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ABSTRACT

The use of indicators as tools for educational improvement is discussed. National indicators are limited in breadth and depth and are neither sensitive to differences across states nor detailed and specific enough to be useful to states. For indicators to contribute to the goals of local educational improvement, local agencies must define their own indicators, and district policymakers must pass on similar discretion to their schools. For a system of indicators to be useful for educational improvement, it must provide adequate measures of those aspects of schooling deemed important and amenable to change through policymaking. A useful system of indicators requires measures of the content and quality of instruction and analyses and presentation of data directed to specific policy issues. The following organizational factors help policymakers use data to make decisions: (1) a climate that supports planning and use of data; (2) commitment to improvement by district leaders; (3) stakeholder involvement in designing the data system; (4) technical expertise and data system support; and (5) an action system and resource for change. Indicators should match curricular goals and reflect the content and quality of instruction. Analyses of existing data should provide insight beyond aggregate measures; and school staff should be involved in specification, collection, analysis, and interpretation of data. (TJH)

CPRE

CENTER FOR POLICY RESEARCH IN EDUCATION

Improving Education with Locally Developed Indicators

Jane L. David

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CENTER FOR POLICY
RESEARCH IN EDUCATION

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Jane L. David

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CONTENTS

SUMMARY		v
ACKNOWLEDGEMENTS		vii
I.	INTRODUCTION	1
II.	CREATING POLICY-RELEVANT INDICATORS	3
	Creating Indicators Tied to Instruction	3
	Analyzing Existing Data	6
	Data Burden and Priorities	8
III.	USES OF DATA BY POLICYMAKERS	9
	How Local Policies are Developed	9
	How Individuals Reach Decisions	10
IV.	CONDITIONS THAT PROMOTE USES OF DATA	13
	Climate that Supports Planning and Use of Data	13
	District Commitment to Improvement	14
	Stakeholder Involvement	14
	Technical Expertise and Support	15
	An Action System and Resources for Change	16
V.	SUMMARY AND CONCLUSIONS	19
REFERENCES		21

SUMMARY

Indicators are usually discussed in the context of accountability. In this context, it is assumed that rewards tied to high performance on indicators of effectiveness will stimulate low-performing schools to improve. Thus, indicators are viewed as incentives to change via external pressure. The author believes that significant change is more likely to result from a system designed to foster professional responsibility for self improvement than one that relies on external control. Therefore, this paper focuses on the usefulness of indicators as guides for educational improvement.

The use of indicators as tools for self improvement does not preclude their being used for accountability purposes, however. If districts create systems of indicators that are useful to policymakers in improving education quality, they are necessarily useful for purposes of accountability to the public.

National indicators, by definition, are limited in breadth and depth, and are neither sensitive to differences across states nor detailed and specific enough to be useful to states. For indicators to contribute to goals of local improvement, local agencies must define their own indicators, and district policymakers should in turn pass on similar discretion to their schools. Therefore, this paper does not consider a multi-tiered system of indicators created above the level of local education agencies.

Most districts currently collect a lot of operational data. Yet, these data are rarely used to inform policymaking. In order to promote the use of data as indicators for educational improvement, districts must first ensure that they are collecting the right kinds of data and that conditions exist for optimum use of these data.

For a system of indicators to be useful for educational improvement is it must provide adequate measures of those aspects of schooling deemed important and amenable to change through policymaking. A useful system of indicators therefore requires:

- measures of the content and quality of instruction; and
- analyses and presentation of data directed to specific policy issues.

In addition, five organizational factors help policymakers use data to make decisions:

1. a climate that supports planning and use of data;
2. commitment to improvement by district leaders;
3. stakeholder involvement in designing the data system;
4. technical expertise and data system support, and
5. an action system and resources for change.

For indicators to motivate district and school staff to change the way they do things, their selection should be accompanied by attention to the organizational factors that promote feedback for improvement at all levels of the system. Data alone have never been a catalyst for change. This suggests the need for cooperative planning among policymakers, analysts, and school staffs to create a workable system.

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Statements about education indicators cannot be divorced from one's views of how people make judgments, how individuals and organizations change, how authority should be distributed in our education system, and how the goals of education should be determined and measured. The reactions of colleagues and reviewers, including those who disagree with my point of view, were extremely helpful in negotiating this vast territory. For comments that greatly strengthened the paper, I thank Bill Clune, Larry Cuban, Jim Fox, John Fonte, David Greene, John May, Mike Smith, and David Stern.

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I. INTRODUCTION

"Education indicators" are defined as single or composite statistics reflecting the health of the educational system that can be readily, reliably, and repeatedly obtained, thus permitting comparisons over time and among states or districts. (Johnstone 1981; Kaagan and Smith, 1985; National Center for Education Statistics, 1985). In this paper, I consider ways in which indicators can help local policymakers improve the quality of their schools.

Indicators recently have received considerable attention as a way to meet the needs of federal and state policymakers for comparative data on education quality. The difficulties of creating a system of indicators that adequately reflects education performance have been well-documented, including the need for common definitions, measures that match and adequately reflect education goals, and methods for insuring fairness of comparisons across very different subunits. (Baker 1985; National Center for Education Statistics, 1985; Oakes, 1986).

Indicators are usually discussed in the context of accountability. In this context, it is assumed that rewards tied to high performance on indicators of effectiveness will stimulate low performing schools to improve. Thus, indicators are viewed as incentives to change via external pressure.

I choose instead to focus on the usefulness of indicators as guides for education improvement. This choice derives from my belief that significant change is more likely to result from a system designed to foster professional responsibility for improvement than one that relies on external control.

By focusing on improvement, I do not believe that I sidestep accountability. On the contrary, if districts create systems of indicators that are useful to policymakers in improving education quality, they are necessarily useful for purposes of accountability to the public. The converse, however, is less likely to be true, as current uses of standardized test scores demonstrate.

National indicators, by definition, are limited in breadth and depth, and, as such, are neither sensitive to differences across states nor detailed and specific enough to be useful to states. Local education agencies add two more levels of variation to the system--districts and schools. Hence, the challenges facing the creation of a useful system of indicators are complicated even more.

For indicators to contribute to the goal of local improvement, I take as given that local agencies must define their own indicators (and I argue that district policymakers should in turn pass on similar discretion to their schools). Therefore, I do not even consider a multi-tiered system of indicators created above the level of local education agencies.

Most districts currently collect a lot of operational data; yet these data are rarely used to inform policymaking. In the next section I look at how indicators might be created that are more useful to policymakers than existing data by (1) developing measures more closely tied to schooling processes and (2) analyzing data in ways more relevant to policy issues.

I then turn to the other side of the picture with a review of the literature on how policymakers incorporate data into their planning and decisionmaking. Although connections between data and policymaking are rare, research on organizations offers insights on how district characteristics can promote or inhibit attention to data. I suggest a set of local conditions that will facilitate uses of data for improvement and urge that attention be paid to developing these conditions as well as developing useful indicators.

I. CREATING POLICY-RELEVANT INDICATORS

To be useful for local educational improvement, indicators should provide adequate measures of those aspects of schooling deemed important and amenable to change through policymaking. A useful system of indicators therefore requires: (1) measures of the content and quality of instruction and (2) analyses and presentation of data directed to specific policy issues.

CREATING INDICATORS TIED TO INSTRUCTION

For indicators to be useful locally, they must have a direct connection to the actual processes of schooling--the content and quality of instruction. Because so much emphasis is placed on test scores, as a first step local policymakers need to be sure that the tests they use adequately measure the goals of instruction. For many districts this may mean selecting or developing tests that are better matched to their curricular goals and educational philosophy than those currently used.

Traditional standardized tests are limited in their ability to assess domains such as reading comprehension, critical thinking and problem solving skills. If these are valued outcomes, new tests ought to be considered. Attention to this issue will result, at the least, in acknowledgment of the limitations of tests currently in use. It will also contribute to clear communication; the use of any test signals teachers what is expected of them (Cuban 1984; Madaus 1985, 1986).

Beyond test scores, the recent and growing body of research on effective instruction, schools, and programs suggests several fruitful directions for creating indicators with potential to guide improvement efforts.

Educational research has made considerable progress over the last decade in characterizing effective instruction and the conditions under which it is likely to occur. For example, research connecting teacher

behavior to student learning demonstrates that academic learning is influenced by the amount of time students are engaged in appropriate activities, by teachers actively structuring information and relating it to what students already know, and by teachers' monitoring performance and providing feedback in a variety of modes (Brophy and Good, 1986).

These findings suggest that a useful indicator would be the amount of time students are exposed to particular topics, which serves as the outside bound for the amount of time students spend in appropriate activities. For example, how many class periods in eighth grade math are devoted to graphing? If students are deemed deficient in graphing skills and adequate numbers of class periods are devoted to the topic, then the data indicate that a closer look into instructional quality is merited.

Similarly, the research community has identified a number of school characteristics associated with effectiveness. This literature suggests that an effective school has a strong instructional leader, a climate conducive to learning and that it places high value on academic achievement, staff collegiality, high expectations for all students, meaningful assessment, clearly communicated rules for behavior, teacher involvement in decisionmaking, and parent support (Purkey and Smith 1983). Recent studies have even demonstrated that it is possible, albeit time-consuming and difficult, to change an ineffective school into an effective one (McCormack-Larkin and Kritek, 1982; David and Peterson, 1984).

Although most of these characteristics are difficult to measure directly, various direct and indirect approximations are possible. For example, schools might rate themselves on a checklist that reflects whether school rules are posted in every classroom, teachers have planning periods and opportunities to plan together, resources essential to a productive climate are present and accessible (recent textbooks and teaching materials, photocopiers, libraries, computers, and supplies). District policymakers can select those characteristics that are consistent with their (and school staffs') views of effective schools and create their own indices of correlates of effectiveness.

Research on effective schools finds that the culture of individual schools varies and is strongly associated with instructional effectiveness and commitment to improvement (Purkey and Smith 1983). Because schools are smaller, more manageable organizational units than districts, these researchers conclude that a promising direction for education improvement lies in granting more autonomy to schools.

Creating a set of indicators provides an opportunity for districts to encourage school-based improvement by involving schools in the process of defining shared and unique measures. A system of indicators wholly controlled by the district goes in the opposite direction by reducing school autonomy and teacher discretion (Wise 1979).

For example, districts might require schools to develop profiles structured by a set of jointly defined indicators of effectiveness, allowing for schools to add their own and comment on changes relative to prior years. Districts could provide schools with profiles based on district-wide data collection--test score summaries, budget allocations, student characteristics--and solicit comments from school staff, such as hypothesized explanations for changes in test scores. Schools might be asked to state specific goals for a three to five year period and document their progress on achieving the goals in such areas as achievement, attendance, numbers of parents involved, suspension, expulsion, and drop-out rates.

In this approach, a school's past performance is the frame of reference for interpreting indicators. If attendance and test scores decrease while retentions and expulsions increase, district administrators will want more information. Spending time in the school is the best source of data but usually prohibitively time consuming and expensive. An alternative is something akin to focus groups used to gather information for marketing in the private sector: inviting a representative group of teachers and administrators to a group interview in which their views are solicited in a non-threatening environment.

ANALYZING EXISTING DATA TO INFORM POLICY

Virtually all districts already administer and collect standardized test data at least annually. Many districts also collect a variety of other test data, including state or local competency tests, college entrance exams, and ability or aptitude tests. Yet, as the following example illustrates, the average test scores typically reported by districts do not serve policymakers well.

The population of the junior high school in one California district is roughly half upper middle class whites and half low-income recent Mexican immigrants. The school's average test score is around the 50th percentile, and goes up or down a little from one year to the next. Policymakers have debated whether the schools' weak spot is in language development or adequate preparation for its college bound population. However, this debate occurred without an analysis of the data by income or ethnicity or language facility. If the scores reflect shifts in the proportion of advantaged and disadvantaged students, policymakers are debating the wrong solutions. Alternatively, if the data show an increase in the advantaged population and a corresponding decrease in test scores for that group, attention to the college bound program would be indicated.

District administrators generally report that test scores are not useful in meeting their information needs (Sproull and Zubrow, 1982). Yet test data reported in the aggregate serve as the primary indicator of effectiveness across districts. Given that the tests measure valued goals, the utility of test scores could be greatly enhanced by analyses that associate shifts in test scores with shifts in other factors.

Districts keep records of students' grades, absenteeism, and suspensions or expulsions, as well as their participation in various activities such as sports. District files also include a considerable amount of background information on each student; for example, age, sex, ethnicity, home language, parents' occupations, parents' education, address, length of resident, and family size. Districts also keep track of which students are eligible for and participate in free or reduced lunches.

Beyond all these student data, districts maintain data on

salaries, benefits, and numerous other expenditure categories (equipment, maintenance, transportation, security). Because federal and state programs often require application and evaluation data, districts also maintain detailed information about each separately funded program. Districts may also maintain files of various kinds f survey data such as education and vocation of graduates and attitudes of students, teachers, parents, and administrators. These types of data permit analyses that go beyond summary statistics. Yet this wealth of information lies largely untapped.

Although there are many reasons for the minimal use of data for educational improvement (discussed later), the absence of analysis and presentation relevant to policy issues is an obvious barrier. Policymakers need data that inform particular policy issues. School or even grade-level-within-school averages rarely do this. Such averages mask important differences among subpopulations which often define resource allocation decisions--for example, gifted, college bound, language minority, disadvantaged, mentally handicapped, and so on. More attention to data analysis, guided by the issues facing policymakers, has the potential to render much existing data into useful indicators. Existing data can be transformed into useful indicators if they are analyzed and presented in ways that allow relevant comparisons and inferences.

The importance of the school as an appropriate unit for organizational change strongly suggests that analyses should be performed at the school level. District indicators might consist of graphs depicting individual schools along particular dimensions instead of, or in addition to, aggregate data. Observing that two schools are exceptionally high or low on some measure is far more valuable than trying to interpret a district-wide mean and standard deviation. Policy issues related to specific age levels or subjects might require analyses below the level of the school.

To create or modify policies that will affect the outcomes, local policymakers need to know why changes in indicator values have occurred. Knowing that test scores or graduation rates have gone up or down is not sufficient because such facts do not suggest explanations.

Indicators are not intended to isolate causes but they should point to specific areas for further investigation. A shift in test score averages can be due to a change in student population, in instructional quality, in curriculum, resources, etc. The function of indicators is to narrow the area in which problems are defined and explanations sought.

Finally, no amount of sensitive and relevant analysis will inform policy unless their presentation is clear and timely. The need for technical expertise and support for analysis and reporting is discussed in subsequent sections.

DATA BURDEN AND PRIORITIES

Because each potentially useful indicator can be applied to every grade level and every subject area, there are an infinite number of possible indicators (and an associated risk of unduly burdening staff and students with data collection). Without increasing the data burden on administrators, teachers, and students, indicators can be created from existing data through more fine-tuned analyses tied to policy issues. To guard against data burden and interference with instruction, indicators must be carefully chosen to reflect local goals and priorities. This process needs to occur at the district level as well as the school level. One benefit of creating systems of indicators lies in this very process: directing attention to a discussion of goals and priorities for the district as a whole and individual schools faced with different sets of demands and constraints.

II. USES OF DATA BY POLICYMAKERS

In this section, I look at the other side of the picture: how policymakers actually use data in their decisionmaking. It is one thing for indicators to be potentially useful; it is quite another to be actually used.

HOW LOCAL POLICIES ARE DEVELOPED

Research on the uses of formal evidence in local policymaking has found few connections between available data and their use by policymakers. Reasons for the lack of connection are found in: (a) how policies are actually developed and (b) how individuals reach decisions. (A third reason derives from these two: the elusive nature of local policymaking and human decisionmaking makes their study extremely difficult.)

School districts do not resemble models of rational decisionmaking; that is, one in which policymakers weigh evidence and make policy choices informed by the data (March and Olsen 1976; Elmore, 1978). Nor are districts hierarchical structures with clear lines of authority (Weick 1976; Meyer and Rowan, 1977). Local policies are made in a variety of ways, formally and informally, and by a variety of actors at different levels of the system.

School district policies are formulated by school board members, superintendents, central office administrators (a subset of whom usually serve as the superintendent's cabinet), teacher organizations, and, in some cases, school staff. For particular policy decisions, there are likely to be various committees, drawn from the above actors and even including parents and other community members (Hanson 1981; Kennedy, 1982). Although a given district may characteristically follow a particular decisionmaking style, from strong central control to broad-based participation, there is rarely an identifiable process used repeatedly. Instead, both the specific individuals and the process itself differ from issue to issue (Knapp et al. 1986).

Whatever the local style of decisionmaking, it is difficult to

pinpoint when a policy is actually made. Policies begin to take form in various ways. They may emerge from informal discussions in hallways or over lunch. The process is more like accretion over time than like a clearly identifiable action (Lindblom and Cohen 1979; Cronbach and Associates, 1980; Weiss, 1980). Moreover, analytic distinctions among programmatic, policy, and managerial decisions are often blurred, with policymakers having responsibility for all three types of decisions.

School boards typically spend their time on decisions about personnel, budgets, legal matters, and facilities; policies regarding instructional concerns are the exception. In states with strong control over education, local boards must devote considerable energy to developing policies to implement externally imposed requirements. Similarly, it is often a full-time job for central office administrators to implement mandates from the board and the superintendent, leaving little time to create new policies designed to improve instruction.

Furthermore, district policymakers are frequently pressed to make decisions in response to particular pressures of the moment, like complaints from parents, state mandates, or internal crises. One by-product of this reactive mode is minimal attention given to future planning, or to anticipating the need for particular types of data. Hence data are rarely collected with specific needs in mind, which contributes to their lack of usefulness.

HOW INDIVIDUALS REACH DECISIONS

Another perspective on policymakers' under-utilization of data comes from the literature on individual decisionmaking and organizational policymaking. These studies rarely identify clear connections between particular decisions and evidence (Cohen and Garet, 1975; Nisbett and Ross, 1980). In fact, regardless of the characteristics of the relevant data (its technical accuracy or what it says), people tend to base decisions on their own beliefs and opinions (Janis and Mann, 1977). In the same vein, studies of evaluation use find that results from evaluations are more likely to be used when they are consistent with the existing beliefs of the users and not

contradicted by other information (David 1981; Cousins and Leithwood, 1986).

Even defining use very broadly, to include influencing the climate of opinion, it is difficult to identify clear connections between data and policy decisions. Instead, local policymakers draw conclusions on the basis of their "working knowledge": an amalgamation of formal evidence, personal experiences, interests and goals, and personal beliefs and values (Kennedy 1982). Working knowledge serves as a filter for interpreting evidence and incorporates or ignores evidence in ways consistent with it (Lindblom and Cohen 1979; Kennedy, 1982). At the same time, working knowledge is not permanently fixed; it can be changed by the process of incorporating new evidence (Weiss 1980; Kennedy, 1982).

These research findings imply that changing the kinds of data collected (by defining a set of indicators) is unlikely, by itself, to have a noticeable influence on the formation of policy in schools districts. On the other hand, policymakers do not ignore data. In fact, they actively and continually seek out evidence to support their decisions; but they seek evidence unsystematically and they incorporate it into their working knowledge in unpredictable ways (Kennedy 1982).

The challenge is to translate the potential usefulness of indicators into information that policymakers will incorporate into their ways of thinking. Indicators that are meaningful and relevant, as the previous section discusses, might have a greater influence than the research suggests since few studies have looked at conscious attempts to connect data to policy. More compelling are research findings connecting organizational characteristics to decisionmaking.

Research on organizations demonstrate that the organizational context exercises considerable influence on how decisions are made (Elmore 1978; Sabatier and Mazmanian, 1979; Sproull, 1979; Cousins and Leithwood, 1986; McLaughlin and Pfeifer, 1986). The next section turns to this area for insights on how uses of indicators in policymaking might be facilitated.

IV. CONDITIONS THAT PROMOTE USES OF DATA

Although systematic use of data is rare in local policymaking--particularly in the domain of instructional policy--some districts are exceptions. These districts make a conscious effort to incorporate a variety of data sources into their policy deliberations. From conversations with policymakers and reports of others in such districts, in addition to the literature, I have identified five organizational factors that help policymakers use data to make decisions:

1. a climate that supports planning and use of data;
2. commitment to improvement by district leaders;
3. stakeholder involvement in designing the data system;
4. technical expertise and data system support; and
5. an action system and resources for change.

These characteristics are elaborated below.

CLIMATE THAT SUPPORTS PLANNING AND USE OF DATA

For a local data system to generate information that is actually used, the organization must operate in a way that is prepared to incorporate such information. In particular, a district must be able to set goals, or at least determine what conditions are tolerable and intolerable, so that the information can be interpreted with reference to these goals (Cooley 1983). Without specified goals or criteria for acceptable conditions, the indicators themselves will become the goals (Johnstone 1981; Madaus, 1986).

The appropriate climate typically occurs when both superintendent and board members share a belief in the importance of getting feedback on the system in order to plan for the future. Their views in turn affect how central office administrators and school staff view the importance and role of evaluative information.

DISTRICT COMMITMENT TO IMPROVEMENT

Another condition that enables a data system to serve a useful function is a district's commitment to improvement. This condition requires both that district leaders are committed to improvement and that their commitment is visible to district and school staff.

The creation of a set of indicators, like the choice of evaluation instruments, is an essentially political activity. Who chooses the measures and for what ends, has a major influence on the quality of the data, its meaning, and its eventual use (Dornbusch and Scott, 1975). If district leaders are committed to improvement, district and school staff are more likely to willingly participate in and facilitate data collection activities. Moreover, they are more likely to implement changes from policies based on the data because organizational goals are aligned with professional ones. (McLaughlin and Pfeifer, 1986).

To the extent that a system of indicators is imposed on schools, without insuring that it is perceived as a guide to improvement, it is likely to have detrimental effects on the quality of the data. Staff will feel pressure to "look good," particularly on outcome measures, and will perceive the system as a threat. This situation is likely to result in two negative consequences. First, to increase test scores, teachers will focus their instruction on what the test measures (Madaus 1986). Second, teachers may alter testing conditions or reporting in ways that invalidate the data (Stringfield and Hartman 1985). Terminology is important. When data systems are called "accountability systems" (e.g., California's statewide system of school indicators), they are not perceived as guides to improvement. Even the term "monitoring" tends to carry a negative connotation, conjuring up visions of federal or state program auditors.

Both the commitment of top leaders to improvement, and appropriately chosen terminology to communicate that commitment, are necessary for a system of local indicators to contribute to the process of improvement.

STAKEHOLDER INVOLVEMENT

The commitment of district leaders to improvement is signalled

most strongly by involving stakeholder groups in the design of the district's data system and soliciting their views as part of the data collection. Data are far more likely to be credible to school and district staff and to the community if these groups have had an opportunity to suggest what should be measured and how (Patton 1975; Stake, 1975; Guba and Lincoln, 1982).

Districts that support use of data typically have mechanisms for soliciting input from teachers, principals, and parents on a regular basis. Whether through committees, surveys, regularly scheduled meetings, focus groups, or other mechanisms, these stakeholders are repeatedly asked their opinions on the strengths and weaknesses of the schools and the resources needed to change.

Policymakers in districts with such mechanisms rely on them very heavily (Wallace 1986). Although they filter the information (often taking into account whether staff perceptions were elicited in a setting that facilitated frankness), these data are believed more than numbers (David 1981).

TECHNICAL EXPERTISE AND SUPPORT

An effective data system places tremendous demands on the capabilities of the analyst. This role requires an individual with not only the requisite technical expertise but also excellent skills in presentation, communication, and understanding of policy and the organizational context in which policy is developed. The analyst needs to understand the information needs of the audience and communicate results in ways that are clear and directed to the relevant issues (Alkin, Daillak, and White 1979; Bickel, 1984; Cousins and Leithwood, 1986; Shapiro, 1985).

Data are more likely to be perceived as useful when there are open channels of communication and a common language between evaluators and decisionmakers (Lourie 1976). Presenting results in person, which provides opportunities for clarification, and basing the presentation on an understanding of the context in which the audience operates, greatly increase the likelihood of clear communication and hence use (Brown and Braskamp, 1980; Raizen and Rossi, 1981). Moreover, data are

more likely to be understood and incorporated into working knowledge when communication is an ongoing part of the evaluation system and not merely a presentation of final results (Cooley 1983; Brown and Braskamp, 1980; Raizen and Rossi, 1981).

Use of outside consultants and access to technical assistance (provided by federal, state, local consortia, or other mechanisms) can strengthen districts' analytic capabilities and presentation skills.

With the exception of very small districts, a well-designed computer system is an essential resource for operating a useful data system. An effective system includes multiple measures for each domain assessed and the capability of aggregating data at the classroom, school, and district levels (Cooley 1983). This requires an efficient and flexible computer-based data collection system, including computers or terminals in each school, which in turn may require a significant investment of resources on the district's part. Top-level commitment to and resources for evaluation are essential components of a successful evaluation system (Wise et al. 1984).

AN ACTION SYSTEM AND RESOURCES FOR CHANGE

If data are collected to provide guidance for system improvement, districts must have the capacity to obtain more in-depth information in those areas indicated deficient and to initiate action when it is called for. This capacity is closely connected to previously described conditions. The resources to obtain more detailed information can be considered part of the previous condition--support for the evaluation unit. The capacity to initiate action is an integral part of a district's commitment to improvement (Fullan 1982; Cooley, 1983). Without the ability to initiate change, pronouncements of commitment to improvement cannot be taken seriously by district staff (Wise et al, 1984).

The capacity to initiate action requires both resources and the ability to create solutions. Resources for change need not require additional funds. But there must be flexibility and willingness to significantly alter existing allocations of resources. Since the bulk of district budgets are tied up in staff salaries, solutions will

typically involve redefining staff roles.

In the past, solutions to identified deficiencies in schooling have led to the creation of various new programs. The concept underlying the role of a useful data system is instead to focus on improving what it already in place. This has the consequence of narrowing the options for change to incremental fixes in existing practices. Although this approach is arguably better than continually adding and subtracting programs (Cooley 1983), it has the disadvantage of focusing attention on marginal changes at the expense of considering major structural changes in the organization.

In summary, organizational characteristics of districts are powerful influences on the role and functioning of a data system. An effective system requires a set of conditions that are extremely rare in school districts--in fact, the same conditions that explain the successful implementation of any kind of organizational change in districts (Fullan 1982).

Creating all the conditions described above is a tall order for districts without them. Yet, they exercise a powerful influence on the potential value of a system of indicators. District policymakers should therefore pay as much attention to the creation of these conditions as they do to the creation of the indicators themselves.

V. SUMMARY AND CONCLUSIONS

For indicators to be useful to local policymakers in improving the quality of education, they must point to specific strengths and weaknesses as well as sources of explanations for them. Districts can take the following steps to accomplish this goal:

- Insure that indicators of outcomes adequately match curricular goals.

- Create indicators that reflect the content and quality of instruction using research findings as a guide.

- Conduct more fine-tuned analyses of existing data that provide insight beyond aggregate measures such as test score averages.

- Involve school staff in the specification, collection, analysis, and interpretation of data for their site.

Local policymakers have an infinite number of potential indicators to choose from. The choice should be guided by their goals and priorities and the potential for policies to affect what is measured. It should also be limited to a small number of measures that do not interfere with instruction.

For indicators to motivate district and school staff to change the way they do things, their selection should be accompanied by attention to the organizational factors that promote use of feedback for improvement at all levels of the system. Data alone have never been a catalyst for change. This suggests the need for cooperative planning among policymakers, analysts, and school staffs to create a workable system.

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