



Too Soon to Cheer? Synthesis of Research on Effective Schools

The recent literature on school effectiveness concludes that differences among schools do affect students' academic achievement. This literature challenges previous research that had found unequal academic achievement to be primarily a function of family background and related variables (Coleman and others, 1966; Jencks and others, 1972). Easily measured differences among schools—class size, teacher salaries, number of books in the library, the reading series, the age of the school building, or whether or not the school had a compensatory education program—were found to bear little relationship to achievement (Averch and others, 1972; Coleman and others, 1966; Jencks and others, 1972; Stephens, 1967; Hanushek, 1981; Mullin and Summers, 1981; Murnane, 1980).

Studies on the determinants of achievement have been concerned with variables relating to (1) how schools and school districts are structured and make decisions, (2) the process of change in schools and school districts, and (3) the way in which classrooms and schools can increase the amount of time spent on productive instruction. Although these variables are less susceptible to mechanical changes in policy, they are alterable (Bloom, 1981)—generally with difficulty, but often for little money.

Our attention in this article is directed to the literature on school-level factors. Following Barr and Dreeban

(1981), we view school systems as “nested layers” in which each organizational level sets the context and defines the boundaries for the layer below (though there is a reciprocal influence). If the locus of the educational process is at the lowest structural level, the classroom, it is nevertheless the adjacent layer, the school, which forms the immediate environment in which the classroom functions. The quality of the process at the classroom level is enhanced or diminished by the quality of activity at the level above it.

Review of the School Effectiveness Literature

We have clustered the studies that have received the most attention in the school effectiveness literature into four groups—outlier studies, case studies, program evaluation studies, and “other” studies. The lack of empirical data in many of the studies precluded us from carrying out a quantitative synthesis. Following the review of studies we examine the growing literature on the implementation of change in schools and recent research on theories of organization in order to gain an understanding of academically effective schools.

Outlier Studies. One major strategy of school effectiveness research has been to statistically determine highly effective schools (positive outliers) and unusually ineffective schools (negative outliers). Most such studies employ regression analyses of school mean achievement scores, controlling student body socioeconomic factors. Based on the regression equation, an “expected” mean achievement score is calculated for each school. This “expected” score is subtracted from the actual achievement level of the school to give a “residual” score for each school. The researcher then selects the most positive and the most negative residual scores and labels the schools they represent as unusually

effective or ineffective. Characteristics of these two types of schools are then assessed by surveys or case studies to determine the reason for the outcomes.

Studies that have adopted this general approach include three carried out by the New York State Department of Education (1974a, 1974b, 1976); a study conducted for the Maryland State Department of Education (Austin, 1978); Lezotte, Edmonds, and Ratner's study of model cities elementary schools in Detroit (1974); Brookover and Schneider's (1975) study of Michigan elementary schools; and the study of Delaware schools by Spartz and others (1977).

The similarity among these studies is striking in two areas: the means of school identification (four used regression analysis to identify outliers) and the selection of only elementary schools as study sites. Quality and conclusions, however, vary considerably. For example, the first New York study (1974a) found that methods of reading instruction varied greatly between high and low performing schools. A follow-up study (1974b) found the opposite—the method of reading instruction did not appear to make any difference. A third New York study (1976) again found salient differences in classroom instruction, although it did not highlight the same instructional features as the first study. The Maryland study (Austin, 1978) concluded that effective schools are characterized by strong instructional leadership, while Spartz and others (1977) found that effective schools had principals who emphasized administrative activities. The Spartz study identified at least seven general variables relating to achievement. Brookover and Schneider's Michigan study (1975) found six. Moreover, Brookover and Schneider did not mention ability grouping, while the Delaware and two of the New York studies considered this a significant feature. Finally, although

it is cited by many in support of various lists of critical factors, we could find no discussion of the substantive findings of the Lezotte (1974) study of Detroit's model cities schools.

While the studies do correspond in several respects, the variations in their findings should serve as a caution to those who would reduce such disparate literature to five or six variables. Similarly, those variations suggest that no variable in particular is crucial. Nonetheless there is some consistency in the results. The more pervasive common elements are better control or discipline and high staff expectations for student achievement. Each of these variables showed up in four of the seven studies for which there are data. An emphasis on instructional leadership by the principal or another important staff members was found to be important in three studies.

Although outlier studies vary in quality, they commonly suffer from the following weaknesses.

1. *Narrow and relatively small samples used for intensive study.* Though they often sift through a fairly large population, researchers who used a statistical procedure followed by a case study approach had a final sample ranging from 2 to 12 schools. The small sample sizes suggest that the characteristics that appear to discriminate between high and low outliers are chance events. The lack of representativeness of the samples also raises issues about their generalizability. On the basis of these studies alone we might make tentative claims about what constitutes an effective lower grade reading program in an urban elementary school with a predominantly low-income and minority student population. The evidence will not take us beyond that with any certainty.

2. *Error in identification of outlier schools.* The strength of the outlier approach depends on the quality of the measures used to distinguish the effects of social class and home background. If these measures are weak or inappropriate, differences in school characteristics between high and low outliers will be confounded with student background differences. Two of the studies—the New York State study (1976) comparing 148 “positive” schools with 145 “negative” schools and the Maryland study

(Austin, 1978)—suffer from this problem to such an extent as to render their conclusions meaningless.

3. *Inappropriate comparisons.* In a brief note Klitgaard and Hall (1974) recommended comparing positive outliers with average schools rather than with negative outliers. We were struck by the tendency of outlier researchers to ignore this good advice. The important differences between effective schools and average schools may be very different from the differences between “ineffective” and “effective” schools. Unless schools are capable of making quantum leaps in effectiveness, it will probably not greatly profit a very poor school to compare itself to an exceptionally fine school. None of the studies addresses this issue.

Case Studies. We carefully studied five school case studies cited in various school effectiveness reviews (Brookover and others, 1979; Brookover and Lezotte, 1979; Rutter and others, 1979; Venezky and Winfield, 1979; Weber, 1971) and three recent additions to the literature (California State Department of Education, 1980; Glenn, 1981; Levine and Stark, 1981).

Six case studies in this group looked at urban elementary schools. The studies varied in quality of methodology and clarity of reporting. Taken together they looked closely at a sum total of 43 schools, an average of a little over seven schools per study. The inherent weaknesses of the case study approach and the small samples seem a frail reed upon which to base a movement of school improvement. Yet the commonality of findings among the case studies and their similarity to other kinds of studies increase their credibility.

Five factors stand out as a common to most, but not all, of the six case studies. These are (1) strong leadership by the principal or another staff member, (2) high expectations by staff for student achievement, (3) a clear set of goals and emphasis for the school, (4) a school-wide effective staff training program, and (5) a system for the monitoring of student progress. An emphasis on order and discipline showed up in two of the studies, and a large number of factors were specific to a single study.

The authors of the other two case studies took a more complex look at the nature of effective schools than did the

previous six. Brookover and others (1979) observed two matched pairs of elementary schools. One school in each pair was high-scoring, the other low-scoring. The researchers theorized that student achievement was strongly affected by the school social system, which varied from school to school even within similar subsamples with SES and racial composition controlled.

The school social system was said to be composed of three interrelated variables: (1) social inputs (student body composition and other personnel inputs), (2) social structure (such as school size, open or closed classrooms, and so forth), and (3) social climate (school culture as the norms, expectations, and feelings about the school held by staff and students). While school social inputs affect academic achievement, they are “modified in the processes of interaction” with the school social structure and school social climate (p. 14).

An effective school was described as one “characterized by high evaluations of students, high expectations, high norms of achievement, with the appropriate patterns of reinforcement and instruction,” in which students “acquire a sense of control over their environment and overcome the feelings of futility which . . . characterize the students in many schools” (p. 243).

The study by Rutter and others (1979) stands out in four respects: it was a longitudinal study carried out from 1970–1974; it examined secondary schools; it looked at 12 inner-city schools in London; and it attempted to measure school outcomes in terms of students’ in-school behavior, attendance, examination success, and delinquency. The general argument is that secondary schools vary in outcome in the four areas above, that these variations are associated with the characteristics of schools as “social institutions,” and that it is a school’s “ethos” that influences students as a group. School ethos includes the “style and quality” of school life, patterns of student and teacher behavior, how students are treated as a group, the management of groups of students within the school, and the care and maintenance of buildings and grounds.

A troubling aspect of this study, however, is that the more effective schools had higher percentages of middle-income students than did the less effective

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schools. If academic achievement, attendance, and delinquency are strongly linked to social class integration, then the possibility exists that the significant difference between schools is not in school processes but in school composition. This problem is magnified by the fact that only two of Rutter's 12 schools can be considered to be academically effective.

Program Evaluations. A third category of school effectiveness research is program evaluation. We looked at six evaluations that examined school-level variables: Armor and others (1976), Trisman and others (1976), Doss and Holley (1982), and three studies carried out by the Michigan Department of Education (Hunter, 1979).

Armor and others identified "the school and classroom policies and other factors that have been most successful in raising the reading scores of inner-city children" (p. v) who attended schools participating in the School Preferred Reading Program in the Los Angeles Unified School District. The Trisman study examined reading programs in elementary schools throughout the nation. The researchers surveyed a large

number of programs and carefully studied the characteristics of a few schools that had especially successful efforts. Doss and Holley summarized data from an evaluation of Title I programs in Austin, Texas. The three Michigan studies were conducted from 1973–1978 in an attempt to understand what kinds of schools can carry out effective compensatory education programs.

By and large these studies are methodologically stronger than the preceding two types of research. However, their common findings are remarkably consistent with the outlier and case studies. Most schools with effective programs are characterized by (1) high staff expectations and morale, (2) a considerable degree of control by the staff over instructional and training decisions in the school, (3) clear leadership from the principal or other instructional figure, (4) clear goals for the school, and (5) a sense of order in the school.

Other Studies. The comparative study of public and private secondary schools by Coleman and others (1981) makes an interesting contribution to the analysis of effective school characteristics. Their basic contention is that private schools are academically superior to public schools. While the methodology leading to this conclusion is currently the subject of considerable debate, of particular interest are those features of private schools that were hypothesized as accounting for their academic superiority.

On the school level, private schools were more likely to exhibit characteristics that seem to encourage academic performance: better attendance; more homework; more required, rigorous academic subjects; and overall "more extensive academic demands." Private schools were less likely than public schools to possess characteristics thought to harm academic achievement: disruptive behavior (fights, cutting class, threatening teachers, and so on); student perception of discipline as being ineffective and unfair; and student perception of lack of teacher interest in student achievement, behavior, and so forth.

NIE's *Safe School Study* (U.S. Department of Health, Education, and Welfare, 1978) was concerned with identifying the elements that make

schools safe, nonviolent, orderly institutions of learning. Though the study did not evaluate the academic effectiveness of schools nor focus on school characteristics that were linked with academic success, many of its findings regarding the difference between safe schools and violent schools are relevant to the discussion of effective schools.

School governance was found to be of critical importance in creating safe schools. The central role in school governance is played by the principal. Those who served as firm disciplinarians, strong behavioral role models (for students and teachers alike), and educational leaders were crucial in making the school safe. Also contributing to school effectiveness is the strong relationship indicated in the study between a school's "structure of order" and academic success. Moreover, "one of the measures associated with the turnaround [of a violent school] seems to have been improving the academic program and stressing the importance of academic excellence" (p. 169). The implications of this study for building academically effective schools are intriguing.

General Critique

Specific criticisms of particular studies and methodologies notwithstanding, and disregarding a number of inconsistencies in findings, there remains an intuitive logic to the results of the research. Flaws in the original research should not discredit the notion of discovering effective school characteristics—seeds for school improvement that can be sown elsewhere. However, blanket acceptance would be dangerous.

For example, there has been no systematic sampling of different types of schools. The existing research tends to concentrate on urban elementary schools with successful reading and/or math programs in the lower grades. Given that, the generalizability of the research is limited. There is also a dearth of longitudinal studies. It is not clear that the reading scores of a third-grade class in an effective school will look the same when that class is in the sixth or eighth grade. Similarly, it seems reasonable and prudent to expect an effective school to have been so historically before raising the banner of success over its doors. Few studies require schools to be consistently effective. Nor

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have researchers examined schools that are systematically trying to improve.

Finally, the implicit assumption of many reviews of the literature and the press seems to be that once aware of a set of 5—or 7 or 12—key features, schools can simply decide to adopt them. (The further implication is politically loaded: schools that do not acquire these characteristics lack the will or desire to effectively instruct all their students.) Even if these "easy-to-assemble model" features were necessary for effective schools, they would not be sufficient.

The history of education reform demonstrates that, no matter how well planned, systematic interventions in schools are not always successful either in form or outcome (Berman and McLaughlin, 1977; Elmore, 1978, 1979–80). In fact, current theories of school organization suggest that there are structural and procedural characteristics of schools that militate against this sort of top-down change. For example, if schools are indeed "loosely coupled" systems (Weick, 1976) having weak linkage between administration levels and the relatively autonomous classroom, then notions of effectiveness that depend on strong and dogmatic admin-

istrative leadership are immediately handicapped.

Having expressed our reservations about the available research and writing on school effectiveness, we nevertheless find a substantive case emerging from the literature. There is a good deal of common sense to the notion that a school is more likely to have relatively high reading or math scores if the staff agree to emphasize those subjects, are serious and purposeful about the task of teaching, expect students to learn, and create a safe and comfortable environment in which students accurately perceive the school's expectations for academic success and come to share them.

Toward a Theory of School Improvement—The Importance of the Culture of the School

A different approach to school improvement than the recipe model rests on a conception of schools that links content with process to arrive at a notion of school culture (Brookover and others, 1979; Rutter and others, 1979). Content refers to such things as the organizational structure, roles, norms, values and instructional techniques of a school, and the information taught in the curriculum. School process refers to the nature and style of political and social relationships and to the flow of information within the school. It is a school's



Highlights from Research on Effective Schools

Two elements in particular appear to be common to effective schools: high expectations for student achievement on the part of school staff members, and strong instructional leadership on the part of the school principal or another staff member. Other elements that are common to a significant number of effective schools include:

- Well-defined school goals and emphases
- Staff training on a schoolwide basis
- Control by staff over instructional and training decisions
- A sense of order
- A system for monitoring student progress
- Good discipline.

In addition, private schools with high student achievement have good attendance, assign more homework, offer a strong academic program, and emphasize high standards. Schools that are safe for students also stress academic excellence and program improvement, and have strong leadership.

However, schools should not blindly accept or attempt to institute all of the characteristics associated with effective schools. The studies undertaken thus far have not been longitudinal, nor have they concentrated on other than urban elementary schools that already have successful programs. In some schools, structural or procedural factors may simply preclude the successful implementation of certain characteristics.

While one approach to improving achievement is based on a highly structured model that imposes change from higher levels of administration, most successful change results from collaborative efforts that involve schoolwide reforms, the participation of staff members on all levels, and a focus on the overall culture of the individual school.

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culture resulting in a distinct climate composed of attitudes, behaviors, organizational structure, and so on, that is influential in determining the school's effectiveness. An academically effective school would be likely to have clear goals related to student achievement, teachers and parents with high expectations, and a structure designed to maximize opportunities for students to learn.

The appropriateness of the school culture notion is supported by ideas derived from organization theory and from research on the implementation of education innovation. Recent research and theory have rejected a notion of schools as classical bureaucracies, hierarchically structured, susceptible to rational control, and with high responsiveness at the lowest level (the classroom) to the goals set by the administration. A competing and more persuasive description of schools is that they are "loosely coupled systems" in which teachers are largely independent of the principal's immediate supervision (March and Olsen, 1976; Weick, 1976). If schools are indeed loosely coupled, then attempts to increase their effectiveness through imposing discrete policies by fiat are unlikely to bear fruit. Schools by their nature may not prove amenable to command structure approaches, especially given the vested interests of the various groups of relatively autonomous professionals involved in the day-to-day operation of a school. Furthermore, teachers may not agree with the principal (or with each other) on essential variables, and the recipe models say nothing about overcoming or avoiding that resistance.

The school culture model begins to resolve the dilemma posed by loose coupling. It assumes that changing schools requires changing people, their behaviors and attitudes, as well as school organization and norms. It assumes that consensus among the staff of a school is more powerful than overt control, without ignoring the need for leadership.

Studies of implementation efforts reinforce the validity of the school culture perspective and highlight the importance of forging consensus in the process of improving schools. Of particular importance is the fact that change (and presumably maintenance thereafter) will not take place without the support and commitment of teachers who must

come to "own" new educational ideology and techniques (McLaughlin, 1978).

Though specific tactics may vary, the general strategy is best characterized as one that promotes collaborative planning, collegial work, and a school atmosphere conducive to experimentation and evaluation (Deal and others, 1977; Hargrove and others, 1981; Hawley, 1978; Little, 1981; McLaughlin, 1978). Miller (1980) suggested it is an approach that sees teachers as part of an entire school organization engaged in development activities that take place over time. Successful change efforts are therefore more likely to be realized when the entire school culture is affected.

The literatures on school organization and on innovation implementation lend strength to the school culture approach to improving academic achievement. Both stress the importance of acknowledging the interplay of factors that compose the school culture and emphasize the need to address all facets of the school when attempting change. Finally, both underline the significance of staff agreement about the norms and goals of the school and suggest ways of forging that consensus in the real world of public education.

Conclusion

We have argued that an academically effective school is distinguished by its culture: a structure, process, and climate of values and norms that channel staff and students in the direction of successful teaching and learning. In that regard we lean in the direction indicated by the research of Rutter and others (1979) and Brookover and others (1979). The lists of effective school characteristics compiled by other researchers and reviewers are also helpful to the extent that they have captured those factors that are likely to have cumulative impact on pupils' achievement.

A cultural approach to school improvement also has the advantage of being equally applicable to elementary and secondary schools. The logic of the cultural model is such that it points to increasing the organizational effectiveness of a school building and is neither grade-level nor curriculum specific. Certainly the greater complexity and size of secondary schools indicate that attempts to change their culture will prove more difficult, and the greater diversity of secondary schools' socially

mandated goals further complicates efforts to improve academic effectiveness. However, research by Rutter and others (1979), Coleman and others (1981), Hargrove and others (1981), U.S. Department of Health, Education, and Welfare (1978), and others suggests that the culture of secondary schools *can* be manipulated to promote academic effectiveness. The same research also suggests that schools effective in one area tended to be effective in other areas (a theme often repeated throughout the effective schools research, though supporting data are generally not provided).

There are many possible approaches to turning an academically inferior school into a more successful one. One approach is based on a tightly structured hierarchical model in which change is decreed from the top (the district or at least the principal). Administrative fiat can announce clear goals, organize planning meetings, and institute model evaluation systems. There are other places where such direction may be absolutely critical to upsetting an otherwise firmly established pattern of "ineffective" operation. Our sense, however, is that there are few schools in which mandated changes will be enough to encourage the development of a productive school climate and culture. Most successful school change efforts will be messier and more idiosyncratic than systematic and will need to focus on collaborative, whole-school reform.

In summary, the data indicate that school-level factors can promote learning in the classroom. By studying academically effective schools we can identify characteristics that together create a school culture conducive to student achievement. However, in attempting to build more effective schools we must abandon our reliance on facile solutions and the assumption that fundamental change can be brought about from the top down. Instead, a more promising notion rests on the conception of schools as functioning social systems with distinctive cultures in which the improvement effort is directed toward incremental, long-term cultural change. □

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