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ABSTRACT
              The role of technology and the measurement of
educational progress are discussed, with an emphasis on the
development of school report cards. Comments are made from the
perspectives of (1) a member of a university community and (2) a
researcher in evaluation and measurement. Efforts to formulate school
report cards in Florida, California, and elsewhere make it apparent
that universities can look forward to extensions of recordkeeping and
reporting for accountability purposes. An evaluation perspective
leads to two concerns: (1) the view of the organizational change or
school improvement that is assumed by the school report card; and (2)
the need for reflection on and evaluation of the school report card
programs. Standardized tests have constituted a key element in school
report cards. The National Assessment of Educational Progress is an
example of the direction that testing should take. Developing
assessments that are meaningful to teachers and learners will require
long-term cooperative efforts of teachers and specialists. It is
concluded that more information does not necessarily mean better
schools or postsecondary education. Technology does not determine the
choices for what a school or postsecondary report card contains or
the system/legislation that fosters the report card. The challenge is
to study the meaning and use that is derived from accountability
measures; develop alternative or multiple assessments, and change
from thinking that a single accountability system or any
accountability system can meet the goal of accountability and the
goal of school improvement. (SLD)

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Technology and Accountability:
Does more equal better? Should accountability programs be accountable?

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Revised version of a Paper presented at a panel on School
Report Cards and the Role of Technology, Council of the
Great City Schools' Fifth Annual Urban Education Technology
Forum Conference, October 17, 1990, New York City.

I have been asked to comment on the role of technology and
the measurement of progress, particularly on the development
of school report cards. These comments will be made from
two perspectives: the first is the perspective of a member
of the university community; and the second is the
perspective of a researcher in evaluation and measurement.
From the first perspective, schools and universities face a
common legislative policy of accountability. From the
second perspective, the view of organizational change and
improvement guiding the current school report card policy
and legislation is one that is top-down, information-driven
and assumes a rational process of change. Both
perspectives lead to a recommendation for reflection on
accountablity--for evaluation of the accountability systems.

Background

By way of background, school (and university) report cards
are the latest push in the accountability movement that has
been underway since the federal initiative in education in
the 1960's and 1970's. Much of the federal expansion or
increased funding role in the 1960s was accompanied by
evaluation requirements that became more and more
prescriptive. Evaluation data were intended to provide the
basis for policy decisions, to retain, expand, or curtail
programmatic federal efforts in education.

The federal initiative expanded state departments of
education and increased both the number of professional
staffs and their levels of expertise. Further expansion of
state level staffs occurred as a function of the increased
proportion of local education funds provided by state
revenues in the 1970's and 1980's. The shift in funding and
staffing at the state level has been accompanied by more
accountability programs designed at the state level, from
minimum competency and basic skills state-wide testing

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programs to the ambitious school outcome and demographic data compilation efforts of the school report card.

While there has been an expansion of accountability programs, a critical tension has arisen. This tension results from the collision of curriculum reform efforts and the drastically expanded use of standardized, multiple choice tests that accompanied the increase in accountability programs. The emerging "revolution" in assessment now underway in the curriculum areas, especially mathematics, science, reading, and writing, is an effort to change the form of assessment in accountability programs and thereby influence practice. The effort to change the approach to assessment attests to the power of the accountability programs to influence practice at some level. This change in assessment procedures does not appear to be a challenge to changes in the basic characteristics of the accountability programs: every pupil testing, with class, school, district, and state level aggregations of data.

The speed of the change in language about assessment has been startling: states and LEAs are struggling to define "authentic" assessment and performance assessment in the curriculum areas. State-wide efforts in performance assessment are evident in Connecticut, California, and Maryland. Clearly, in the measurement or assessment of outcomes, if you will, earnest efforts toward change are in process.

How does the development of accountability programs and even changes in assessment procedures relate to technology and school report cards? The report cards are part of an on-going movement. The technology has provided an underpinning that supports more powerful applications of data collection, analysis and use, and technology has potential in assessment itself. However, the tension with the curriculum reform efforts indicates that there is more at stake than changing the form of assessment in state or citywide accountability programs. The curriculum reforms are part of a broader and fundamental change in our views about learners and teachers. Business-as-usual in the accountability programs needs examination.

The challenge, as I see it, for the members of the Council of the Great City Schools is to critically review current and proposed applications of technology in accountability for their policy implications. This review or reflection needs to be conducted with an understanding of the fundamental change in the view of the teacher and learner that is at the heart of the current curriculum reform efforts. We need to ask several questions: Does more equal better? And more particularly, can we define what we mean by better? How wise is a policy that focuses efforts for school improvement on expanded accountability measures as

reflected in the formulation of school report cards? What alternatives can we create?

The university perspective.

Let me comment briefly on how universities are drawn into the school report card discussion. They are drawn in by two developments: 1) the requirements that school report cards include in some cases data on students as they move to postsecondary education; and 2) the requirements of the U.S. Congress for a report card for postsecondary institutions. In the first development, several states have been at the forefront of the effort to define school report cards. Examples are the legislation in Florida, Tennessee, and California.

In Florida, institutions of postsecondary education are required to report to the Commissioner of Education each term, information on first-time-in-college Florida high school graduates. This information includes performance on regular courses and referrals for remediation in postsecondary education. In Tennessee (McLarty & Hudson, 1987), there is a statewide commissioner's report card and optional school report cards are apparently also in use (The Tennessee School Improvement Project, TSIP). The commissioner's report card includes student outcome data, test scores and diplomas; student process data, AP courses, attendance rates, suspensions, etc.; and other data such as teacher characteristics, licenses; teacher/classroom process data, teacher/pupil ratios.

The optional TSIP is more ambitious than the commissioner's state-wide report card and uses the framework from the more effective schools research literature: a strong instructional focus, a safe and positive school climate, frequent monitoring of student progress, a strong instructional leader, high expectations for student achievement, and strong parent and community involvement), and is optional for schools. The TSIP is viewed as formative in nature--providing information for guidance of the improvement process. (A paper related to the Tennessee project is by Furtwengler, 1986.)

California has an elaborate system (Fetler, 1989). The California report card provides for three types of comparisons: a school with itself, over time; with all schools statewide; and with schools with similar demographic characteristics (based on a composite SES indicator using percent AFDC, parent education or occupation; percent LEP, student mobility). In the last case, a school is compared with the 10% above it and the 10% below it in ranking on the composite SES indicator). It is important to note that California proposes to directly examine equity issues.

Equity issues are addressed by presentations of data by sex and by major ethnic groups.

Variables on the California report card can be grouped into three areas:

1. Status characteristics such as those found in traditional accreditation reports--teachers in license, class size, per pupil expenditures, teacher training, etc.; average salaries of teachers, principals, and superintendents.

2. Outcome variables--achievement, California Assessment Program, locally administered measures, SAT, ACT, drop out rates; enrollments at postsecondary institutions.

3. Process variables--quality of textbooks, classroom discipline and climate, quality of instruction, quality of leadership.

These are a combination of types of data, as with the TSIP. At risk schools are identified and there is a program and time line for improvement.

Fetler (1990) describes the political process in California by which the report card information was negotiated with the Association of California School Administrators and the State Department of Education. He raised the issue of "...whether accountability is best seen as a rational technique for managing change in schools or is it primarily a political symbol" (1990, p.11). He provides examples of where each group--parents, administrators, teachers, legislators, etc., represented their interests, and concludes, "...Even if this result is not the most rational or effective that could be imagined, presumably it still has value in getting people together to work for positive ends" (1990, p. 11).

To summarize, because of the follow-up data on high school graduates required in school report cards, universities in Florida, California, and elsewhere can undoubtedly look forward to extensions of record keeping and reporting for accountability purposes.

The second development drawing universities into the record card accountability program is more direct. Congress is expected to pass a measure requiring colleges and universities nationally to tell prospective students and their parents the graduation rates and crime statistics on their campuses (New York Times, Monday, October 8, 1990, pA1,A15). Congressional negotiators have reached agreement on reporting crime statistics and graduation rates for

athletes by area of sport. The Education Department will be
directed to study the usefulness and feasibility of
compiling figures on graduation rates broken down by
academic discipline, job placement, and job certificate
rates for students, and revenues and spending in athletic
programs (Chronicle of Higher Education, Congressional
Negotiators Approve Graduation-Rates Bill, October 17, 1990,
P. A23, A28). The first reports are due September 1, 1992.

This bill evolved from an original measure that required
only that colleges disclose the graduation rates of their
athletes. The reasoning was stated by Senator Edward M.
Kennedy: "Sunlight is the best disinfectant. Once colleges
begin disclosing this vital information, those with the
poorest records will be under the greatest pressure to
improve" (New York Times, 10/8/90,p.A1).

As with the Florida legislation requiring rankings of
schools on a nationally normed testing program, the Congress
expects that newspapers and others will publish the data
comparing colleges. The data are viewed also as consumer
information, and probably with more justification for
postsecondary institutions than for schools. Problems have
been noted in defining what is a campus, for purposes of the
crime statistics, and what graduation rates mean for
institutions with different populations. Such problems of
interpretation and definitions will sound familiar to school
administrators who have been confronted with drop out rate
statistics and where comparisons are made for schools with
students who have different mobility patterns. (The Florida
legislation does provide for reporting transient students
separately for drop out rate purposes for districts and
schools, 1990 Legislature, CS/NB 931, Commissioner's Report,
pages 139-145.)

While expanded technology supports the gathering of such
data, it will require extensive effort on the part of all
concerned to ensure comparability of records across
institutions and the preparation of accurate large scale
data bases. Further, the preparation of information such
that accurate inferences and meaning are derived from their
publication needs study. This concern with inferences and
meaning leads to discussion below of evaluating the
accountability programs with school record cards.

The evaluation perspective.

I want to mention two concerns from an evaluation
perspective. The first is the view of organizational change
or school improvement that is assumed by the school report
card policy. The second is the need for reflection on and
evaluation of the school report card programs, including a

validity-inquiry framework to guide that reflection and
evaluation.

First, What is the view of organizational change on which
school report cards are based? Organizational change is
assumed to be a rational process, responsive to information
of a particular sort: The information that can be
collected, analyzed and reported by counting and marking.
This view also assumes that the school report card data have
meaning to all users, that is, that users will make accurate
inferences. It also assumes that the school report card
data will be appropriately used. These views can be
characterized as technological in orientation--the
collection of data is good in and of itself, without
understanding the context of professional practice. To my
knowledge, the assumptions of meaning and use are not
substantiated by research. Research on the meaning teachers
and students derive from standardized test results does not
suggest that the assumptions are warranted (e.g., Tittle,
Kelly-Benjamin & Sacks, in press).

To a considerable degree, it is also a view of
organizational change as imposed from the top-down, in terms
of the requirements for several of the school report cards.
An exception is the Tennessee formative evaluation effort,
with the Tennessee School Improvement Project. Overall, the
policy view still seems to be what McLaughlin (1989)
described as implementation, rather than enabling. In
McLaughlin's view, policy makers do not acknowledge the need
to move beyond formal organizational policy and structures
to promote improvement and stimulate change.

The federal efforts in evaluation have, over the long term,
yielded some implications for policy aimed at school
improvements. As McLaughlin summarizes these implications,
they are:

    special projects or reforms aimed at discrete elements of
the education policy system are likely to disappoint;

    policy intending to promote more effective educational
practice must address both (content & process), and
acknowledge the need for the quite different kind of
expertise associated with the management of organizational
change and with improved content;

    there is the need to look beyond formal policy structures
for channels for promoting improvement and stimulating
change--e.g., urban math collaboratives; and

    a focus on removing constraints (to better practice) is
not the same as enabling practice, which may require
different factors such as productive collegial relations and

organizational structures that promote open communication
and feedback.

In McLaughlin's view, the focus is moving from understanding
policy implementation to enabling effective practice. This
focus underscores the essential contribution of teachers'
perspectives as informants and guides to policy.

The insights resulting from reflecting on the evaluations
over time of federal programs suggest the merit of an effort
to reflect on and evalute the expanding accountability
programs that technology has made possible. The need for
reflection on school record cards and the expanded
accountability efforts is evident from research and
evaluation that has been conducted on the basic skills and
competency testing programs.

Some of the research has examined effects on curriculum and
teaching. The state-wide testing programs have indeed
driven the curriculum and teaching, but in many instances in
a negative direction. There are examples of various degrees
of test preparation, coaching, or teaching directly to the
standardized tests in use in these programs (see Ellwein,
Glass, and Smith, 1988; Mehrens and Kaminsky, 1989; and
Shepard, 1990). Teachers in New York city spend months
preparing students for the city-wide tests; comments by
Fetler (1990) suggest the same problems exist in California.
I do not think these problems will go away when "authentic"
assessments are used. The arguments that it is better for
authentic assessments to drive curriculum and teaching seems
to me to be fundementally in conflict with the philosphy of
the curriculum reforms and the efforts to professionalize
teaching. Further, as Campbell (1977) noted years ago,
social indicators that are used for decision making are
likely to be corrupted.

The problems with large scale every-pupil testing for
accountability purposes are becoming more evident as studies
examine the measures both from a technical view point and
from the practices of test preparation that occur in the
school. Without a knowledge of the "opportunity to
practice" the test as a conditional variable, these test
results are largely uninterpretable. The manipulation of
who takes the tests also contributes to the interpretation
problems. For individuals knowledgeable about schools and
testing, little trust can be placed in the large scale
accountability program results. Even Cannell's Lake
Woebegone charge has been supported to a considerable degree
by analyses of nationally normed standardized tests (Linn,
Graue, and Sanders, 1990).

Reflection on and evaluation of school report cards.

Reflection on and evaluation of school report cards would examine the school report card as part of a system that includes their development, preparation, distribution, and use. The role of the publication of outcome information as a causal agent in change would be examined, and there would be study of the validity of the demographic, process, and outcome information collected and reported. Examples of the focus of validity-related studies include the meaning and inferences:

. that relevant groups in the education and larger community derive from the school report cards, and

. that relevant groups in the education and larger community derive from the information and technical support or training programs that accompany the school report cards.

These studies would also include descriptions of the use of the school report cards:

Do they provide necessary or sufficient information to the different members of the education and larger community involved--including students, parents, teachers, administrators, school boards?

What actions are taken by these different groups?

What are the intended and unintended outcomes and consequences of these actions?

These questions draw on current thinking about validity and the construction of meaning (Messick, 1990; Tittle, 1990).

Alternatives

Having considered problems with the standardized test scores that constitute a key element in the school record cards, and their negative influence on practice, and listed evaluation questions, what are some alternative paths that can be taken?

The National Assessment of Educational Progress (NAEP) stands as an excellent model. Serious reflection on accountability programs and evaluation of these programs should result in insights that may shift the practices and focus of the school report cards. NAEP is a model from the standpoint that the sampling plan used in assessment reduces the pressures to teach to the test and permits more information to be collected in brief time periods. These charactistics of NAEP can meet national (or state) accountability needs. However, such a system does not, and should not (except in a general sense), provide teachers and

individual learners with information about individual progress and needs.

Fresh thinking is needed about the information that professional teachers and learners in classrooms find meaningful and can use, what such information might be, how it could be developed, by whom, and when. Such re-thinking of assessment for teaching and learning can focus on possibilities that cannot be considered in assessment for accountability: assessments developed by teachers in a school, or by math teachers in collaboratives, for example; portfolios of student writings or projects; assessments reviewed by school management committees, or curriculum committees for the school or district.

These assessment alternatives could focus on enabling practice, in McLaughlin's terms, and would reduce the pressure to take any form of assessment and distort its intentions, as occurs in the large scale accountability programs. To develop assessments that are meaningful to teachers and learners is no trivial exercise, and will require long-term, cooperative efforts of teachers and specialists who can provide technical support through state, district and city curriculum and assessment specialists.

Summary

Let me summarize by repeating my main points:

. More information does not necessarily mean better schools or postsecondary education;

. Technology does not determine the choices for what a school or postsecondary report card contains or the system/legislation that fostered the report card;

. The challenge is to reflect on and study the meaning and use that is derived from accountability measures, including school and postsecondary report cards; and

. The challenge is to expand our thinking, to develop alternative or multiple assessments, to change from thinking that a single accountability system or any accountability system,, national, state, or Great City, can meet the goal of accountability AND the goal of school improvement.

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