

Significant Achievement Gains Using the Effective Schools Model

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Improved elementary math and reading scores in Jefferson County, Kentucky, are clearly associated with the district's participation in a collaborative, school-based staff development project.



Effective schools research has become one of the most talked about phenomena in education (see Brandt, 1982; Brookover and others, 1982; Edmonds, 1979; Purkey and Smith, 1982; Squires and others, 1983). A primary reason for this popularity is the clearcut connection to possibilities for improvement: if a few schools can serve disadvantaged children well, then other schools can, too, if they adopt the practices and characteristics of exemplary schools.

Because school improvement is complicated by the problems involved

in change (Goodlad, 1975; Herriott and Gross, 1979; Miller, 1981; Rogers and Shoemaker, 1971), school effectiveness research also focuses on how to implement change. However, reports of school improvement programs suggest that further evaluation studies are needed in order to better understand the process of change and situational variables.

One such effort occurred in the Jefferson County, Kentucky, Public Schools (Miller and others, 1984a). The district's student population is approximately 71 percent white and 29



percent black and other minorities. In 1981, a new superintendent took over with a mandate to improve schools and raise achievement. During 1981-82, a long-range staff development effort was planned that focused on clinical supervision for administrators and the teaching-learning process for teachers. The latter, a series of concepts and strategies taken from research on teaching, reflected the district's emphasis on improving instruction by the individual teacher. In addition, teachers, who are required to have 24 hours of inservice

per year, individually selected inservice sessions on such topics as subject matter, curriculum work, mainstreaming, and learning styles.

Although not a major focus at the time, the district also provided an option for several schools to participate in a pilot Effective Schools Project during the 1982-83 school year. This was a school-based inservice program with the entire staff completing the 24 hours collectively in an effort to study and then implement the findings and practices of the effective schools research. The program was based on the inservice manual, *Creating Effective Schools* (Brookover and associates, 1982). A consultant from the University of Louisville worked with the schools to implement the program.

During the spring of 1982, the faculties of ten elementary schools volunteered to participate in the program. These schools were primarily in the inner city with predominantly low socioeconomic status students whose previous achievement was below average for the district.

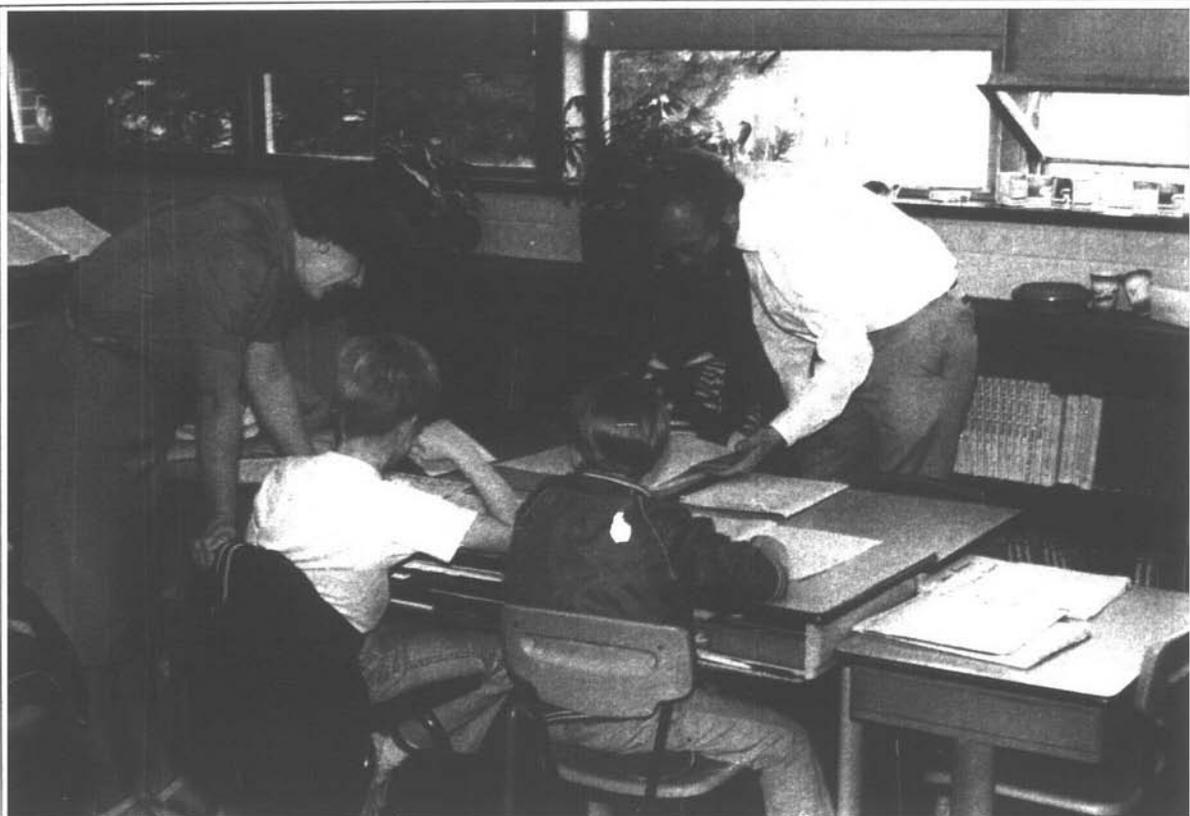
The ten principals, the University of Louisville consultant, and the Director of Instruction from one of the regional offices of the district began planning the Effective Schools Project with considerable enthusiasm, despite a recognition of less than ideal conditions for implementation. Problems revolved around logistics and resources. Ideally, a school improvement program involves an extensive period (up to a year) of planning and pretraining. In

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the preferred mode, a consultant trains the principals and selected faculty members who form a building leadership team. This group then takes the lead in presenting the concepts and instructional activities to the entire faculty. This model also assumes that the faculty is familiar with the program and agrees to participate. Typically, training in instructional planning and teaching strategies occurs at the school site, so that the faculty can collectively address situational problems. Such ideal conditions, however, are seldom achieved in most school districts.

Many of the problems experienced in the Jefferson County Effective Schools Project derived from its status as an experimental pilot program. The decision to include the program in 1982-83 precluded adequate preplanning. Schools did not opt into the





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program until late in the 1981–82 school year. Summer schedules only allowed a few meetings between the ten principals, the Regional Director of Instruction, and the consultant. Since there was no pretraining for principals and leadership teams, the consultant provided inservice directly to each faculty.

With ten schools and only one consultant, there were insufficient time and resources to conduct the 12-hour introductory training on *Creating Effective Schools* at individual school sites. Rather than conducting two-day sessions at each of the ten schools, the schools were divided into two groups (one with faculties from four schools, the other from six schools) so that only two two-day sessions were held. The consultant also provided nine hours of inservice after school started. Three-hour sessions on school discipline, mastery learning, and academic team games were presented, respectively, to faculty members in three different schools (chosen by lot). Each of the other schools saw the presentations on videotape. Thus the limitations of time and resources compro-

mised the ideal of site-based faculty development.

The Strength of the Model

Several factors helped produce an atmosphere of acceptance for the new project: (1) the enthusiastic support of the principals and the regional director of instruction; (2) faculty members in each school who accepted the challenge of raising achievement based on research that “all children can learn”; and (3) the consultant’s emphasis on teacher expectations, time-on-task, school learning climate, academic team games, and new strategies for grouping students.

The model built on these strengths. During the two days of inservice prior to school, the school staff members individually discussed and planned how they would implement the concepts and activities presented by the consultant. As school started, this process continued. A leadership team was chosen in each school, chaired by the principal, to set up committees to work on instructional time, academic games, school discipline, and other relevant topics. Most important, the

committees and activities were based on each school's profile of particular strengths and weaknesses.

At the same time, all staffs addressed certain common needs. Holding high teacher expectations for disadvantaged and minority students is central to improving school effectiveness. So, too, is the need to analyze disaggregated data; disaggregation breaks down achievement for comparison of high versus low SES and black versus white or by state to see what percent of students are achieving in different ranges. Likewise, all schools need to address the issue of grouping, especially for students who are below grade level and falling further behind each year.

No two schools are likely to address issues in the same way because of differences in the formal and informal organization of each school and differences in faculties. This was particularly true in the Jefferson County project. Because the pilot program was associated with the university on a voluntary basis, there were no formal organizational lines of authority. While the principals and consultant met monthly to discuss problems and procedures of implementation, and the consultant was able to visit the schools occasionally, the principals and their staff members essentially implemented the project independently.

The strength of the effective schools model lies primarily in this participatory mode of implementation. Change cannot be imposed from outside. Any lasting change in a school will occur only because the staff itself changes norms of expectations, appropriate role definitions, standards of accountability, and patterns of behavior. To the extent that a faculty does or does not succeed in changing these fundamental realities of the organization, changes in the level of achievement or other outcomes are likely to occur.

Project Results

That the individual school is the key to success can be seen in the project results for the 1982-83 school year, which demonstrate that improvement varies considerably from one school to the next.

Jefferson County has 87 elementary schools; for each school a weighted mean score (Miller and others, 1984a) was computed by averaging across grade level standardized mean achievements (adjusting for the different number of students from grade to grade). This weighted school mean was computed for each school for both reading and math for 1981-82 and for 1982-83. Figure 1 (Miller and others, 1984b) represents the amount of achievement gain for the 1982-83 school year (the year of the pilot program), that is, the change in the school mean from 1981-82 to 1982-83. The scores in Figure 1 have also been adjusted for differences in average SES and percent of minority students. Thus, the columns for reading and math illustrate the best possible estimate of achievement gains during the 1982-83 year, after factoring out extraneous variables through regression analysis.

Achievement gains in Figure 1 are given in standardized z-score units. These standardized units are measured in terms of the standard deviation. Zero (the baseline) represents no change from the previous year; for example, taking the previous year's achievement as the 50th percentile point on the normal curve, a score of 1.0 would approximate a mean increase in a school of about 34 percentile points during the year. The columns represent, respectively, the average for all elementary schools in the district, the 10 project sites, and the remaining 77 schools, followed by the gains for each of the 10 schools individually.

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In order to give a sense of comparison in more typical statistics, math achievement gains for 1982-83 translate as:

- *All Schools*: gain of .095 z-score units = 4 percentile points.

- *Effective Schools Project*: gain of .295 z-score units = 12 percentile points.

- *School 1*: gain of .595 z-score units = 23 percentile points.

Another way of comparing the gains of the Effective Schools Project is to note that the project schools' gain in reading is about five-and-a-half times the gain of the rest of the district and, in math, slightly more than four times as much as the control schools. These differences are statistically significant and represent gains of educational importance.

Two patterns are evident from the analysis of the complete project data (Miller and others, 1984a). First, the ten project schools, which had substantially lower reading and math scores than the district for 1981-82, had in one year caught up with and gone slightly ahead of other elementary schools in the district for math; for reading, project schools were still below the other schools, but the difference was slight.



Second, although the entire district improved slightly in total reading and total math achievement on the CTBS-U from 1981-82 to 1982-83, gains for project schools were substantially higher than for the total district. Although some control schools gained more than some project schools, overall scores for project schools improved substantially more than did those of control schools. Similarly, the increase for project schools was above the district increase for each grade in both reading and math and substantially so for all grades except fifth.

Discussion and Conclusions

Although the Effective Schools Project is clearly associated with a substantial increase in reading and math achievement for pilot schools, a major issue is whether these results can be attributed to the project, given various explanations for the change. The Hawthorne effect—a higher than normal level of commitment from participants at the outset of a new project—cannot be ruled out. A second variable that may have influenced outcomes is “readiness for change” associated with the volunteer status of the ten pilot schools. Third, the level of use (LoU) concept (Hall and Loucks, 1977) provides some evidence on the extent to which the program was implemented in different schools, which is supported by the variability of gains across grades and schools. Hawthorne effects and volunteer status would seemingly produce similar effects within schools (across grades) even if these effects were somewhat different across the ten project sites. In contrast, the LoU concept would be consistent with significant variation both within and between schools. Data for the project reflect the latter. Thus, to the extent

that LoU provides a better explanation for the variability in scores, attributing gains to the project itself is strengthened. However, some influence from a Hawthorne effect cannot be totally ruled out. Hawthorne effects may be somewhat attenuated by the initiation of the Clinical Supervision/Teaching-Learning Process by the district during the 1982-83 year. However, the district program was not school-site based, and any Hawthorne effects from this source would not have been as concentrated as the site-based Effective Schools Project.

What is the significance of these results? Our reflection focuses on two issues. First, how possible is school improvement, in this instance using an effective schools model? The answer is extremely encouraging.

A variety of constraints—time available for preplanning, personnel, inservice facilities and procedures, political perceptions of the project's favor, staff reactions to workload associated with the project, status of the project as temporary, the lack of formal connections to the district authority structure, as well as any personality factors that inevitably cloud such programs—combined to produce a less than favorable environment for the implementation of the Effective Schools Project. These constraints were somewhat balanced by factors such as the Hawthorne effect and the “volunteer” status of schools that opted for the program.

Overall, evidence from this project suggests that school improvement can occur under less than ideal conditions. This has important implications; the real world of the schools is such that few districts are able to approach school improvement under ideal conditions. But principals and teachers

who initiate school improvement with a “can do” attitude, and districts that encourage and permit such efforts, can be successful under typical “real world” conditions.

The second issue concerns institutionalization, the extent to which a program becomes an ongoing part of the school. Here the message is mixed. Pilot programs of short duration, especially those with connotations of “university experiments,” have little chance of becoming institutionalized. The current project was not officially continued after the first year. On the other hand, some of the schools, particularly those that had been more successful during the project, continued aspects of the program informally.

The concept of school-based collaborative inservice focused on a single program for an entire faculty does not have a strong tradition in this district, as is true across the country. In fact, teacher independence and autonomy regarding classroom instruction and inservice offerings is more likely to be the norm (Lortie, 1975).

In that respect, this project can be seen as an important step in the direction of collaborative, school-based staff development. Other events in the district bear this out. Several schools have started school climate improvement projects (Howard, 1980a, b); one additional elementary school and a high school are implementing school effectiveness models during the 1984-85 school year, and both are projected to continue over the next several years. Perhaps more significant, the district has received a major funding grant for staff development from a private foundation. The thrust of this grant will be to develop school-based organizational improvement, and the effective schools research will be a major aspect of this project. Thus, the long-range outlook for district changes in the direction of school effectiveness research-based programs seems favorable.

In the meantime, the staffs of the schools involved in the Effective Schools Project can take pride in the success they have achieved. Scientific questions of Hawthorne effects aside, the type of success noted here is why the effective schools movement has become so popular. Educators and the public want improvement and are less concerned with the scientific reasons than with positive results. □

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