

**EDUCATIONAL QUALITY INDICATORS IN  
THE UNITED STATES: LATEST DEVELOPMENTS**

Leigh Burstein

CSE Report No. 265

Center for the Study of Evaluation  
Graduate School of Education  
University of California, Los Angeles

1986

Work on this paper was partially supported by a grant from the Office of Educational Research and Improvement/Department of Education (OERI/ED). However, the opinions expressed herein do not necessarily reflect the position or policy of OERI/ED and no official endorsement by the OERI/ED should be inferred.

The introductory commentary on national quality indicators portrays a portion of the scenario of efforts in the United States. But any discussion of quality indicators in American education becomes immediately dated once entered on the printed page; the activity level and the state of practice could best be characterized as "every which way at the same time".

Agencies and organizations at both federal and state levels have been actively engaged in indicator developments; moreover, these developments have not been restricted to agencies with a strictly educational focus. A selective sampling of indicator efforts would include at least the following:

- o Since 1983, the U.S. Department of Education has published State Education Statistics charts (better known as "the Wall Chart") which rank states on average scores from widely used college admissions tests (the SAT and ACT) and other educational variables. This publication has received considerable attention from the press, the public, and various policy makers and educational organizations, primarily due to its highlighting of comparisons among states in educational performance and its reliance on college admissions test results for this purpose. Despite cogent substantive and technical criticisms of this practice (e.g., Wainer, Holland, Swinton, & Wang, 1985), strong reaction from state education officials, and the tacit acknowledgement by federal officials that admission testing results reflect only a limited part of the performance picture, the Wall Chart still retains state rankings on these data as a

key component.

- o In November 1984, the Council of Chief State School Officers (CCSSO) issued a position paper in support of state-by-state comparisons of educational achievement and committing their organization to work with federal and state agencies to improve their capacity to gather, analyze, and report on a variety of assessment matters. To carry out their commitment, CCSSO established an education assessment center to maintain and disseminate information on assessment practices of the states and support closer alignment of state testing programs and coordination among international, national, and state assessment activities. This CCSSO center is currently proceeding to implement a comprehensive plan that would include cross-state indicators of educational outcomes, educational context, and educational policies and practices (CCSSO, 1985; Selden, 1986a, 1986b).
  
- o The Center for Statistics (CS; formerly the National Center for Education Statistics) in the U.S. Department of Education has been actively involved in indicator developments in a number of ways. According to the present leadership at CS (Elliott & Hall, 1985), the Department of Education is attempting to define its agenda for future statistical collections and analyses and "has become a goad for development of better measures where available ones are inadequate...of time-series where only one-time research studies are available,... and for theoretical

and empirical studies needed to develop syntheses or indices of information or to relate one set of data to another"(p.8). To carry out its role in this effort, CS has developed plans for the redesign of its elementary and secondary data collection program (Center for Statistics, 1986a; Hall, Jaeger, Kearney & Wiley, 1985); funded a study by the Center for the Study of Evaluation (Burstein, Baker, Aschbacher, & Keesling, 1985) to explore issues surrounding the development of national indicators based on information from current state testing programs; supported the CCSSO to develop state-by-state indicators; and has been at the forefront of new federal commitments to the gathering and reporting of international education statistics (Center for Statistics, 1985, 1986b).

- o Following up on recommendations from Educating Americans for the 21st Century (The National Science Board Commission on Precollegiate Education in Mathematics, Science, and Technology, 1983), The National Science Foundation (NSF) commissioned a National Academy of Science/National Research Council examination of indicators of precollegiate education in science and mathematics (Raizen & Jones, 1985), supported the establishment of a School Mathematics Monitoring Center to gather, analyze, and report data on the response of schools to current reform efforts and their progress toward the reform goals (Romberg & Smith, 1985), and funded the Rand Corporation to develop a prototype system for monitoring national progress in mathematics, science and

technology education (Rand Corporation, 1985).

### The Impetus for Indicator Activity

The veritable avalanche of quality indicators activity in the U.S. is a direct consequence of the push for educational reforms nationally. Since the election of Ronald Reagan in 1980, there have been substantial changes in federal educational policy (Clark and Astuto (1986) provide an insightful analysis of this policy shift). The changes have generally been to reduce the federal role in direct support of educational programs, especially those targeted to specific constituencies. Both guidelines and financial support have been reduced, consistent with the administration's philosophy of state and local control and financing of education, which coincidentally justifies cuts in federal support for education. To maintain their presence in the national educational arena at the same time that federal mandates and costs are reduced, the Reagan administration has chosen to highlight its responsibilities for gathering and reporting information on the status of education and educational reform. The release of What Works: Research About Teaching and Learning (1986), a selective compendium of 41 research findings and related references; and First Lessons: A Report on Elementary Education in America (Bennett, 1986) are indicative of the manner in which the Department of Education intends to exert leadership.

In this manner, the educational policy makers at the federal level can maintain the pressure for increasing minimum performance standards for students and teachers. As Clark and Astuto (1986,p.35) point out,

the emphasis on minimum standards reflects the feeling by the public that the schools have been underachieving, that educationists cannot or will not effect reform on their own, that teachers and administrators are not as capable as they ought to be, that students are not working hard enough, and that expectations for performance by students and teachers have been deteriorating not increasing. The federal level policy makers in education will employ their bully pulpit to advocate higher standards. The states will adopt higher standards. The local educational agencies will implement the standards.

Such is the backdrop against which the quality indicators activities in the U.S. must be interpreted. Strong pressure for improvement, a need for means to assess the impact of educational reforms, and consequent political maneuvering to determine who sets the standards and measures progress toward them. The major new actor is "the public" and its elected representatives. Where once educational establishments at the federal, national (e.g., the national teachers and administrators organizations) and state (chief state school officers, state boards of education) retained much of the functional control over educational policies and practices, one now finds governors and state legislators increasingly delving into the explicit establishment of educational policies and standards and the means to measure achievement and progress.

#### Types of Educational Indicators

Various schemes for categorizing educational indicators have been suggested (e.g., Committee on Coordinating Educational

Information and Research; Jaeger, 1977, National Assoc. of Secondary School Principals, 1985; U.S. Department of Education, 1985). In the currently prevailing climate, there seems to be two major dimensions of classification. The first dimension denotes whether a particular indicator refers to a condition affecting, a characteristic of, or a consequence of the educational system. While these three aspects appear under a variety of names, the label "educational context" aptly captures the set of circumstances, largely beyond its control, with which the educational system must contend. Indicators of the demography of the student population (e.g., ethnic diversity, English language facility, socioeconomic circumstances) of an educational jurisdiction (school, district, state, region) and of its economic resources (e.g., natural resources, degree of industrialization, financing authority) fall within the category of context conditions. Educational policies and practices appropriately characterizes the second category with the terms "outcomes", "achievements" or "performance" denoting the presumed consequences. Much of the current debate, and hence activity, focuses on indicators of the quality of educational outcomes. The remainder of the paper will likewise concentrate on this category of quality indicators.

The second dimension of classification is defined by the units of observation, or perhaps more precisely, the level at which indicators are reported. Virtually any level at which the activities and consequences of the educational system can be examined can be used to generate quality indicators. Right now circumstances for the nation as a whole and for the individual



states receive the most public attention. However, as states begin to implement their own versions of educational reforms, indicators at the level of the local educational authority (either district or school) are appearing more frequently (e.g., California State Department of Education, 1986; Fetler, 1986; Florida Department of Education, 1986).

For the remainder of the paper, we restrict our attention to developments involving nationwide and state-by-state indicators of the quality of educational outcomes with a particular emphasis on measures of student performance. The circumstances and issues with regard to each type of indicator will be discussed briefly. An examination of the conditions affecting the role of the National Assessment of Educational Progress (NAEP) as an indicator of educational quality will then serve to illustrate the practical implications and complexities of attempting to satisfy the often competing purposes of measuring national educational progress using cross-state comparisons of educational performance.

#### Nationwide Indicators of Educational Quality

As with most every other domain of American society, both public and private sectors have contributed to the documentation of national educational quality, especially with respect to measurement of student performance. When policy makers and researchers have raised questions about educational progress in the past (e.g., Harnischfeger & Wiley, 1975; National Institute of Education, 1976; Wirtz et al., 1977), the performance data cited have been drawn from a variety of sources: college admission testing programs; from the commercial test

admission testing programs; from the commercial test publishers (e.g., the Iowa Testing Program); and federally-funded research projects such as national longitudinal studies, compensatory education studies and NAEP. Occasionally, the results from the cross-national studies conducted by the International Association for Educational Achievement (IEA; e.g., Comber & Keeves, 1973; Husen, 1967, National Science Board, 1986) enliven the challenges to existing educational policies and practices.

Each of the databases cited exhibits certain flaws which limit its utility in representing the "total" performance picture. Most suffer from a lack of representativeness to the nation as a whole, either due to the selective populations targeted by the tests (e.g., only college-bound or economically diadvantaged students), or problems in the cooperation rates or reasons for participation. IEA studies in the U.S. and the development of norms for commercially published standardized tests are plagued by the latter problem. Concerns can also be raised about the content representation of each of these performance measures, the standardization of administration conditions, and the frequency with which the tests are administered. Because it was explicitly designed to measure the achievements of nationally representative samples, NAEP stands out theoretically as the best source of data on progress over time although some have questioned its content selection and infrequency (more on this below).

To a great extent, the combination of public and private efforts and data sources remain at the heart of the present efforts

to assess current trends in educational achievement (e.g., Congressional Budget Office, 1986; National Science Board, 1986). But the pressures to bring the databases into line with the perceived needs of policy makers are greater than in earlier times as our discussion of NAEP will highlight.

Similarly, the renewed interest in international educational statistics and commitment to national participation in cross-national assessments of educational achievement (Center for Statistics, 1986b) reflects a marked climatic change from mid 1970's to early 1980's when a few individuals at the National Institute of Education, the National Science Foundation and the then National Center for Education Statistics (combined with the Spencer Foundation) kept the Second International Mathematics Study and other IEA studies alive despite the ambivalence of their agencies toward the endeavor. Strong interest in the private and political sector in international economic rivalry and its perceived connection to the quality of a country's educational system bode well for collections of nationwide data that would be part of a system of international educational indicators in the immediate future, at least until short-range national provincialism again overtakes long-range good sense.

#### State-By-State Indicators of Educational Quality

While the pertinence of nationwide indicators to the issue of interest here is self-evident, the role of state-by-state comparisons warrants further explanation. An essential element of educational reform is state activity since states maintain much of the programmatic authority for education and in most

states, account for the major proportion of the funding of local educational programs. Given the American penchant for competition and the increasingly active role of the private business sector in pressing for educational improvements, it is not surprising that competition among the states has been seen as a significant element in the present quality indicator efforts. The national aspects of state comparisons arise from the means to bring about state-level comparisons of educational quality; that is, who determines the standards against which different states might be compared given the national interest in educational improvement and the blurred lines of demarcation between federal and state authorities (acting collectively) in the definition of national standards?

While the efforts in the area of nationwide measures of educational progress have a longer history, the agenda in state comparisons is currently more active and controversial. As pointed out above, the states, as reflected in the endorsement by the CCSSO, have committed to gathering comparative data. But given the diversity of educational goals as reflected in curriculum guidelines, graduation requirements and orientation of their state testing programs (e.g., Goertz, 1986; Burstein et al., 1985) and of the demography of their student populations and state resources in support of education, the selection of the contents of tests designed to measure educational achievement across the states will likely be an arduous task. The fact that both the federal government through its proposals for redesign of its Center for Statistics data collection activities and the states through the efforts of the CCSSO assessment center are

working to develop such measures can be either a blessing or a curse, depending on the degree to which the two governmental levels find cooperation or confrontation regarding such matters as test contents, program administration, and funding more politically appealing. While the directions suggested by currently circulating idea papers (e.g., Center for Statistics, 1986a; Selden, 1986b) are encouraging, agencies at the federal and state levels have yet to forge a joint commitment to working toward a common ground for resolving conflicts in the domain of cross-state comparisons of educational quality.

#### The Role of NAEP

Recent developments regarding the National Assessment of Educational Progress aptly illustrate the changes brought about by the current wave of interest in quality indicators and the potential for continuing conflicts surrounding its role as a national measure of educational progress. Historically, NAEP can be traced to the desire by the U.S. Commissioner of Education in the early 1960's to fulfill the original legislative mandate of the U.S. Office of Education (the forerunner of the Department of Education) to collect and disseminate information on the condition and progress of education. From 1969 through 1983, assessments of the performance of seven year-olds, eleven year-olds and seventeen year-olds were collected from nationally and regionally representative samples in the areas of writing, reading, literature, citizenship, social studies, mathematics, music, art, and career and occupational development. Measurements in each subject were taken at roughly four- or five-year intervals with sufficient precision to reliably identify

nationwide changes in performance.

For its first dozen years, NAEP enjoyed a period of relative tranquility under the governance of the Educational Commission of the States (ECS), an organization of the governors and chief school officials from the 50 states. During this time it established a reputation as a credible, low-profile, essentially apolitical yardstick of the Nation's educational progress. Among its major strengths were its contributions to the technology of curriculum assessment and to the development of the capacity within states to carry out their own assessments. Operating under the auspices of ECS legitimated NAEP's activities with state and local educational agencies, leading to exceptionally high cooperation and hence nationally and regionally representative samples with unusually high statistical integrity by education standards.

The decision was made early on not to attempt state-by-state reporting of NAEP results. The costs of the sampling such reporting would necessitate was considered to be prohibitive. Besides, such comparisons were perceived to be invidious by those educational agencies whose cooperation was seen as essential to the program's success.

In the broader scheme of things, however, political innocuousness is not necessarily a virtue for a federally funded data collection effort. The failure to establish a higher public profile, both within and outside the educational establishment, provided NAEP with limited leverage in the recurring funding decisions of the federal government. Over time the NAEP program

shrunk due to rising costs and cuts in its appropriations, leading to less frequent assessment than originally intended. Yet the interval between assessments would have had to decrease markedly or some other means found to attract attention away from the annual reporting of trends in college admission test results.

The desire to have NAEP serve a larger role in the formation of educational policies and the measurement of the impact of educational practices was perhaps the major reason why the contract for NAEP was shifted to the Educational Testing Service (ETS) in 1983. ETS's proposed plan (Messick, Beaton & Lord, 1983), echoing an assessment of NAEP conducted by Wirtz and LaPointe (1982), called for an expanded role for NAEP as a "National report card". While promising to maintain the high calibre of the item development work conducted by ECS, ETS proposed other modifications that it believed would enhance NAEP's role in the establishment of educational standards and in policy developments. The proposed changes were primarily technical: a shift from age-level to grade-level testing, more frequent testing in core subjects, a redesign of tests that would encourage the examination of relationships among tasks and between performance and other student characteristics, and a move toward scale-score reporting rather than the item-level performance statistics provided in ECS reports. These changes were seen as a significant shift toward tying performance to the functioning of the educational system, thus potentially making assessment results more useful for educational decision makers while at the same time placing the consequences of their actions

more clearly in the public limelight. Moreover, ETS quickly moved toward active encouragement of state-level use of NAEP performance data by establishing a state assessment unit to facilitate its work in this area.

As the plans for indicators of state-by-state educational performance crystallize, discussions about the source of the testing data for state comparisons have increasingly narrowed toward various alternatives that rely NAEP in some way. In the Fall of 1985, the Secretary of Education Bennett called for a substantial increase in the NAEP testing program while at the same time encouraging states to participate more fully in NAEP. The Center for Statistics' plans for the redesign of their Elementary and Secondary data collection program (Center for Statistics, 1986a) incorporate a revised NAEP in the proposed integrated data system and anticipate that the new system "will be capable of expanding to State-Representative samples". The proposals guiding the implementation of the CCSSO commitment to obtain comparable state-by-state information on student achievement (CCSSO, 1985; Seldon, 1986b) call for the states to "attempt to draw on the NAEP item pool as a means of constructing measures of student achievement" and for increasing the States' role in NAEP in order to insure that NAEP content more comprehensively reflects state perspectives. Independent of CCSSO actions, ETS has already taken steps to expand linkages between NAEP and individual states through a joint testing project with the Southern Regional Education Board in several Southern states (SREB, 1985) and through increasing the number of states carrying out concurrent assessments.



The impending recompetition of NAEP in the current national climate is likely to further expand NAEP's role in state comparisons. A national panel of political, business, and educational leaders working on plans for redesigning NAEP has solicited several position papers which address the question of the use of NAEP for state comparisons. Presumably the panel's recommendations will heavily impact decisions about how actively future NAEP contractors will be in state-level reporting of educational achievement.

There is a certain irony to the increasing attention given to state-level reporting in the evolving role of NAEP. Yet NAEP's own success early on at establishing itself as a credible, essentially apolitical yardstick and its contributions to the development of the capacity within states to carry out their own assessments make it an obvious target of opportunity during this period with its more prominent role for educational assessment in educational policy. Hopefully, the various interests involved in the decisions about NAEP can arrive at a formula that will allow its use in the state-by-state reporting while preserving its integrity as a nationwide indicator. There are certainly technical alternatives for accomplishing these dual goals but whether they are practically and politically feasible remains to be seen.

#### Speculation About Future Developments

Elliott and Hall (1985) challenged educators to participate in the development of measures for assessing how well, or how poorly, their new authorities and funds are working. To this end they posed a set of questions they believe should be

addressed about whether the measures used as education indicators at the state and local level are reasonable. These questions dealt with the content validity of existing achievement indicators as measures of what is taught or should be taught; the strength of the relationships between the indicators and student performance; the alterability of the conditions reflected by the indicators; the understandability of indicators; the usefulness of current means of reporting for various stakeholders; the ability of current indicators to reflect variation in opportunities and performance among important subgroups; the comparability of measures across locales; and finally their susceptibility to distortion. Elliott and Hall also highlighted the nagging concern about whether the media and public officials could be educated to use indicator data appropriately.

This is a noble and thoughtful agenda for the national effort to develop educational quality indicators. It is also an encouraging one coming from federal officials who are well-connected to the implementation of federal policy in this area.

But history has not been kind to wishful thinking about the role that evaluative information actually plays in the highly politicized atmosphere created by the competing interests involved in educational reforms. We can expect the debate around the appropriateness of various measures of educational outcomes to continue. Moreover, there are still virtually no available national data that capture the proximal qualities of educational contexts, resources, and processes as they impact on teaching and learning in schools and on the organization and management of

local educational systems. Yet, without sustained efforts (not to mention substantially increased financing) to improve the quality and program fidelity of measures of educational outcomes and to develop better means to contextualize them by improving the characterizations of the settings from which they are gathered, the national movement toward the development of educational quality indicators will remain largely a goad rather than a guide to successful educational reform.



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