

# Using Performance Indicators to Hold Schools Accountable: Implicit Assumptions and Inherent Tensions

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As reformers have sought to improve the academic performance of public schools in the United States, they have employed widely varying strategies. Recently, several states have combined two of these strategies to improve the academic performance of schools: performance indicators and accountability.

In this article, we examine the high-stakes use of educational indicators to hold schools accountable for the academic performance of their students. Drawing chiefly on examples from California's Public Schools Accountability Act of 1999 (PSAA), we examine the assumptions on which this strategy is based, revealing a quasi-market rationale. Then, we place the assumptions against the literature on the use of educational indicators to identify issues that might arise with implementation, uncovering fundamental tensions that could undermine the intended consequences of holding schools accountable for attaining specific levels on performance indicators.

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To set the stage, we begin by briefly examining the history of educational indicators in the United States and discussing the several uses of indicators that have been proposed by educational reformers.

## Background

The backdrop against which the use of performance indicators in educational accountability systems arises has two revealing dimensions. First, the United States has a long history of compiling educational indicators. Second, the use of indicators as accountability standards is more feasible than other high-stakes uses of indicators that have been proposed by educational reformers.

### *History of Educational Indicators*

Although educational indicators recently gained widespread attention as tools of educational reform and improvement, they actually have had a long history in the United States. That history began in 1867 when the U.S. Department of Education was formed to collect and report educational statistics. The recent interest in using educational indicators as policy tools can be traced to the successful use of economic indicators by policy makers to stimulate economic development in the 1960s (Burstein, Oakes, & Guiton, 1992; Shavelson, McDonnell, & Oakes, 1991). Enthusiasm for indicators as policy tools waned when policy makers were unable to use social indicators to craft programs that effectively addressed the nation's social ills in the 1960s and 1970s.

Despite these mixed results, reform-minded policymakers and scholars tout the potential of educational indicators as tools to improve the performance of public education. The recent emergence of educational indicators can be traced to the 1983 publication of *A Nation at Risk* and other reports that cited statistics in documenting the failure of public education (Bryk & Hermanson, 1993; Burstein et al., 1992; Selden, 1994). This led to the creation and distribution of the Secretary of Education's "Wall Chart," which offered state-by-state comparisons on indicators that included SAT scores and per-pupil expenditures (Selden, 1994). Indicators seemed to provide concrete evidence of the ills plaguing education. Soon, however, indicators began to be viewed as being capable of more than simply describing problems; they came to be seen as tools of reform and improvement.

*Varied Uses of Indicators and Their Relative Feasibility*

Reformers and scholars promote five different but overlapping uses of educational indicators: to describe, to advance policy agendas, to serve as the basis for accountability, to evaluate policies and programs, and to serve as information management systems. These uses of indicators vary in terms of the degree to which they expose schools and districts to high stakes and the feasibility with which they can be implemented. Here, we should note that most discussions of educational indicators focus on indicator systems. *Indicator systems* are sets of indicators that are generally conceptualized as reflecting key aspects of an education system (Selden, 1994) and their interrelationships (Burstein et al., 1992; Jones & Neilsen, 1994; Oakes, 1986; Shavelson, McDonnell, Oakes, Carey, & Picus, 1987).

*The stakes involved.* The most elementary use of indicators is to describe the condition and performance of a school or system (Burstein et al., 1992; Edmond, 1992; Nuttall, 1994; Oakes, 1986). Over time, indicators can also be used to track trends and changes (Guthrie, 1990; Oakes, 1986). Some analysts argue that indicators should not be used beyond these descriptive purposes, although there is some disagreement about the utility of descriptive data. Shavelson, McDonnell, and Oakes (1989, 1991) contended that indicators cannot replace the political process for setting goals and priorities and thus have only limited capacity for informing policy discussions. Bryk and Hermanson (1993), however, suggested that the ultimate function of indicators is to inform broad and sustained public discourse about the means and ends of education. Description is a relatively low stakes use of educational indicators. Even when indicators are used to inform public discourse, programs, schools, or districts do not face formal sanctions, either positive or negative, depending on their "indicated" performance.

A second and related use of indicators is to advance policy agendas. This can occur on two levels. On one level, indicators are political because they reflect the predispositions of the policy makers who create and use them, marking what is important and what warrants attention (Burstein et al., 1992; Nuttall, 1994). On another level, policy makers can use indicators to promote or defend ideological stances (Ruby, 1994). That is, they can selectively use indicator data to bolster their positions. In either case, although this use of indicators may have high stakes for politicians, it does not directly pose high stakes for schools and districts. Although schools and districts may be affected by the decisions informed by the political use of indicators, they do not face sanctions from this form of indicator data.

The three remaining uses of indicators all can present schools and districts with relatively higher stakes. The first of these is the use of indicators as the basis for holding schools or districts accountable. Indicators can be used to hold systems accountable in a number of ways. The form of accountability that currently is seeing widespread application and presents the highest stakes is “performance monitoring” (Burstein et al., 1992; David, 1987; Nuttall, 1994; Selden, 1994). Here, policy makers establish minimum standards for student outcomes and hold districts, schools, or both accountable for attaining them. This form of accountability forces public schools into a market-like situation as those units that attain the standards are rewarded, whereas those that fail to attain the standards are punished (Richards, 1988).

A second high-stakes use of educational indicators is to provide data for evaluating the effectiveness of policies or programs. Proponents of the evaluative use of indicators argue that it can enhance the rational bases of policy analysis by providing feedback on program effectiveness and efficiency (Nuttall, 1994). Such feedback enables policy makers and administrators to bolster effective programs, adjust marginal ones, and reduce or close those that are found to be ineffective. In this use of indicators, the stakes can be high for programs and their administrators. Programs for which indicator data indicate a lack of effectiveness face the possibility of elimination.

The final way in which educational indicators can be used is to provide data for diagnosing and prescribing treatments for emergent problems (Guthrie, 1990; Oakes, 1986; Shavelson et al., 1989; Smith, 1988). This use of indicators requires the development and operation of sophisticated information management systems (Scheerens, 1991), which continuously monitor outcomes, explain why goals have not been attained (Porter, 1991), and identify interventions that will enhance goal attainment (Shavelson et al., 1989). Some analysts contend that, for information management systems to affect the academic performance of students, they must operate at all levels of an educational system, including the classroom, school, and district. The incumbents of positions at each of these levels may confront high stakes if continued employment and rewards are associated with measured performance. Moreover, information management systems run the potential risk of prescribing wrongful treatments that may have serious consequences.

Discussions of educational indicators typically turn to those uses that have relatively higher stakes associated with them: accountability, and evaluation and information management. This likely results from the desire to use indicators to do more than simply describe the status of schools and districts. Policymakers and scholars alike are motivated to use indicators as tools to enhance the performance of schools. In selecting how to use indicators, a second issue, feasibility of implementation, intrudes.

*Feasibility of indicator uses.* The feasibility of any use of educational indicators is in part a function of its information demands. The issue of information demand is reflected in a debate over the merits of comprehensive versus parsimonious indicator systems. Some authors explain that only extensive systems can accurately model the complexity of educational systems. Oversimplifications could misinform policy makers and practitioners alike. Others, however, encourage the use of parsimonious systems, arguing that more extensive systems would be unmanageable and overly complex (Blank, 1993; Shavelson et al., 1989). Comprehensive systems, they explain, would be very costly to develop and maintain (Oakes, 1986) and would not be useful to policy makers (Porter, 1991), who require manageably clear and concise information. In short, only parsimonious, not comprehensive, systems would be feasible.

Information demand has two dimensions. One, information varies in "density." That is, more or less information is required. Density is a direct function of the number of indicators that make up a system. Two, information demand is more or less complex. Complexity involves the number of relations between indicators that systems examine. Information density and complexity vary substantially across the three high-stakes uses of indicators, ranging from the high density and complexity of information management systems to the moderately high density and complexity of evaluation systems to the relatively low density and complexity of accountability systems.

Information demand would be greatest for information management systems. The information would be dense because data on a large number of indicators would be required to monitor performance, isolate problems, and prescribe fixes. Information would also be complex because information management systems would have to analyze relations among large numbers of indicators to adequately model the operation of schools and districts. These high-information demands would exact high technical and financial costs and thus greatly limit the feasibility of designing and operating information management systems.

Using educational indicators to evaluate programs and policies would also place relatively high information demands on educational systems. Some authors have warned that indicator systems, which they consider to be best suited to revealing the overall status of educational systems, would lack the rigor of design and depth of data analysis required to provide valid evaluations of policies and programs (Shavelson et al., 1989, 1991). Information would necessarily have to be both dense and complex if it were to produce valid evaluations. Information density would arise from the need to include several indicators in order to weigh the impact of particular policies and programs against numerous conditions in school sys-

tems. Information complexity similarly would arise from having to assess the relations between the many indicators. Thus, again, the costs of using educational indicators to evaluate would run relatively high, compromising the feasibility of this use.

This leaves accountability as the last high-stakes use of educational indicators. As it turns out, using indicators as the basis for holding school organizations accountable would place a relatively low information demand on educational systems. In the case of performance monitoring, data would have to be collected on only those outcomes for which school organizations are being held accountable. In some instances, such as the California program that we examine in this article, schools are accountable for just one index, which is composed of student performance on a standardized achievement test and other yet-to-be-determined outcome measures. That's it. Low density, to be sure, and the governing agency does not have to examine the relation between the focal outcome and other characteristics or conditions of schools or districts, resulting in very low complexity.

Given the low information demands of accountability systems, it is a highly feasible use of educational indicators. Therefore, it is not surprising that many states have adopted accountability systems—typically, performance monitoring systems—as a strategy for improving the academic performance of schools (Selden, 1994). It is for this reason that we have chosen to examine performance monitoring systems in this chapter.

### *Accountability in California*

California's PSAA is a new law that is very indicator-oriented. The intent of the law, according to the California Legislature, is to provide for the academic development of every pupil and to remedy the lack of student progress toward achieving a high-quality education (California Department of Education, 1999). The PSAA is based on four components: the state Academic Performance Index (API), the High Achieving/Improving Schools Program (HAISP), the Immediate Intervention/Underperforming Schools Program (IIUSP), and the Governor's Performance Award Program (GPAP).

The API is currently being developed and will be used to measure the performance of schools. Schools will receive annual API growth targets for each school year as determined by the HAISP. Accountability enters the picture as schools who do not meet their growth target are subjected to the IIUSP, whereas those that do meet the target are rewarded with the GPAP. Fiscally, the IIUSP and the GPAP are financed equivalently at \$96 million each.

The API will be a composite of various indicators. The PSAA mandates that the Stanford 9 achievement test (the basis of California's Standardized Testing and Reporting program) comprises at least 60% of the API. The index is under development, so the remaining indicators and their relative weight are unclear at this point. However, the following have been listed as potential API candidates: attendance rates for pupils and certificated school personnel, graduation rates for pupils in secondary schools, indicators addressing the state's curriculum content standards, a primary language test, and a high school exit examination.

The HAISP is the basis of the API annual growth targets. The growth target is the amount of improvement that a school is expected to make in its API score by the end of the school year. According to the HAISP, the State Superintendent of Public Instruction (SSPI) will rank all public schools on the API in decile categories by grade level of instruction. These rankings will determine a school's growth target, and the minimum amount is set at 5%. The SSPI will annually publish the rankings on the Internet, and all schools are required to report their ranking in an annual school accountability report card.

The PSAA's IIUSP is the sanction against those schools who do not meet their annual growth targets. Those schools subjected to the IIUSP are required to select and contract with an external evaluator from the SSPI's approved list. The PSAA is billed as a constructive and collaborative process that includes all relevant stakeholders. Therefore, the external evaluator will work closely with the school site and "community team." This coalition is then required to develop an action plan to be submitted to the local governing board for approval. Under the IIUSP, if the annual growth target is not met after implementation of the action plan, there are sanctions. After the first year, the district governing board of the school is required to hold a public hearing documenting their lack of progress. The governing board must then intervene in the school as directed. If the annual growth target is not met after 2 years of implementation of the action plan, there are more dire consequences. The SSPI legally assumes the rights, duties, and powers of the governing board in respect to the individual school. The principal of the school will be "reassigned," and the SSPI is required to take at least one of the following actions (California Department of Education, 1999):

1. Revise attendance options for pupils to allow them to attend any public school in which space is available.
2. Allow parents to apply directly to the SBE for the establishment of a charter school.
3. Assign the management of the school to a college, university, county office of education, or other appropriate educational institution.

4. Reassign other certificated employees of the school.
5. Renegotiate a new collective bargaining agreement at the expiration of the existing agreement.
6. Reorganize the school.
7. Close the school.

Schools that meet their annual growth targets are eligible to participate in the PSAA's GPAP. There are both monetary and nonmonetary awards. The monetary awards are not to exceed \$150 per enrolled pupil. The nonmonetary awards may include (but are not limited to): classification as a distinguished school, listing on a published public school honor roll, public commendations by the Governor and the Legislature, waiver of some Education Code requirements, and maximum flexibility in the expenditure of categorical funds. The latter two are clearly the most relevant. A school that is eligible to participate in the GPAP may make a request to the State Board of Education to waive all or any part of any provision of the Education Code. Also, a school demonstrating significant growth in its API will be granted maximum flexibility in its expenditure of any new or existing categorical funds that are not otherwise restricted by state or federal law.

### Assumptions Underlying California's PSAA

A close examination of California's PSAA and its components reveals that it is based on a rationalistic conception of school organizations. That is, as we noted earlier, proponents claim that educational accountability systems place schools in a quasi-market environment (Richards, 1988). In markets, firms are oriented toward the attainment of specific goals or the production or provision of quality goods or services (Scott, 1998). Organizations develop or adopt structures and practices that contribute to goal attainment while lowering production costs. Organizations that are successful (i.e., produce high-quality goods or services inexpensively) will thrive. Unsuccessful organizations must adjust or run the risk of going out of business. To enhance success, organizations utilize information from the market and about internal operations to enhance their effectiveness and efficiency. The market does not dictate how organizations should operate but simply sustains success and drives out failure.

Accountability systems create market-like conditions in the following ways. They establish clear performance standards. California's PSAA calls for the development of the API, which will be weighted toward the Stanford 9 standardized achievement test (60%). The other 40% of the index

will include other, yet-to-be-specified measures, such as student and certificated staff attendance rates, high school graduation rates, attainment of state curriculum standards, a primary language test, and high school exit examination. In addition, the HAISP will set growth targets for all schools, which will be based in part on their ranking and will be no lower than 5%.

Just as markets favor successful firms over unsuccessful competitors, accountability systems reward high-performing schools and negatively sanction low-performing schools. In California, the GPAP will reward schools that meet annual growth targets with both monetary and nonmonetary incentives. Schools that fail to meet growth targets after 2 years face a range of consequences, the most extreme of which is closure.

Like their market-driven counterparts, schools operating in accountability systems are expected to draw on feedback from the environment and internal operations to improve performance. The PSAA's IIUSP will require each school that does not reach its annual growth target to work with a state-approved external evaluator. The evaluator will provide the underperforming school with data and work closely with the school team to develop an action plan to meet growth targets. Thus, like a market, the accountability system does not dictate how schools should operate. Instead, it leaves local schools to determine how best to attain accountability standards with the support and input of an external evaluator.

California's PSAA, then, provides all of the elements required to place schools in a market-like environment. The performance index and growth targets establish a clear-cut goal for each school. External evaluators provide information to underperforming schools. The state will not dictate what schools should do to improve performance. Instead, teams of stakeholders develop plans to improve school organization and operations and thus enhance outcomes. Finally, successful schools will be rewarded, whereas unsuccessful schools face a series of possible sanctions, including termination.

### *Compromising Conditions*

On its face, California's PSAA, with its multiple components, seems to provide a relatively straightforward strategy for improving school performance. However, the literature on the use of educational indicators as the basis of accountability systems calls into question many of the assumptions on which the PSAA and other educational accountability systems are based. Specifically, existing evidence, although limited, suggests that many of the elements and conditions that enable accountability systems to exert market-like pressure on public schools do not, and perhaps cannot, in most instances exist.

*Absence of Goal Consensus and Clarity*

As we have noted, the first condition that accountability systems rest on is the clarification of performance goals for schools. The PSAA will present an index that incorporates standardized test scores and other indicators of school performance. This seems simple enough. However, the literature on educational indicators indicates that no one statistic can adequately capture the pulse of education. Unlike the financial sector, there is no "Dow Jones" average for education (Special Study Panel on Education Indicators, 1991). Moreover, several authors raise serious questions about the validity of a small, narrow set of performance indicators (Koretz, 1992). The difficulty begins with the lack of agreement among experts on criteria for determining the health and performance of school organizations (Scheerens, 1991). Accordingly, indicators can only provide the basis for making value judgments, not objective assessments of success or failure. Indicators are also context-dependent, not necessarily having the same salience in schools that serve widely varying communities. Finally, a narrow set of performance indicators cannot reflect the full range of outcomes sought by policy makers and the communities that schools serve. Consequently, improvement plans predicated on data from a small number of indicators might well address only a portion of schools' overall missions.

The lack of consensus, context dependence, and narrowness of the performance indicators on which educational accountability systems are based belie the apparent clarity of goals they provide to schools. As we discuss later in this section, the consequences of the absence of clear goals, coupled with the absence of other necessary conditions for rationality, can distort the responses of schools to accountability standards.

*Limited Use of Information*

A second condition contributing to the presumed efficacy of educational accountability systems is that schools will use information from performance indicators to enhance their organization and instruction. There are two problems with this assumption. First, there is the issue of the quality of information that indicators can provide about schooling. Scholars caution that indicator systems lack the rigor of design and depth of data and analysis to provide valid evaluations of the effectiveness of programs. An absence of valid information will greatly compromise the ability of educators to develop effective school improvement plans.

Second, research on policy development and school-based management suggests that educators may not use information well. Research suggests

that administrators and policy makers do not reliably and effectively use data to make decisions and adopt policies (David, 1988). Instead, they tend to utilize information to bolster their predispositions, often ignoring data that do not support their stance. Similarly, research on school-based management suggests that site councils, even in schools where school-based management is operating well, do not effectively use data. Site councils typically do not carefully analyze or consciously utilize needs assessment data to develop school improvement plans (Malen, Ogawa, & Kranz, 1990).

Moreover, site-level actors are less likely to use indicators to improve instructional practice and programs if they are not involved in building the indicator system (David, 1988; Levesque, Bradby, & Rossi, 1996). As we have noted, according to the PSAA, underperforming schools will be judged on a state-wide performance index and develop action plans based on feedback from external evaluators.

### *Complexity and Uncertainty of Schooling*

The ability of site-level actors to develop effective action plans is compromised by another factor: the inherent complexity and uncertainty of schooling itself. Scholars have long characterized the core technology of schools—teaching and learning—as unclear (Cohen, March, & Olsen, 1972). That is, the causes and effects that comprise schooling and instruction are poorly understood. The literature on educational indicators reinforces this view. Although some authors argue that indicator systems can be used to identify problems and prescribe solutions (Nuttall, 1994; Odden, 1990; Scheerens, 1991; Shavelson et al., 1989), others are much less sanguine. They suggest that such claims are based on an overly simplistic view of schools and ignore the limitations of social and behavioral science research (Bryk & Hermanson, 1993).

The difficulty of providing an adequate representation of schooling and instruction is reflected in the inability of analysts to agree on a conceptual model of schooling, which could serve as the basis of indicator systems. Some authors question the validity of proposed models, criticizing them as overly mechanistic and relying too heavily on a production metaphor (Bramley, 1995; Bryk & Hermanson, 1993).

However, even if a consensus were to develop around a particular model of schooling, analysts disagree on the number of indicators that should be included. Some believe that less information would be most useful, whereas others argue that more is necessary. Some scholars explain that policy makers and educators would be best served by fairly parsimonious models of schooling that would emphasize a small and manageable

number of factors (Blank, 1993; Porter, 1991; Shavelson et al., 1989). Others, however, note that overly simplistic models can misinform policy makers and practitioners by overlooking important factors that may contribute to the performance of schools (Special Study Panel on Education Indicators, 1991). Stecher and Koretz (1996) insightfully summarized this dilemma:

There is a fundamental tension between simplicity and comprehensiveness ... By design, indicators are simple statistics, but they are valued as a way to understand diverse, complex systems. An immediate challenge in developing indicator systems is to balance simplicity with comprehensiveness. A desire for completeness and explanatory power argues for increasing the number of variables. ... However, indicator systems are valuable because they are limited, succinct and parsimonious. ... One cannot achieve both goals ... (p. 58)

*Summary: Missing Conditions*

Thus, three key conditions on which the purported effectiveness of educational accountability systems, such as California's PSAA, rest are compromised, at best, and not attainable, at worst (see Table 1). First, the development of an API and establishment of annual growth targets would seem to present schools with clear performance goals. But, this is compromised by the lack of consensus regarding what constitutes the health and appropriate outcomes of educational systems and the context dependence of indicators. This is exacerbated by the tendency of narrow measures of educational outcomes to mislead local policy makers and educators.

Second, the PSAA and other accountability systems count on local educators to use information regarding their schools' performance and operations to develop action plans. But, narrow indexes of performance lack the depth to provide valid assessments of educational outcomes. In addition, local stakeholders tend not to use data to inform decisions regarding policies and programs, particularly if the data are provided by external sources.

Third, California's PSAA expects local stakeholders to develop action plans that will effectively improve school performance. If they fail, the state can—among other remedies—assign the management of the school to another educational institution or reorganize the school itself. However, this assumes that educators, at some level, possess the understanding of schooling and instruction necessary to derive such plans. Despite years of theorizing and research, educational research has yet to provide such a model. Nor can policy makers and practitioners unequivocally identify the "levers" that can be pushed or prodded to improve school performance.

Table 1  
*Assumptions and Compromises in Accountability*

<i>The Ideal: Assumptions of Accountability Systems</i>	<i>The Actual: Compromises That Accountability Systems Face</i>
Goals are made clear by the adoption of a single performance index and annual growth targets	<ul style="list-style-type: none"> <li>• No consensus over indicators that measure health of system</li> <li>• Indicators are context dependent</li> <li>• Indicators are too narrow, misguiding policy information</li> </ul>
Information can be used to enhance schools	<ul style="list-style-type: none"> <li>• Information from indicator systems lacks depth required for valid evaluations</li> <li>• Educators tend to use information only to support predetermined positions</li> <li>• Educators tend to dismiss information from external sources</li> </ul>
Local educators can develop effective action plans to improve school performance	<ul style="list-style-type: none"> <li>• Social science community unable to agree on a conceptual model of schooling</li> <li>• Complexity and uncertainty of schooling limits ability to control the improvement of schools</li> </ul>

### How Schools Are Likely to Respond

One major assumption about the operation of educational accountability systems does hold: Successful schools will be rewarded; underperforming schools will be sanctioned. California's PSAA includes both. Schools that meet annual growth targets will be eligible to receive monetary and nonmonetary awards from the GPAP. Schools that do not meet their growth targets will, with the assistance of external evaluators, develop action plans to improve their performance. If schools continue to miss their growth targets over a 2-year period, the state will legally assume control over underperforming schools and can exact sanctions that include school closure.

Faced with the possibility of such dire consequences and the compromised ability to use information to develop effective action plans, how are schools likely to react? The literature on educational indicators suggests that schools will respond on two levels.

On the surface it will appear that much has changed. Schools and districts will develop committees, task forces, programs, and new position titles in response to the accountability initiatives. But, most of the activity in schools and classrooms will not be altered. Consequently, the overall operations and performance of schools will not be markedly different. Those schools whose students confront the greatest obstacles to academic success

will continue to perform relatively poorly compared to those schools whose students enjoy the advantages of affluence and cultural capital.

At a deeper level, changes will also occur, but not the comprehensive changes foreseen by those who promote accountability as a stimulus for the overall improvement of schools. The literature on educational indicators warns that narrow sets of outcome measures can be “corrupted” (Oakes, 1989). That is, schools can directly manipulate indicators, thereby invalidating them as measures of the overall performance of schools. If a performance index includes a standardized achievement test, as California’s PSAA does, the most common way to corrupt the index is to simply “teach to the test.” Schools also corrupt standardized achievement test scores by systematically eliminating groups of students who are likely to perform poorly.

The tendency of schools to corrupt performance indicators is directly linked to the faulty assumptions on which accountability systems are built. First, schools are able to corrupt outcome measures because these indicators are typically narrow and reflect only a small subset of the outcomes of schooling. Second, faced with limited data and the absence of a clear and comprehensive model of schooling and instruction, educators are not able to enact reliable school improvement plans. Third, confronted with high stakes, local stakeholders will seek ways to meet performance goals despite the difficulty of improving the overall performance of schools. Under these conditions, corrupting indicators is an available and effective tactic. The problem, of course, is that the organization of schools and overall classroom instruction are not likely to improve; only test scores and other performance goals will be nudged higher.

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