National Science Foundation, the initiative was expanded to include integrated science curricula.

The Systemic Initiative for Montana Mathematics and Science (SIMMS) has focused on developing six levels of high school curriculum and assessment materials for integrated mathematics and on preparing teachers to use such materials in their classrooms. The project emphasizes applications to real-world situations; encourages the use of very active methods of instruction, such as cooperative groups; incorporates alternative assessment techniques, including some project work by students; and involves advanced technology, including graphing calculators, powerful computers and software.

SIMMS materials are now being used in roughly 130 of Montana's 180 public high schools, by more than 70 percent of the state's 530 high school mathematics teachers. The early results are encouraging.

In 1994 and 1995, two mathematics tests were administered to 9th and 10th grade students in SIMMS and traditional mathematics programs in 10 pilot districts. On a multiple-choice test (PSAT), researchers found no difference in scores between SIMMS and non-SIMMS students. But on an open-ended exam, students in SIMMS classrooms performed significantly better than their counterparts in traditional classrooms. SIMMS students used a greater variety of problem-solving strategies and attempted more difficult tasks than non-SIMMS students.[23]

KENTUCKY EDUCATION REFORM ACT: A PROGRESS REPORT

The Kentucky Education Reform Act (KERA) represents the boldest effort in the nation to reform an entire school system. And thanks to the independent Kentucky Institute for Education Research, it is also the best researched.[24] The institute was established in 1992 to evaluate the impact of KERA and to recommend improvements.

The institute is studying the implementation — and the consequences — of various KERA initiatives, as well as the reforms' impact on public perceptions. Here are some of the institute's findings:

- **School finance.** State and local funding for education have each increased more than 40% since KERA was adopted in 1989-1990. The gap in funding between the poorest and wealthiest districts has been cut in half; the gap in teachers' salaries between the poorest and wealthiest districts also has been reduced.

- **School-based decisionmaking.** Of 1,500 schools, 900 have established site-based decisionmaking councils. Participation by low-income and minority parents has been low, but is slowly increasing. Most of the councils' decisions have involved non-academic areas, although some are beginning to tackle budgetary and curricular issues as well. Teachers, parents and the public rate the councils as "working very or moderately well."

- **Reorganization of the Department of Education.** Though reorganized in 1991, the Kentucky Department of Education remains heavily bureaucratic. Nevertheless, the department has moved steadily toward a service orientation, and its staff members get high marks for their expertise and helpfulness.

- **Assessment and accountability.** Under the Kentucky Instructional Results Information System, tests and performance assessments have been administered for the past three years. Scores have increased each year in most schools. This year, schools that showed improvement received substantial cash awards. The tests' validity and reliability have been reviewed by outside experts, and adjustments will be made.

- **Preschool programs.** KERA preschool classrooms have improved substantially from 1992 to 1994. The gap between at-risk children and other pupils is decreasing, and both teachers and parents report more positive social skills and fewer behavioral problems among students.

- **Primary programs.** Efforts to establish an ungraded, multi-age, inter-disciplinary primary program have met with mixed results. Where fully implemented, the program has boosted student literacy skills — especially in writing — significantly. But many teachers either do not support multi-age grouping or do not know how to implement it.

- **Education Professional Standards Board.** The board is streamlining the credentialing system, developing alternative certification programs and setting new teacher performance standards.

- **Professional development.** Kentucky has one of the most sophisticated and extensive professional development plans in the country. Funding for professional development has increased from $1 per student in 1990-91 to $23 in 1995-96, and the state has developed a framework for high-quality professional development. It is too early to know how professional development has affected student learning, but surveys indicate positive attitudes.

INCREASING ACCOUNTABILITY

In response to public concerns, state policymakers are increasingly attempting to hold districts, schools and teachers more accountable for student performance. Efforts to increase accountability are often, though not always, connected to state standards-based reforms. These efforts are designed to ensure that students and schools are accurately assessed, that schools and districts report their results, and that under-performing schools receive sanctions, incentives or supports to improve.

States have devised a variety of new assessment programs, ranging from portfolios and performance-based tests to certificates of mastery and school-level report cards:

- **Portfolio assessments** require students to assemble examples of their work for review. Hundreds of teachers in several states have designed such assessments; and in many cases, their efforts have been used to refine existing state standards.

- **Performance-based tests** also require students to demonstrate the skills and knowledge they have acquired. These tests go beyond paper-and-pencil, multiple-choice exams. To succeed, students must not only demonstrate a mastery of basic skills in reading, writing and mathematics, but also use these skills to solve more sophisticated problems — and describe their approach.

- Many states have attempted to base these assessments on standards and to allocate **incentives** and **sanctions** according to each school's performance. In 1994, Kentucky distributed $26 million to 479 schools based on their performance on the state's new assessment. Low-performing schools are to receive sanctions and assistance from "expert teachers" assigned to the school.

- Ohio and other states are developing **"high stakes" tests** of essential skills, to determine whether students should graduate from high school (and whether they should continue to higher grades). Many of these efforts are tied to **certificates of mastery**, which may eventually replace diplomas as a guarantee that graduates possess necessary skills.

New forms of assessment typically face a great deal of skepticism — often because the public has not been given the opportunity to understand how these tools will actually improve schools.

- To publicize their performance, many schools and districts are either creating their own **report cards** or being issued report cards by the state. As of 1995, 48 states had developed such reporting mechanisms, many of which are tied to standards. One-third of these states provided building-to-building comparisons.

New forms of assessment typically face a great deal of skepticism — often because the public has not been given the opportunity to understand how these tools will actually improve schools. In addition, performance-based tests are expensive to develop, and even experts disagree about their merits and limitations. These issues will need to be resolved if a performance-based system is to succeed.

RESHAPING SCHOOL GOVERNANCE

Many states and school districts are attempting to broaden the reins of governance by including more parents and teachers in school-level decisionmaking. But unless they are coupled with other reforms, these efforts appear unlikely to yield significant improvements in student achievement.

Many states and school districts are attempting to broaden the reins of governance by including more parents and teachers in school-level decisionmaking. Some reforms push decisionmaking closer to the classroom, by decentralizing power. Other reforms, such as vouchers and charter schools, give families greater education choices. And still others grant schools increased flexibility, through waivers, recodification and other forms of deregulation.

These management and governance strategies may prove more effective if they are coupled with other reforms, such as those focused on curriculum and instruction. Alone, however, these efforts appear unlikely to yield significant improvements in student achievement.

Specific reforms fall into several categories:

- **Decentralization, deconsolidation, oversight**

  More and more schools and school districts have seized on site-based management (SBM) as a means of increasing flexibility and promoting innovation. A recent survey by the Educational Research Service of 3,380 high school principals found one-third of schools implementing, and another third planning to use, SBM models.[45] A few state legislatures are encouraging this approach as well. Arkansas, Kansas and Texas recently passed bills to expand local control over schools, thereby potentially strengthening SBM activities in these states.[46]

State and city leaders are studying an array of other new governance models. New Mexico, California and Nevada, for example, are considering "deconsolidation" — dividing larger school districts into smaller, more manageable units.

Other policymakers advocate bringing new players into the education arena. Chicago, for example, will replace its individual site councils with a new "SuperBoard" for the entire city.[47] Boston is studying similar proposals.

Some state governments are exercising greater authority over their education systems, by using "academic bankruptcy" laws to take over schools or school districts that consistently fail to perform.

- **Choice**

"School choice" strategies are intended to introduce market forces into the education system, by increasing families' range of options. Among the most controversial of these strategies are voucher programs, which spend public money to support children attending private schools. The Puerto Rico Supreme Court recently overturned one such program.[48] A court injunction has halted Milwaukee's attempt to include sectarian schools.

Ohio and Wisconsin both passed bills in 1995 that established or extended limited programs allowing families to use public funds for private schools.[49] The U.S. Congress also has proposed to incorporate private school choice into a reform plan for the District of Columbia.[50] Similar bills have been debated in at least seven other states.[51]

Expanding choice within public school systems is less controversial. Over half the states already have programs that allow parents to select a public school for their child.[52] In some states, families must choose among schools within their local district; in others, families can select schools from outside districts. In 1995, seven states passed new bills allowing or expanding postsecondary or dual enrollment programs — in which students can attend high schools, but take certain classes in universities or colleges — and four states added or strengthened interdistrict choice programs.[53]

- **Charter Schools**

Charter schools are semi-autonomous public institutions that operate outside of most existing education rules and regulations. Such schools have been authorized in 20 states. Charter proposals spell out how the schools will be run, what will be taught, how success will be measured and what students will achieve.

Charter schools expand families' options — within the public school system — and effectively transfer substantial authority to selected schools and communities. While charter schools face serious obstacles in their initiation, more than 200 have already been approved.

Charter schools tend to offer smaller, more personalized learning environments in which each participant shares in — and is responsible for — a common vision of the school's academic focus or mission. Charter schools are semi-independent from sponsoring entities and represent strong examples of site-based management. Charters give students and their families a wider array of education choices within a public school setting.[54]

Twenty states have passed legislation authorizing charter schools since 1991.[55] Not all charter school bills are created equal: Some create very strong models, allowing multiple agencies to sponsor schools or creating an appeals process for denial of a charter and granting extensive deregulation to all charter schools. Other models are weaker, offering less autonomy for schools and imposing restrictions on who may apply for or teach in charter schools. Given the limited number of charter schools, their impact on the school system as a whole is debatable.

- **Deregulation**

Acknowledging the dizzying array of rules and regulations, many states passed laws in the 1980s allowing schools to apply for waivers. But most schools found the waiver processes burdensome, and few applied. States are now adopting regulatory structures that put the burden of proof on the rule or regulation, rather than forcing schools to explain why they should be exempt. Michigan Governor John Engler and California Governor Pete Wilson have both supported replacing their states' education codes with shorter, less restrictive ones.[56] South Dakota eliminated half of its rules and regulations, shifting authority to local districts.[57]

RETHINKING FINANCE

Between 1982 and 1991, funding for K-12 schools increased by $57.2 billion — or more than 50% (after adjusting for inflation). Per-pupil spending increased by an average of $1,250, or 30%.[8]

For the most part, however, the way in which public schools are funded has not changed. That poses a problem, because the traditional method of school finance does not appear to promote student achievement:

- Financing uses formulas, mandates and reimbursement programs, but few state finance systems use incentives and rewards for school improvement.
- Financing focuses on equity and adequacy, but not necessarily on quality or higher student performance.
- Financing focuses on districts — rather than on schools, where the learning actually occurs.
- Finance decisions are often made by fiscal committees and budget officers, who are not always able to collaborate with education committees and educators.

Between 1982 and 1991, funding for K-12 schools increased by more than 50%. For the most part, however, the way in which public schools are funded has *not* changed.

Since 1989, the school finance systems in more than half of the states have faced legal challenges.[9] And instead of leaving the remedies to state legislatures or local school districts, courts have become increasingly active in devising their own solutions.

The proliferation of litigation and the increasing activism of the courts raise significant questions about the nature of the states' constitutional responsibility to finance public education.

CONNECTING LEARNING AND WORK

Efforts to prepare students directly for the workforce date back to the turn of the century. But it is only since the 1980s that career preparation programs have been seen as a deliberate strategy to integrate high academic standards into vocational majors.

A number of states pioneered these programs more than a decade ago. The "School to Work Opportunities Act," passed in 1994, provided federal seed money to 27 states. The law also called for high standards, career preparation, work-based learning, and college preparation for all students.

LINKING FUNDING AND REFORM: A SURVEY OF STATES AND SCHOOL DISTRICTS

The following examples show how states and districts are using funding mechanisms to initiate, support, inform and reward improved student learning.[40]

1. **Providing incentives, rewards and intervention.** Fiscal rewards or technical assistance is provided to schools based on their progress in student performance. These incentives encourage districts and schools to use resources effectively and efficiently — rather than simply funneling money to schools with high-risk or special-needs students. (Kentucky, South Carolina, proposed in Tennessee)

2. **Earmarking professional development funds.** Recognizing the need for professional development, some states are earmarking a percentage of state aid for this purpose — setting a dollar amount per student or supporting significant staff development through reform initiatives (Kentucky, Massachusetts, Minnesota, Missouri, Ohio, Vermont).

3. **Targeting additional dollars for early childhood and at-risk programs.** States are providing additional money to enhance children's readiness to learn and to help students overcome disadvantages associated with poverty. States must help schools and districts identify effective early childhood and at-risk programs and practices in which to invest (Arkansas, Colorado, Kentucky, Maryland, Michigan, New Jersey, Rhode Island, South Carolina).

4. **Providing schools with budget authority, coupled with accountability.** Schools are gaining authority to use resources as they choose, with the expectation that they will achieve their goals, carry out contracts and improve student learning (Site-based budgeting: Los Angeles; Seattle; Prince William County, Virginia; charter schools with budget authority: 11 states with legislation).

5. **Linking teacher and administrative pay to performance.** Some districts are attempting to base a percentage of teachers' salaries on their performance, not simply on additional university or college courses and years of experience (Cincinnati, Ohio; Douglas County, Colorado; Fairfax County, Virginia). A few district superintendent contracts specify certain performance standards to receive full salary payment or salary bonuses (Minneapolis, Philadelphia).

6. **Conducting money flow studies and expenditure audits.** The U.S. Chamber of Commerce analyzed district and school spending patterns and developed an expenditure model that could help budgetmakers improve student performance. Coopers & Lybrand recently conducted a money flow study in New York City. Arthur Anderson and Peat Marwick fiscal audits are designed to identify noninstructional savings and inefficiencies that could provide additional dollars for classrooms (Arizona, Colorado, Ohio, New York, South Carolina, Tennessee).

7. **Maximizing money for education and other children's services.** A Dayton, Ohio, study found that when dollars outside education were considered, there was nearly three times as much money available to serve the needs of children. States are exploring ways for service agencies to share resources to serve children more effectively (Kentucky, Maryland, Rhode Island, Vermont).

8. **Conducting program cost studies.** Accurate information is needed to understand the price of a quality education. Some states are conducting studies to determine the cost of academic courses, programs and services, as well as resources needed to help students meet performance standards (Kentucky, Minnesota).

9. **Earmarking funds for innovation.** Some states are supplying districts and schools with grants and other funds to launch innovative education reforms. These funds enable staff to take risks. However, such funding must remain stable in order to sustain reforms and the interest of educators (Hawaii, Maine, Nebraska, Ohio, Rhode Island, South Carolina).

Programs that connect learning and work are too new for definitive national evaluation. Anecdotal evidence, however, suggests that participants in these programs are more likely to pursue postsecondary education. A national "tech-prep" program in California held dropout rates to no more than 3% — versus a rate as high as 54% among the general population. At the same site, 79% of tech-prep graduates enrolled in postsecondary programs.

STRENGTHENING SCHOOL SAFETY AND DISCIPLINE

Safe, orderly, drug-free schools usually tops the public's list of priorities. Yet the National Education Goals Panel reports mixed results on this front.[11] Drug use has increased slightly, while alcohol consumption has declined. Students report fewer threats and injuries, but the number of class disruptions has remained the same.

States have responded in several ways. In 1994-95 alone:

- At least 21 states passed legislation to comply with federal requirements for strict removal and long-term suspension of students who bring dangerous weapons to school.
- Eighteen states expanded local authority over disciplinary policy.
- Fifteen states established alternative programs (including "boot camps") or made other provisions for children who are removed from traditional schools because of disciplinary problems.
- At least five states passed laws to broaden the tracking systems for disruptive students or to prevent students from transferring to a new school after being expelled for disciplinary reasons.
- At least six states passed measures to tighten the requirements for reporting student attendance, and to increase parents' and children's responsibility.[12]

In addition to these steps, states have devised a host of measures to strengthen students' values. After vigorous debate, the Utah and Washington legislatures both passed bills describing the kinds of character traits that schools should seek to foster in students.[13] In Washington, instruction is to emphasize honesty, integrity and trust; respect for self and others, responsibility for personal actions and commitments; self-discipline and moderation; diligence and a positive work ethic; respect for law and authority; healthy and positive behavior; and family as the basis for society. Indiana proposed similar language.[14]

Some policymakers are also advocating that sex education classes emphasize abstinence. And many states are exploring the possibility of allowing student-led prayer in schools, as well as the inclusion of religious materials in libraries and classes.[15]

Research suggests that while some of these efforts may produce "transitional" improvements — i.e., by making the school environment more conducive to learning — real gains in student achievement are more elusive. Improving student behavior and performance seems to require more fundamental changes in the teaching and learning process.[16]

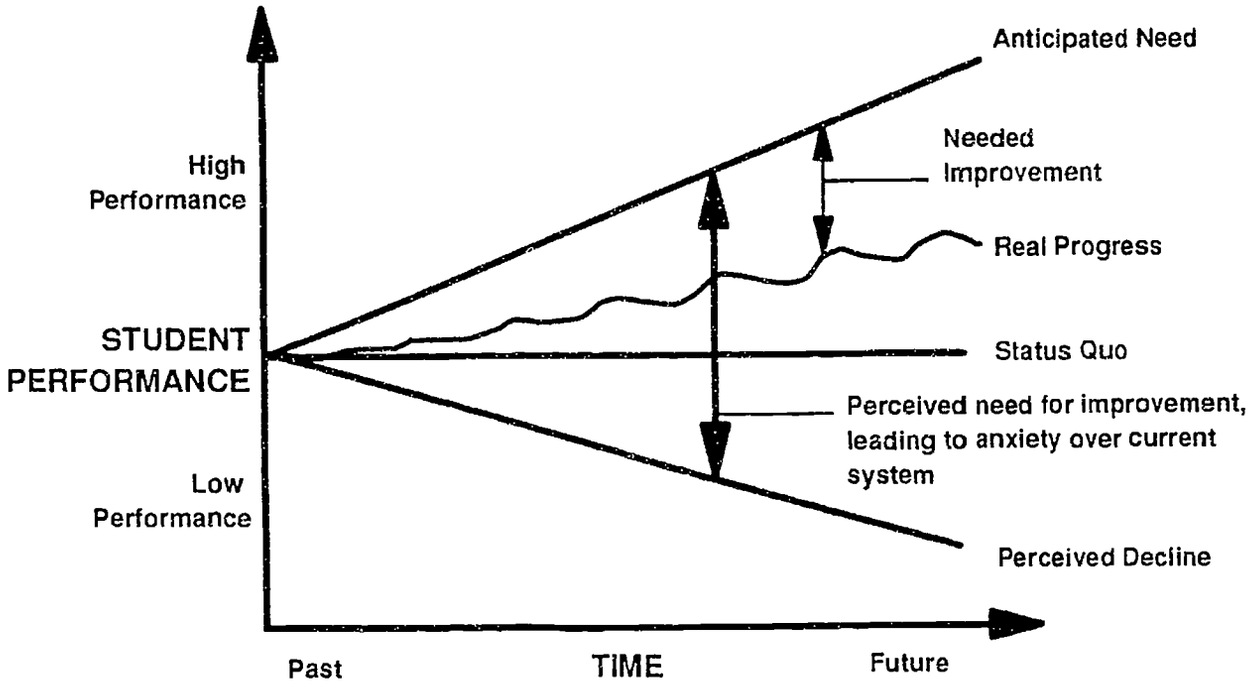
III. THE FORCES SHAPING SCHOOL REFORM

EXPECTATION AND REALITY

The following figure illustrates some of the pressures and challenges confronting education reformers. The wavering line depicts the slow rise in student achievement levels over time: Despite the yearly ebbs and flows, test scores are generally climbing.

This uneven progress stands in sharp contrast to the steeply rising demand for skills, denoted by the diagonal line at the top of the graph. In an information-based economy, the demand for skills will increase over time. The resulting gap — between students' abilities and employers' needs — is likely to widen.

Perceived vs. Real Progress of Education Reform



Nevertheless, educators are making progress. Some reforms have succeeded in boosting student achievement levels. And a growing body of research points to further changes that can help schools close the performance gap.

Unfortunately, though, most of the progress has been slow — and, in the eyes of the public, all but invisible. As the diagonal line at the bottom of the graph indicates, student performance is deteriorating in the public's perception. While most people generally support public education, they are not satisfied with its results or optimistic about its future.[7] The result is an atmosphere of crisis — and ever-louder cries for new and more radical reforms.

This figure illustrates the central public policy challenge of education reform in the current political environment. Students must reach higher levels of performance and be able to sustain this rate of improvement. Leaders must craft and implement policies that close this gap but that are also grounded in the concerns of the public. Policymakers must address public fears of a system in drastic decline, while still incorporating best practices and research about what works — building on the lessons learned in schools that are making progress.

Policymakers must address public fears of a system in drastic decline, while still incorporating best practices and research about what works — building on the lessons learned in schools that are making progress.

Some major reforms, such as standards-based initiatives, may withstand both academic and public scrutiny. Indeed, the standards approach might well fulfill popular demands for improvement in basic education. Unfortunately, though, standards advocates have usually focused more on the recommendations of researchers than on the general public's concerns.

Other, more market-oriented reforms, such as decentralization, deregulation and school choice, may meet the public's demand for radical change. Yet these reforms may fail to produce the improvements their advocates claim. Under choice plans, for example, it is impossible to predict how many students will actually switch schools. Nor is it clear that the prospect of losing students will prompt poor-performing schools to improve, or that such schools will even be able to improve once they are drained of the resources students bring.

Market-oriented reforms also suffer from profound "disconnects": They are seldom tied to other policy initiatives, particularly changes in the teaching and learning process, or even to the public itself. Indeed, market theories may find little favor among a citizenry demanding immediate improvements in safety, order and basic education.

CURRENT PUBLIC OPINION

What do Americans think of their nation's school system? In the 1995 Gallup Education Poll, more than 70% of respondents gave schools a grade of "C" or worse, while fewer than 20% offered a "B" and only 2%, an "A." (Parents are confident, though, that their own children's schools are outperforming the rest: 65% gave their oldest child's school an "A" or "B.")[48]

Worse yet, few Americans see much evidence of progress in the education system: In 1994, 51% of Gallup respondents agreed that schools had deteriorated; only 16% said they had improved.

Moreover, the number of families with school-age children is declining — from 41% in 1974 to 27% in 1994.[49] As fewer people possess personal ties to the school system, support for public education declines.

Even many public school proponents regard private schools as safer and more effective.[50] Public schools, in contrast, elicit a host of concerns; among the most common:

- Disorder and an absence of discipline in classes
- Overcrowding
- Violence, gang activity and drug use
- Inadequate resources
- Low academic standards.[51]

OTHER FORCES

A number of other forces pose challenges for education policymakers.

- **Demographic Changes**

  The nature of the student population being served by public education is changing. Students are more culturally and linguistically diverse and are increasingly influenced by poverty and all of its attendant risk factors. The students' families and communities are changing as well. Even if the net result of these demographic changes is positive in terms of student achievement, the changes challenge the assumptions of the current education system. Traditional school schedules, for example, are incompatible with the needs of many single-parent or two-career families.

  As a whole, American students are more racially and ethnically diverse, more likely to live in poverty and more likely to experience family problems than their counterparts of even a decade ago.[52] But contrary to some assumptions, these changes — occurring at the same time as other shifts in American society — have led to a net increase in student achievement.

  Researchers at the RAND Corporation analyzed this issue by isolating the effects of students' backgrounds on academic performance.[53] RAND calculated that the demographic changes occurring between 1970 and 1990 should have increased student performance levels by approximately 7 percentile points. The factors associated with higher scores — more highly educated parents, fewer children in each family, relatively stable family incomes — should have outweighed the factors associated with lower scores — more single-parent families, growing poverty, greater racial and ethnic diversity.

  The researchers found actual gains in line with their estimates. In fact, the performance of Hispanic and black students increased even more than RAND predicted, while the scores of white students closely matched expectations.

- **Political Realignment**

  The nature of political coalitions is changing. It is increasingly difficult to build and sustain broad-based support for education reform among business, religious, civic and community leaders. Instead, coalitions are forming around individual issues, only to break up and realign around other issues. Such coalitions are more fluid and unpredictable than in the past. In some states, for example, teachers' unions and school board associations have united in opposition to charter schools.[54]

  Moreover, the terms of the political debate are changing. Public confidence in the ability of government to solve social problems and to enhance community life is waning. Voters are demanding more and better services as well as balanced budgets and tax cuts. Above all, surveys show, Americans want accountability — evidence that government programs are efficient and effective.

- **Federal Shifts**

The role of the federal government lies at the center of this debate. Historically, the federal government has played a limited but important role in education, primarily by using regulation and financial incentives to ensure equity. (The Individuals with Disabilities and Education Act is an example.)

The 1994 elections radically altered the membership and leadership of Congress. One of the results has been a fierce debate over the size and scope of the federal government, including its role in elementary and secondary education.

Among other legislation, Congress is considering proposals to reduce federal education spending by billion of dollars and eliminate the National Education Goals Panel. Some members of Congress have also proposed doing away with the U.S. Department of Education itself — by sending several of its programs to the states, eliminating others and transferring many more to other federal agencies; or by merge the department with the Labor Department and the Equal Employment Opportunity Commission. Other bills pending would consolidate vocational-education, job training, adult education and vocational-rehabilitation programs into block grants.

- **Urban Crises**

The conditions of urban America are changing. Crime and poverty are devastating the nation's inner cities and their school systems, prompting bold calls for change.

Indeed, demographic and economic burdens are overwhelming America's urban school systems. Many inner-city students are underachieving, and too few enjoy the opportunity for real academic enrichment. The number of urban high school graduates who are prepared to perform college-level work — or to enter the high-skill/high-wage economy of the 21st century — is woefully inadequate.

State and local governments have addressed these problems in a number of ways:

- The Illinois legislature empowered the mayor of Chicago to replace the elected school board with a stronger "SuperBoard."
- In Washington, D.C., the 103rd Congress appointed a Finance Authority to oversee the District of Columbia Schools.
- In Cleveland, the federal courts mandated a state takeover of the school district.
- Cities across the country — including Denver, Milwaukee, Boston, Buffalo, Kansas City and Albuquerque — have been the subject of studies and legislation to break up, take over, dissolve or privatize school districts.[5]

IV. LESSONS FROM RESEARCH

Research shows that certain reform policies and strategies can make a profound difference in student performance. But the record on other reforms is decidedly mixed.

A recent survey by the National Center on Education in the Inner Cities asked 1,800 education researchers, administrators and policymakers to identify the kinds of reforms that have the greatest impact on learning.[6] Changes in classroom practice topped the list — followed by changes in school-level practice and policy, and improved curriculum design and delivery. Respondents rated changes in federal, state and district policies as the least significant.

Other studies have reached similar conclusions.[7] Reforms aimed at changing what goes on in the classroom — improving the teaching and learning process, strengthening the interaction between students and teachers, enhancing the curriculum — have strong, positive effects on student performance. Reforms aimed primarily at changing how adults interact with one another — reshaping school governance, for example — have substantially less impact on student performance.

Reforms aimed at changing what goes on in the classroom have strong, positive effects on student performance. Reforms aimed primarily at changing how adults interact with one another have substantially less impact.

What accounts for the difference? Several explanations are possible. Reforms that are removed from the classroom must often pass through multiple levels of government, delaying their implementation and diluting their effectiveness. Such reforms are also frequently stripped of resources or rewards. And ultimately, many "street-level bureaucrats" — including teachers — may prefer their own judgment of what's best for their students to that of legislators or central administrators.

Virtually all sides in this debate can claim some empirical evidence in defense of their positions. But current research still contains many holes, and definitive proof of success for any single reform is rare. Moreover, no single solution is appropriate for every school; each must adopt a strategy that best suits its needs.

Some of the latest lessons from school reform are summarized on the following page.

SCHOOL RESTRUCTURING

The definitions of restructuring and reform vary for different researchers and policymakers.[58] "Restructuring" generally refers to school-level measures aimed at:

- Implementing world-class standards that describe what all students should know and be able to do
- Matching curriculum to new standards
- Adjusting instruction, scheduling and learning tools to help individual students meet the new standards
- Changing the tests used to assess achievement of the new standards
- Changing the working environment so that teachers can learn continuously
- Rewarding initiative and innovation
- Focusing the school culture on students.

The reforms most likely to succeed seem to be those that give teachers and students a clear and common vision of their school's direction.

"Reform" generally refers to state- and district-level initiatives that support and encourage school restructuring. The term also can be used to describe school-level improvements that take place within the conventional structure.

The number of schools engaged in restructuring has grown rapidly in recent years. In fact, nearly all of the respondents in a 1994 study — representing one-third of the nation's regionally accredited public and private high schools — reported at least one major reform under way.[59]

Reform	Proportion of Schools Planning/Implementing
Cooperative learning	91%
National Council of Teachers of Mathematics standards	88%
Shared school governance	82%
Alternative assessment techniques	74%
Interdisciplinary teaching	62%
Block scheduling	38%
School within a school	34%

A 1989 study by Valerie Lee and Julia Smith found 46% of schools engaged in at least three of 12 identified restructuring practices.[60] These practices included interdisciplinary teaching teams, flexible time for classes, independent study and mixed-ability classes, as well as some of the other reforms listed above.

Lee and Smith's study also demonstrated the benefits restructuring can yield in student achievement. Using data from the 1989 National Educational Longitudinal Study of 11,000 students from 820 high schools, the researchers found that restructured schools outperformed traditional schools by 30% in mathematics, 24% in reading, 29% in history and 20% in science (based on the gains in% correct between the 8th and 10th grades).

Another form of restructuring — "authentic pedagogy" — has also produced impressive results.[61] The approach requires students to make sense of new material in terms of their own experience, to ask and answer questions on the basis of content knowledge and to tackle problems that have value to them outside of the school context. A team of Wisconsin researchers found that implementing this approach would raise student achievement from the 30th percentile to the 60th percentile, regardless of students' race or gender.

The evidence from other restructuring efforts is more ambiguous. "Constrained curriculums," which require students to complete more rigorous courses in order to graduate, formed the focus of three separate studies.[62] None of the studies found any increase in dropout rates, while improvements in test scores were not clear.

In general, the reforms most likely to succeed seem to be those that give teachers, students and others a clear and common vision of their school's direction.[63] Lee and Smith found that when teachers share responsibility for their students' academic success, student achievement as well as student "engagement" — i.e., an increase in positive attitudes toward school and a decrease in inappropriate behavior — improve dramatically.[64]

SCHOOL SIZE

The effects of school size are fairly clear: Small schools perform better than large schools, and the achievement gains of students in small schools are more equitably distributed than in large schools.[65]

Deborah Meier, who has opened and run several small and highly successful schools (including New York City's Central Park East), concludes that:

> Small school size is not only a good idea but an absolute prerequisite for qualitative change in deep-seated habits, not just in rhetoric. And it doesn't depend on new buildings, just using the ones we have differently.[66]

It is, nevertheless, difficult to determine whether school size is directly related to student performance — or whether the key lies in some other factor that small schools may share.

The benefits of smaller classes are less clear-cut. Reductions in class size alone do not consistently support increases in student achievement — unless class size is extremely small.[67] But reductions in class size can enhance the effectiveness of other reforms.

SITE-BASED MANAGEMENT

The logic of site-based management (SBM) is certainly appealing: Different communities have different needs, and those closest to the students themselves — their parents and their teachers — are in the best position to make appropriate decisions. The implementation and the effects of SBM, however, are not nearly so straightforward.

The definition of site-based management varies widely; in fact, many of the models that have been adopted do not actually involve the local management of schools. Nor do most of the models address external constraints to decisionmaking or extend authority over budget and hiring and firing decisions.

Systematic research on the effectiveness of site-based management is scarce. Among 800 studies of SBM programs, only 70 studies incorporated an evaluation component, 20 used a systematic methodology, and just seven included any quantitative assessment of student performance.[68] Only two of these studies established a positive link between site-based management and student achievement. In general, SBM has proved difficult to implement and appears to be ineffective when practiced in isolation from other reforms.

According to another review, almost all SBM programs contain vague goals and lack any real connection to student performance. Schools tend to see site-based management as an end in itself, rather than as a tool to boost student achievement.[69] As researchers at the RAND Corporation concluded, it is "too soon to know whether significant governance changes improve schools educationally, but not too soon to see that decentralization efforts can fail to produce meaningful governance changes."[70]

One of the more promising SBM efforts was launched in Edmonton, Canada, during the 1970s.[71] Edmonton has made considerable progress in restructuring its 200 schools, which serve more than 75,000 students. Over the past 25 years, the school district has devolved authority for program design, school resources and accountability for student performance to individual schools. The central office has focused its efforts on measuring results, holding various constituencies in the district accountable for student achievement, and providing schools with "customer" services.

Among the keys to successful site-based management — in Edmonton and elsewhere — is teacher participation. By fostering a sense of collective responsibility, increasing accountability and enhancing organizational learning opportunities, SBM programs that involve teachers often produce stronger student outcomes.[72]

SCHOOL CHOICE

Public school choice enjoys broad popular support, although fewer Americans favor spending public funds on students who attend private schools.[73] In the 1995 Gallup poll, 69% of Americans favored public school choice, while only 33% favored private school choice. And according to a survey by Public Agenda, nearly half the nation would rather fix the public schools than spend public money on children in private schools.

Public Agenda also found, however, that most parents would send their children to private schools if they could afford to do so. Parents cite better discipline, higher standards and smaller class sizes as chief advantages of private schools. A recent Harvard study also found that parents who choose their children's schools appear more satisfied — especially with their access to teachers and staff — than other parents.[74]

Yet the Harvard report also revealed inconsistencies in the effects of choice on the actual level of learning in one city. Research conducted in Milwaukee, for example, showed that city's choice program did not boost student performance.

This research suggests that choice may not be an effective stand-alone reform strategy. Choice is meaningful only if families have clear information about high-quality and distinctive schools — and if enough families choose schools outside their neighborhood, thereby introducing pressure for improvement. Such improvement hinges, in turn, on reforms that directly address the teaching and learning process.

MASSACHUSETTS'S "INFORMED CHOICES"

In 1991, Massachusetts introduced an interdistrict choice program in which school districts could participate voluntarily. A 1993 reform package expanded that choice program to allow parents to choose the schools their children would attend. The state makes information on the schools' characteristics and performance available to parents through several regional centers.

Overall participation is limited but growing: In 1991-92, roughly 1,000 students participated; by 1994-95, more than 5,000 students were participating.[75]

REFORM NETWORKS

Many schools are implementing education reforms with the assistance of national, regional and local networks, such as the Coalition of Essential Schools or Success for All. These networks link schools to educators with expertise in particular reform strategies and to other schools implementing similar reforms.

Membership in such networks is growing steadily. By spring 1995, the total number of schools affiliated with five of the largest networks exceeded 2,500.[7] While this represents only 2% of the nation's schools, many of these networks have doubled their membership in recent years.

Some of these networks have demonstrated a positive impact on student achievement. But because they affect only a tiny fraction of the school system, the overall impact has been minimal. New Mexico and other states are exploring ways to encourage schools to participate in reform networks. The New American Schools effort, a collaboration among the New American Schools Development Corporation, ECS and a number of reform efforts, is working closely with 10 states or large cities to support schools involved in networks.

Many state-initiatives described in this report — including decentralization, choice and charter schools — could benefit from integration with reform networks. Closer ties to state policymakers also could enhance the networks' ability to effect reforms.

The following summary describes some of the largest reform networks and evidence of their impact on student achievement.

Some reform networks have demonstrated a positive impact on student achievement. But because they affect only a tiny fraction of the school system, the overall impact of these networks has been minimal.

- **Coalition of Essential Schools**
  (900 affiliated schools)

  Based on the work of Ted Sizer of Brown University, the Coalition of Essential Schools redesigns American high schools for better student learning. The coalition's work is guided by "Nine Common Principles" that schools adapt to their own settings. These principles focus on helping adolescents learn to use their minds well.

  The Annenberg Institute of School Reform recently analyzed research on the effectiveness of the coalition's approach. The institute found "strong empirical evidence for the theory behind the Nine Common Principles. If a school bases its curriculum, pedagogy and organizational structure on the principles, it will provide high-quality student learning for students."[8]

Data from individual coalition schools show decreased dropout rates, increases in the number of students entering college and reductions in disciplinary problems.[78]

Noble High School, a Coalition school in Maine, has seen dramatic improvements in students' academic performance over the past four years. For the first time since state assessment began in the late 1980s, students in this school scored above the state average in every category. The proportion of students performing in the top quartile increased dramatically over four years — rising from 19% to 31% in mathematics, and from 19% to 25% in reading. The number of students scoring in the lowest quartile dropped almost in half in reading and by a third in mathematics. In 1990 there was one Advanced Placement (AP) course with seven students enrolled; in 1995, there are 10 AP courses with more than 100 students enrolled.[79]

- **Accelerated Schools**
  (700 affiliated schools)

Created by Henry Levin at Stanford University, the Accelerated Schools project was launched in 1986-87 to bring at-risk students into the academic mainstream by providing experiences typically restricted to gifted and talented students. Key principles include:

(1) Students, parents and staff unite around a school "dream"

(2) Students, parents and staff make informed decisions and take responsibility for the consequences.

(3) Teaching and learning situations build on capacities, rather than weaknesses.

Solid data from early sites, in which the program was implemented fully, show dramatic gains in student mathematics and reading scores and in the percentage of students performing at or above grade-level in those subjects. Recent research on state-supported efforts to expand the program have shown improvements in attendance and discipline, but mixed results in student achievement.[80]

- **School Development Project**
  (500 affiliated schools)

Based on the work of James Comer of Yale University, the School Development Project is designed to bridge the gap between the attitudes, values and behaviors children develop at home and those they are taught at school. The project addresses learning/behavior problems as conflicts of class, race, income and culture between children's home and school environments — not as faults of the children themselves. Studies of the School Development Project conclude that when the project is thoroughly implemented, significant changes in school climate — as well as improvements in behavior, attitude and academic performance — result.[81]

- **Success for All**
  (300 affiliated schools)

Developed by Robert Slavin at Johns Hopkins University, Success for All strives to ensure that every student perform at grade level in reading, writing and mathematics by the end of the 3rd grade. The program focuses on prevention, early intervention, improved classroom methods and individual attention. It can be used to address students' problems inside and outside the classroom. One of the most thoroughly studied school reform networks, Success for All has strong data on student progress in schools where the model is well implemented. Students in the program post stronger reading gains than 70% of control students. Success for All students outperform control students by about three months in first grade and by almost seven months in third grade. The program's impact on reading gains for students in the lowest quartile is consistently larger than for students in general.[82]

- **Public Montessori Schools**
  (165 affiliated schools)

Montessori schools, designed to promote independent learning and thinking skills, have been the subject of research for decades. In one review of 224 studies, Montessori preschool demonstrated benefits among children of low socioeconomic status — even among those who had participated for fewer than three years.[83] In another study, 84% of Montessori graduates scored above the 50th percentile on the Iowa Test of Basic Skills.[84]

- **Re:Learning**
  (12 states)

Re:Learning is the result of a collaboration between ECS and the Coalition of Essential Schools. Based on the coalition's Nine Common Principles, this effort seeks to create change through a powerful vision of effective teaching and learning from "schoolhouse to statehouse." Since 1988, the Re: Learning partnership has helped schools redesign their teaching and learning strategies, and asked state leaders to waive or change key policy barriers to allow schools to make critical changes.

In Missouri, Re:Learning has shaped education policymaking and provided connections between various statewide reform initiatives. Among the major policy initiatives influenced by Re:Learning:

- Decentralization of teacher professional development to regional centers and individual schools, supported by a state funding stream (2% of annual state appropriation)
- Preliminary work on a new state assessment program designed around a set of "authentic exhibitions," which are to be embedded in classroom instruction
- Implementation of K-12 student achievement standards.[85]

In New Mexico, in schools that participated in Re:Learning for three years, 60% of the students performed at or better than average on the state writing test. Among schools in their first year of Re:Learning, only 33% of students performed that well.[86]

- **High Schools That Work**
  (19 states, 400 sites)

Formed by a partnership of states, school systems and school sites, the Southern Regional Education Board (SREB) State Vocational Education Consortium launched the High Schools That Work network in 1987. The network stresses high-expectation college preparatory and tech-prep programs, work-based learning, teamwork among academic and vocational teachers, and continuous student assessment and program evaluation. All career-bound students must take four English credits and at least three credits each in mathematics and science, as well as courses in a vocational major.[87]

Between 1990 and 1993, SREB found that among the seven most-improved schools (in Alabama, Tennessee, North Carolina, West Virginia, Delaware, and South Carolina), the gap in achievement scores between career-bound students and college preparatory students nationally for reading, mathematics, and science closed by 22%, 12% and 23%, respectively.[88]

- **National Science Foundation's Statewide Systemic Initiatives**
  (24 states and one territory)

The National Science Foundation (NSF), in collaboration with 24 states and one territory, is engaged in a multi-year effort to improve the quality of mathematics, science and technology education for all students by systemically changing the education system. Two companion NSF programs, the Urban and Rural Systemic Initiatives, will support similar reforms in the nation's largest cities and poorest rural areas.

States with NSF Statewide Systemic Initiatives are funded by five-year NSF grants of up to $10 million. States are expected to:

- Develop high academic standards in mathematics, science and technology education
- Adopt rigorous curricula and assessments reflecting the standards
- Align state and local policies in support of the standards
- Expand opportunities for teachers to enhance their knowledge of subject matter content and to learn new approaches to curriculum, instruction and assessment.

The fall of 1996 will mark the end of the five-year grant for the first cohort of nine states. At that time, student achievement data on the statewide systemic initiatives will be made available. Meanwhile, states have expanded professional development opportunities for teachers, developed regional centers, aligned state assessment programs with their standards, engaged the public through media campaigns and other programs, and reformed higher education and teacher preparation.[89]

- **New American Schools**
  (10 cities and states)

  The New American Schools initiative is a national partnership among the New American Schools Development Corporation (NASDC), ECS and seven innovative school designs, developed by independent groups through financial support from NASDC. These designs include Audrey Cohen College, ATLAS Communities, Co-NECT Schools, Expeditionary Learning Outward Bound, Modern Red Schoolhouse, National Alliance for Restructuring Education and Roots and Wings. The New American Schools designs are expected to dramatically improve student learning because they are based on comprehensive reform and require the support of the school and community. Implementation of the designs in 10 cities and states across the country is being supported in part by grants from the Annenberg Foundation to ECS and NASDC. Although the RAND Corporation will be monitoring the success of these designs in the future, some evidence is already available:

  - In Prince George's County, Maryland, an ATLAS elementary school reported increases of up to 30% in reading scores.
  - NAEP reading scores for students in the Accelerated Learning Lab School in Worcester, Massachusetts (a Co-NECT site) rose from 32% in fall 1993 to 45% in spring 1994.
  - In Kentucky, 87% of the National Alliance schools received cash awards for improving student performance in 1995, compared to 37% of schools statewide.
  - In Maryland, Roots and Wings schools recorded substantial gains in third-grade language, mathematics and science performance; and in fifth-grade reading, language, mathematics, science and social studies performance.[xi]

State-level policymakers face a challenge when supporting school improvement efforts. They must implement policies based on lessons from research and experience that will close the gap between what students learn in school and the skills and knowledge they need to succeed in the next century; and they must ground their solutions in public solutions over safe, orderly schools in which students master essential skills.

In considering all reform efforts, policymakers generally must struggle with a scarcity of quantitative data on school restructuring initiatives that can help them support these efforts. The approaches described above are based on years of research, and the preliminary results are highly encouraging. Many of these efforts also involve long-term evaluations.

But restructuring schools takes time, and state policymakers still face a shortage of evidence describing strategies that work. Without such evidence, it is difficult to build support for large-scale reforms.

V. RECOMMENDATIONS FOR POLICYMAKERS

The following recommendations are intended to help state policymakers develop and manage reforms that bridge the gap between student performance and workplace demands — and build lasting support for public education.

BALANCE PUBLIC CONCERNS WITH RESEARCH

Policymakers, especially elected officials, are and should be responsive to public concerns. Leadership, however, demands more than mere responsiveness. Even as policymakers respond to public fears about violence and the perception that schools are deteriorating, they can move the public toward a more informed and comprehensive understanding of which education reforms will address public concerns and raise student achievement.

State education leaders have a responsibility not only to translate research and effective practice into policy, but also to help the public understand what they are doing and why. Policymakers must explain how a more integrated approach to education reform will result in safe, orderly schools in which each child learns the basics first and then achieves much more.

State education leaders have a responsibility not only to translate research and effective practice into policy, but also to help the public understand what they are doing and why.

FOCUS ON THE SYSTEM

Standards that describe what students should know and be able to do serve as an anchor for reforming assessment, curriculum frameworks, instruction and teacher preparation. But other efforts can become disconnected and incoherent, absent a clear strategy for systemic reform.

Charter schools, choice and site-based management, for example, are not ends in themselves, but rather means of deregulating schools with the expectation of boosting student achievement by giving parents and students more choices. Coordinating these and other reforms can produce a restructured education system that offers a range of distinctive, high-quality schools. The piecemeal implementation of reforms, on the other hand, may change only the way in which adults in the system interact with one another.

STAY THE COURSE

The research summarized in this report underscores the importance of continuity: Policymakers must be willing to back reforms for several years, allowing reforms to be implemented and to produce results.

The public overwhelmingly supports the establishment of higher standards for student achievement in core academic areas. Research and experience support this approach as well. But doubts and disputes inevitably emerge over who should set the standards; over whether the standards, as set, match public expectations; and over whether schools will hold students accountable for meeting them.

Policymakers are taking these concerns seriously. In response, however, they need not abandon the standards-driven reform strategy. Instead, they should introduce more flexibility into the system by giving parents and students more choices of distinctive schools and by holding schools accountable for results.

ENGAGE REFORM NETWORKS

Many of the policies that focus on power relationships among adults, such as SBM, deregulation, choice and decentralization, could benefit from the lessons that local, regional and national school restructuring initiatives deliver. These networks offer a variety of approaches to teaching and learning. This diversity of approaches, thoughtfully implemented by teachers in their own schools, can increase the capacity of schools and districts to take advantage of the new freedoms being considered.

Without the lessons of effective, proven models such as those the restructuring networks provide, school leaders can be asked to do a better job without receiving any directions or assistance. Likewise, working alone, these networks may encounter unsupportive education systems and teachers caught in more rigid structures. For all participants, the risks of isolation — and the rewards of collaboration — are enormous.

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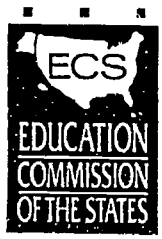

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