MAKING SCHOOLS WORK

Improving Performance and Controlling Costs

Eric Hanushek

with

Charles S. Benson, Richard B. Freeman, Dean T. Jamison, Henry M. Levin, Rebecca A. Maynard, Richard J. Murnane, Steven G. Rivkin, Richard H. Sabot, Lewis C. Solmon, Anita A. Summers, Finis Welch, and Barbara L. Wolfe

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SUMMARY

Making Schools Work: Basic Principles

Economic issues motivate the movement to reform America's schools. Despite ever rising school budgets, student performance has stagnated. Disappointing student performance, in turn, contributes to disappointing economic growth, stagnating living standards, and widening gaps among the incomes of different social and ethnic groups. Yet, although economic issues are central to the problems of education, economic ideas have been notably, and most unfortunately, absent from plans for reform. This report attempts to redress the balance by presenting a plan for education reform that incorporates economic principles.

The report represents the efforts of a panel of economists to bring economic thinking to school reform. The panel concludes that school performance can be improved, without increasing expenditure, through a reform program guided by three broad principles—efficient use of resources, performance incentives, and continuous learning and adaptation. Although perhaps obvious in the stating, these principles are notable in their absence from discussions of school reform.

—*Efficient use of resources.* Educators must strive consistently to use the available financial and human resources to maximize student performance. Too often in the education debate, the meaning of efficiency has been twisted into something unpleasant and counterproductive. Efficiency does not mean a relentless, single-minded drive to cut costs. Nor does it mean reducing education to an assembly-line routine based on procedures certified as "ef-

ficient." What it does mean is that educators should measure both the costs and benefits of various approaches to education—and choose the approach that maximizes the excess of benefits over costs in their particular circumstances. Today, by contrast, the benefits of new plans are often assumed rather than systematically measured, and little effort is made to compare the potential net benefits of programs competing for limited resources. Bad programs are allowed to continue, siphoning off resources that could be productively employed to improve student performance.

—*Performance incentives.* Educators and students, at all levels of the school system, should be rewarded for actions that improve student performance. Education is too complex an endeavor to manage by rote, or, as is often attempted today, by curricula and rigid rules handed down from state and local boards of education. These agencies fail to recognize that teachers and other local decisionmakers inevitably have great leeway to improve or reduce school efficiency. Performance incentives that reward them for progress toward the goals of the schools—while recognizing their freedom to determine how that progress is best achieved—are the best way to focus teachers, principals, and other school personnel on improving education. To create such incentives, schools must define both goals and measures of progress toward those goals more clearly than they have yet done. That task will not be easy. But it is necessary. Without clear goals and measures, the success of any school reform is more luck than design.

—*Continuous learning and adaptation.* Schools must learn systematically from their experience. No matter how successful or unsuccessful current reform programs are, schools will always face the challenge of improving. Yet schools today have no real mechanisms or procedures for managing that continuous process of improvement—for discovering which programs work and which do not, for promoting the good ones and weeding out the bad. Other fields of human endeavor, notably business and medicine, are engaged in continuous experimentation, developing new approaches to the challenges that face them. Schools, we believe, must follow suit. At the very least, better management of the innovation that

now occurs in schools can prevent one community from repeating the failures of its neighbors.

Unlike most existing programs of school reform, our approach cannot be distilled into a single curriculum or program of education that promises to cure the ills of today's schools. Indeed, we doubt that a single answer exists. Instead we describe a process of continuing reform, a procedure for finding and eliminating inefficiencies and for discovering and disseminating improvements. By adopting the economic principles on which this approach is based, American schools can begin to find effective answers to the many problems that they face. Schools structured around these economic principles—such as the Accelerated Schools program for disadvantaged students now instituted in some twenty-five states—have demonstrated that academic performance can be improved while costs are controlled.

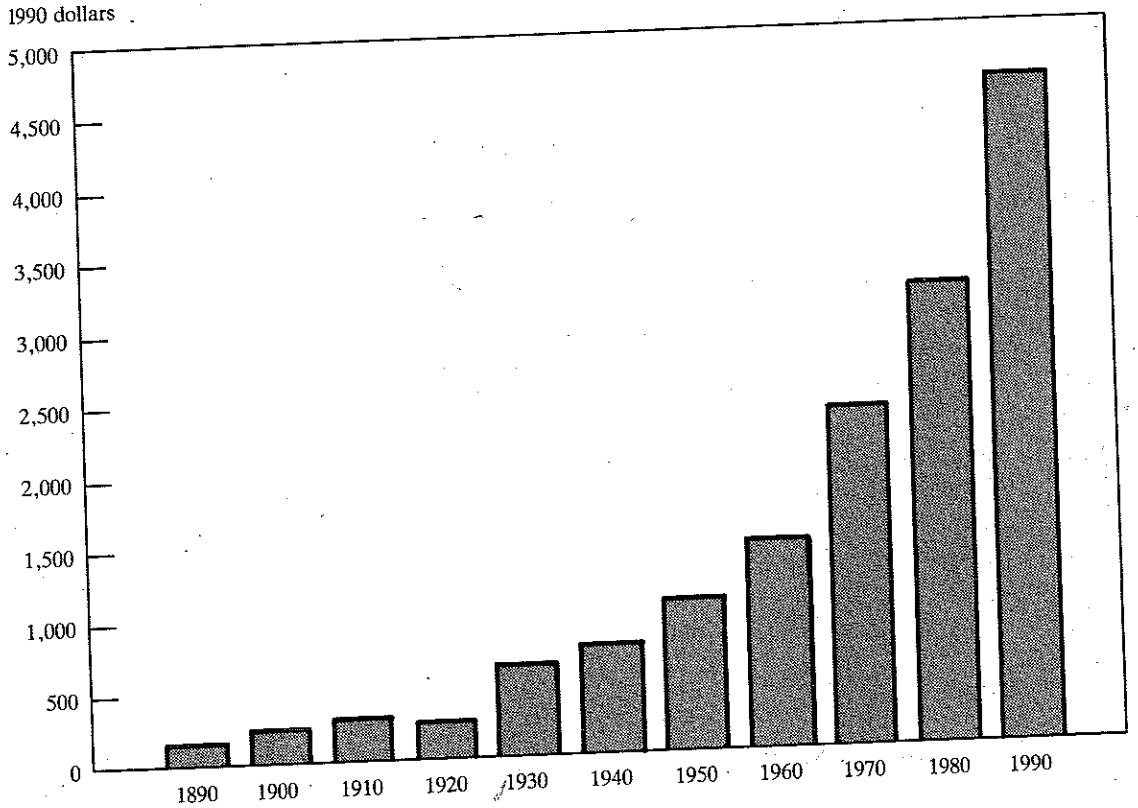
Some have argued that schools are too important to be subject to economic rigor. We argue that, on the contrary, they are too important not to be. Only by working diligently to improve themselves can schools fulfill the trust placed in them by the nation.

Why Worry about Schools?

Schools produce huge benefits for America. For individuals, schooling increases earning power and helps them obtain such intangible goods as health and happiness. For society as a whole, schools foster the productivity improvements that drive economic growth, inform the dialogue of democracy, and reduce the gaps of understanding and income dividing the groups that make up the nation's diverse society. But evidence is mounting that in recent years the costs of education have been growing far more quickly than the benefits. From this observation springs the impetus for reform.

After allowing for inflation, the amount spent on each pupil in America's schools has increased unabated for a century, with

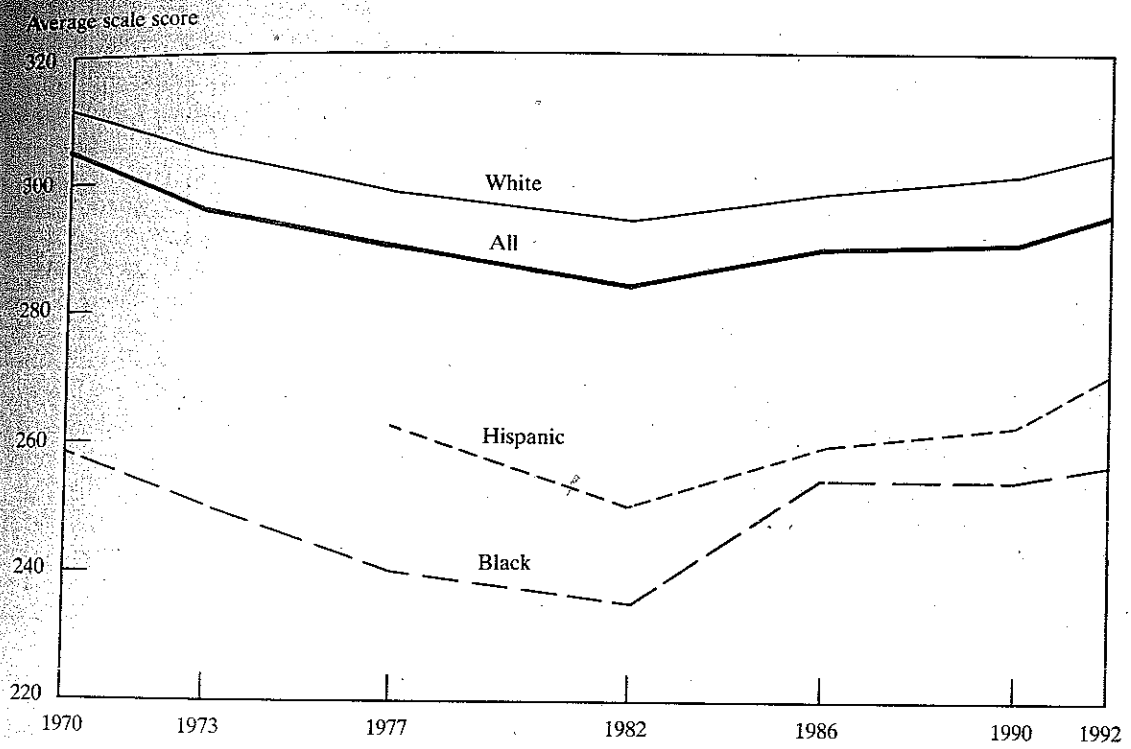
Figure S-1. Real Current Expenditure per Student, 1890–1990



SOURCE: Hanushek and Rivkin (1994).

steady growth at almost 3.5 percent a year (figure S-1). During the past three decades, however, student performance has, at best, stayed constant and may have fallen. Achievement on science exams, shown in figure S-2, is depressingly representative of the performance pattern for the population as a whole and for its major racial subgroups. As the performance of American students has stagnated, students in other nations have caught up or surpassed them. Comparisons of U.S. and Japanese students in the early 1980s showed, for example, that only 5 percent of American students surpassed the average Japanese student in mathematics proficiency. America's future no longer can be guaranteed by expand-

Figure S-2. Science Achievement of Seventeen-Year-Olds, by Race and Ethnicity, as Measured by the National Assessment of Educational Progress, 1970–92



SOURCE: U.S. Department of Education (1993).

ing the amount of schooling its population receives but instead depends on the quality of its schools. But that quality is lagging.

In addition to academic woes, a fiscal crisis looms for America's schools. During the 1970s and 1980s the student population fell dramatically. Aggregate spending on schools thus rose much more slowly than per-pupil expenditures, because declines in the overall student population offset increases in per-pupil spending. But the student population is rising again. Prospective expenditure increases are likely to collide with public disappointment in stagnant school performance—and taxpayers may well resist future expenditure increases with unprecedented insistence.

Box S-1. A Glossary of Key Terms

Although this report is written for others besides economists, we have needed to use several specialized terms. A few of these require careful explanation, because they are general terms with a specific meaning here and because they are frequently misunderstood.

—**Efficiency** means, in simplest terms, doing the best possible with the resources at hand. If a new process improves student performance and costs the same as the one being used, the new process is more efficient. If a new process produces the same student performance as the one being used but costs less, the new process is similarly more efficient. But efficiency does not mean, as it is sometimes interpreted, simply reducing costs. If both costs and performance are reduced by a new approach, it is not necessarily more efficient. Efficiency also must be based on acceptable and full measures of student performance, not just narrow measures such as test scores or dollars. Pursuing efficiency does not prejudge what schools should be producing.

—**Evidence**, as used in this report, is reserved for conclusions drawn from systematic, scientific investigations of schools. Everybody has personal opinions about schools, but these individual, anecdotal observations can be very misleading. A key feature of this work is identifying ideas and results that have stood up to extensive scrutiny and that are supported by data from schools.

—**Performance incentives** are rewards and punishments related to the achievement of

Worse, many of the most popular school reforms have raised costs without increasing student performance. Studies show that reducing class size usually has no general effect on student performance, but because teacher compensation is already the schools' biggest single expense, smaller classes and commensurately more teachers raise costs dramatically. Nevertheless, states and local districts doggedly try to reduce class sizes. Similarly, a good deal of evidence shows that advanced degrees do little to ensure that teachers do a better job in the classroom—while they do enable teachers to command higher salaries. Yet more and more states are requiring teachers to obtain advanced degrees as a prerequisite for entering the profession. The problem is not that school administrators disregard the evidence, but simply that they never see it. A system to measure the effectiveness of education programs is seldom incorporated into school administration or into state and local policymaking.

...outcomes. Incentives may be prom... in advance, such as those written in ...ther contracts, or given more sponta... such as giving a teacher a choice ...rooms assignment after a successful ...year. Incentives may also be monetary (such as year-end bonuses for bringing all students in a class up to grade level in reading) or intrinsic (such as the praise a teacher gets from colleagues for doing a particularly good job). Extensive research confirms that teachers, like others in society, adjust their behavior in accordance with the incentives they face. This research also confirms that incentives have a stronger effect on behavior the more explicit and well defined they are—and the larger the perceived rewards. Accountability, as typically defined, is a special form of performance incentive where people are held responsible for outcomes; often, however, only minimum levels must be met.

—**Value added** is a shorthand term signifying the contribution of schools, programs, or specific teachers to learning. Students start school with some knowledge and cognitive skills developed at home, through friends, or from previous schooling experiences. Students also differ in individual ability. Value added represents the school's unique contribution to a student's knowledge and skills, after taking into account these other sources of learning. Performance incentives and evaluations of school programs must focus on value added to eliminate possible distortions from other educational influences.

Needed Changes

Today school reforms are often sold on the basis of prospective benefits alone. Costs are not considered, nor are costs or benefits systematically measured after the programs are in place. One reason that schools find performance so difficult to improve is that they often do not know how well they are doing in the first place. We believe this situation must change and that educators and students alike must focus on improving performance. We further believe that better performance is best accomplished by the introduction of well-crafted incentives.

Effective incentives require clear definitions of good performance. These definitions in turn require agreement on the goals and objectives of the schools. In the past developing such definitions has proved difficult and contentious. Although we cannot offer an easy solution to the political difficulties of defining a good

education, performance in core academic areas should be paramount. Moreover, it should be measured by a broad array of indicators—and not by narrow, standardized tests alone.

Although many of the ideas underlying new programs of educational incentives are conceptually appealing, little practical experience has accumulated. Somewhat hesitantly, schools have begun to experiment with a wide variety of incentive structures. These systems differ both in how they define "good" performance and in how they reward it. Charter schools and merit schools enable teachers to set up new schools to try out new educational ideas. School choice and educational vouchers allow students and their parents to determine whether schools are good or not by deciding where to attend. Merit pay for teachers and principals and contracting educational services to private firms provide still other performance definitions and incentives. The existing applications have been very limited, nonetheless, making generalizations from them impossible.

Worse, little effort has been made to evaluate these innovative programs when they have been applied or to disseminate knowledge about their results. If schools are to build up the knowledge on which to base reform, a broad program of experimentation and evaluation is necessary. Progress in medicine has been greatly speeded by systematic experiments to test the efficacy of new treatments and to disseminate knowledge about their success or failure. A similar program of innovation could benefit schools.

In general terms, all of the promising incentive programs involve decentralized decisionmaking to capture the energy and imagination of the educators and students in each school. But these incentive programs differ in a crucial way from the programs of "site-based management" being implemented in many schools to decentralize decisionmaking. Much of the current movement treats decentralization as an end in its own right, irrespective of performance objectives. Incentive programs, however, by focusing decisionmaking on student performance, make decentralization a means for improving that performance.

The educational problems of the disadvantaged are frequently treated in an entirely different way from more general

reform, but we believe this separation is largely inappropriate. The average performance levels of disadvantaged students in this country are undeniably low, and society must follow through on its general commitment to eliminate these disparities. But, while programs for the disadvantaged may differ from programs for other students in the details—for example, by trying harder to involve families in education or by coordinating better health and nutrition programs—the most effective approaches will be based on the same principles as more general reform. Careful attention to student outcomes, the development and institution of performance incentives, the evaluation of programs, and attention to both costs and benefits must be central to any plan for improving the education of disadvantaged students.

Altered Roles

Concern about effective use of school resources, emphasis on incentives, and recognition of the importance of evaluation are far from the organizing themes for today's schools. Moving to such a system, with the extensive experimentation that it will necessarily entail, will require the participants in education to take on quite new roles and responsibilities.

In many ways teachers are the most important element of the schooling system, and they must take an active part in developing better schools. Their improved participation will be encouraged, even demanded, by schools focused more clearly on student performance. Yet teaching under new systems of education based on performance incentives and decentralized decisionmaking promises new challenges and requires experience, training, and expectations different from those required today. Care must be taken to balance the need for change with the realities of today's schools. Two-tier employment contracts, for example, are one useful method for introducing changes into teaching while minimizing the risk of alienating the existing teachers, who will remain a substantial portion of the total teacher force for many years to come. Under such systems, new teachers would receive different

contracts from existing teachers, contracts that generally involve fewer tenure guarantees, more risks, and greater flexibility and rewards. The second tier of the contract permits existing teachers to continue under existing employment rules for tenure, pay, and work conditions unless they choose to be covered by the new contract. Other strategies for inducing existing teachers to participate in new systems of education are also available and should be actively explored.

State governments also must change their role substantially. Instead of regulating education by laying down the curricula and procedures that schools must follow, the states should promote and encourage local experimentation with new systems, aid in implementing new incentive systems, and help produce and disseminate information about new programs and their results. States need to define performance standards and explicit goals for students to reach. States share with the federal government a responsibility to ensure equality of opportunity. Disadvantaged students may well require additional resources, even when all schools are using resources effectively. Moreover, states must monitor the performance of local districts and intervene when local performance falls to unacceptably low levels. Such intervention need not, and should not, take the form of threats either to replace local districts with state personnel or to impose new curricula and procedures dictated from state level. Instead the most useful interventions will probably help the students of poorly performing districts to help themselves, through school choice programs or voucher systems that will enable them to move to better schools elsewhere. These new roles entail radical but essential departures from the focus of current state policy. Without venturing into these different and uncertain areas, efforts at improvement will be crippled, if not completely thwarted.

The federal government should take a primary role in fostering goals and standards of academic achievement, developing performance information, supporting broad program evaluation, and disseminating the results of evaluations. The federal government should also take primary responsibility for ensuring equality of opportunity for all citizens, but especially disadvantaged and mi-

nority students. This may, for example, involve expansions of early childhood education, integrated health and nutrition programs, and other interventions to supplement background disadvantages. These roles are consistent with many of the federal government's current functions, but a central consideration in adopting any such supplemental program is how it complements the emphasis on performance proposed for schools. If supplemental programs for the disadvantaged and minorities are to achieve their purpose, they must be subject to the same principles of decisionmaking as are general school reforms.

Local school districts should take new responsibility for setting curricula, managing teaching and administrative personnel (including hiring and firing on a performance basis), and establishing closer links with businesses (particularly for students not continuing on to postsecondary schooling). Although none of these differs from local current tasks, each would be significantly different in content if states removed many of their restrictions on instruction and organization. Moreover, if major decisions devolved to local schools, new emphasis would be placed on management and leadership.

Businesses also have new roles. Although businesses have frequently lamented the quality of workers they receive from schools, few have ever worked closely with schools to define the skills and abilities that they are seeking in prospective workers. More direct input to schools, perhaps coupled with long-term hiring relationships, could aid both schools and businesses. Moreover, businesses could provide students with valuable incentives to perform well in school by making it clear that they base hiring decisions on detailed examination of school transcripts. Today most businesses seem to disregard, more or less entirely, transcripts and other evidence of a student's academic accomplishments. Finally, business managers might have much to teach schools about the effective use and management of performance incentives, for they have much experience that schools lack.

As has long been recognized, parents have a central role in providing their children with high standards, positive attitudes and behaviors, and the motivation needed for success. These continue.

But a new focus on schools is added. Although parents often have few opportunities to play an active role in schools today, they have a crucial part in many incentive-based systems of school management. Systems of school choice require parents to decide which school offers the best opportunities for their children. Systems of decentralized management offer parents a chance to participate in the running of schools and indeed may require it. Effective governance of schools relies on the indispensable feedback of the schools' clients.

An Overriding Perspective

After painting a beguiling description of how new programs should be introduced, new activities undertaken, and bright new futures realized, it is traditional for those proposing new school reforms to plead for more funding. Here we break with tradition. Reform of schools will best be achieved by holding overall real expenditure constant. Schools must learn to consider trade-offs among programs and operations. They must learn to evaluate performance and eliminate programs that are not working. They must learn to seek out and expand upon incentive structures and organizational approaches that are productive. In short, they must be encouraged to make better use of existing resources.

Inefficiencies in the current structure of schools are widespread, but interest or pressure to eliminate them is scant. Where there is interest, it is often thwarted by regulations or contract restrictions that do not permit reasonable adjustments in personnel, classroom organization, the use of new technologies, or other approaches that might improve performance at no additional expenditure. The basic concerns of economics, with its attention to making expenditures effective and to establishing appropriate incentives, must be used if schooling is to improve.

Economic discipline cannot be imposed blindly. We recognize that variations in local circumstances, cases of special need, and start-up costs for new programs may require additional finance.

But poor performance is certainly not an automatically convincing case for more money. Quite the contrary.

In the long run the nation may find it appropriate to increase school expenditure. It is simply hard to tell at this point. But expanding resources first, and looking for reform second, is highly unlikely to lead to an improved system—a more expensive system, certainly, but one with better performance, unlikely.