

New Evidence on Effective Elementary Schools

A four-year study conducted in London has identified 12 factors—most under the control of the principal and teachers—that distinguish effective elementary schools from less effective ones.

Photographs by Martin Soskias, IEA

Teachers and researchers have long debated what makes some schools better than others. To investigate this question, the Inner London Education Authority conducted a four-year study of the effectiveness of elementary education. If some schools are more effective in promoting students' learning and development, what factors contribute to the positive effects?

From detailed examination of our data, we found that much of the variation between schools can be accounted for by differences in school policies and practices within control of the principal and teachers. From this, we were able to identify 12 key factors that combine to form a picture of what constitutes effective elementary education.

Background for the Study

Coleman and colleagues (1966) and later Jencks and colleagues (1972) argue that differences among schools have relatively little impact on student achievement. Both classroom practitioners and research at the elementary school level (Weber 1971, Brookover et al. 1976, Edmonds et al. 1979) have challenged this conclusion. Similarly, Summers and Wolfe (1977) and Goodlad (1979) have disputed the claim that high schools have little influence and suggest that some have powerful effects upon their students.



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In the United Kingdom most research on school effects has been conducted in secondary schools (see Madaus et al. 1979 and Rutter et al. 1979), and results have pointed to substantial differences among schools. In both the United States and the United Kingdom theoretical and methodological issues have been extensively debated. Some studies failed to control fully for the different backgrounds of students entering the schools. Most focused only on reading and mathematics. Though valuable, such studies have frequently suffered from conceptual and methodological weaknesses, as the reviews by Purkey and Smith (1983) noted.

We began our study in September 1980, when nearly 2,000 seven-year-olds entered school, and concluded it four years later when the students transferred to high schools.¹ Our randomly selected sample of 50 elementary schools, from a total of 636 within our jurisdiction, proved to be representative of both schools and students in the area served by the Inner London Education Authority.

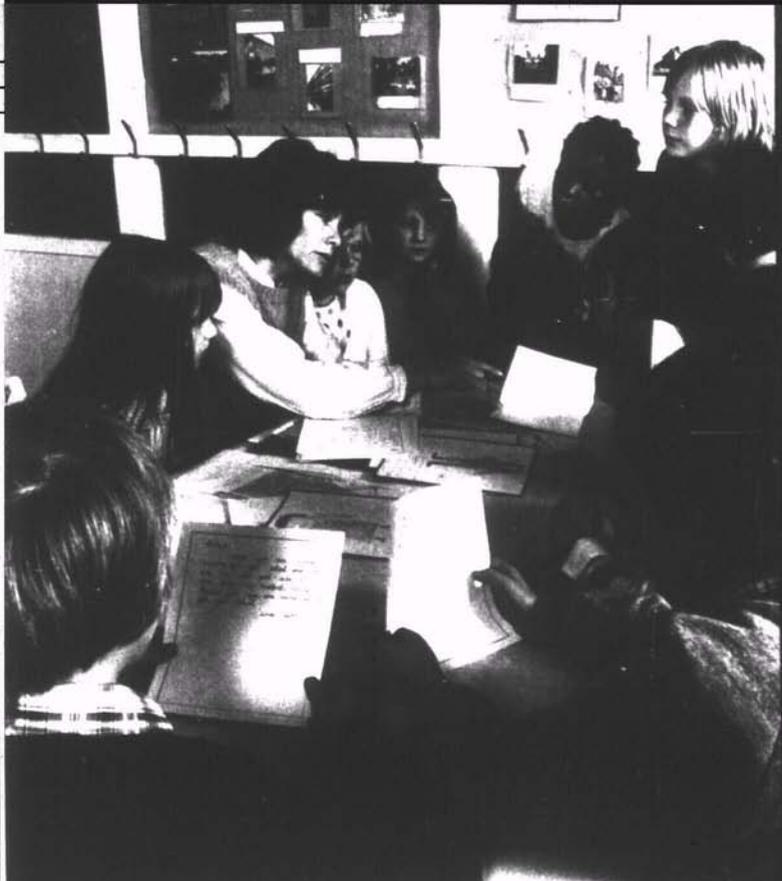
Our study attempted to answer three questions.

1. Are some schools more effective than others in promoting students' learning and development, when account is taken of variations in the students' backgrounds?
2. Are some schools more effective than others for particular groups of children (for girls or boys, for those of different social class origins or different racial backgrounds)?
3. If some schools are more effective than others, what factors contribute to such positive effects?

Our colleagues comprised an interdisciplinary group of researchers and experienced elementary teachers. We worked together as a team for four years. In our view it was crucial that teachers were involved both in designing the study and in working directly as field officers with the schools in the sample.

Information about Students, Schools, and Teachers

In order to answer the questions we had set ourselves, we collected infor-



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mation on three topics: students' characteristics, students' learning and development, and school characteristics.

For each child in the 50 schools, we obtained detailed information about social, ethnic, language, and family background; kindergarten experiences; and initial attainments at entry to elementary school. We needed these data to establish the impact of background factors on students' attainments, progress, and development; to take into account differences among school populations; to quantify the relative importance of school experience compared with background as influences; and to explore the effectiveness of schooling for different groups.

The second set of information we gathered related to students' learning and development, and our interest went beyond their attainment in basic skills. So, in addition to reading and written math, we examined students'

practical math skills. To assess creative writing, we used measures which included the quality of language and ideas, as well as more technical aspects. To broaden our assessment of language, we also studied students' speaking skills. Our assessments of speech focused on the ability to communicate effectively, and children were not penalized for using nonstandard English.

We were equally interested in the social outcomes of education, which previous studies of school differences have tended to neglect. We sought information, therefore, about students' attendance, their behavior in school, their attitude toward school and various school activities, and their self-concepts, including perceptions of themselves as learners.

The third set of information we collected related to the schools' characteristics, their organization, and the learning environment experienced by

students. Field officers also made detailed observations and kept extensive field notes about teachers and students in the classroom.

Measuring School Effects

Our intention was to determine the impact of schools on students' progress and development, once account had been taken of attainment at entry to elementary school and of the influences of age, sex, and other background factors. Therefore, each student's initial attainment at entry was the baseline against which we measured his or her progress during later years.

We found strong relationships between background factors (especially age, social class, sex, and race) and students' attainment and development and, to a lesser extent, relationships between these factors and their progress during the elementary years. Full account, therefore, had to be taken of these relationships before we could examine schools' effects on their students.

School Differences

Even after controlling for characteristics on entry to school, however, our data show, in answer to our first question, that the school contributed substantially to students' progress and development. In fact, for many of the educational outcomes—especially progress in cognitive areas—the school is much more important than background factors in accounting for variations among individuals.

In our measurement of reading progress, we found the school to be about six times more important than background. For written math and writing, the difference is tenfold. The analyses of speech and of the social outcomes also confirm the overriding importance of school.

We calculated the size of the effects of each school on each of our measures of educational outcomes and found striking differences between the least and the most effective schools. If we take reading as one example, the most effective school improved a student's attainment by an average of 15 points above that predicted by each

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child's attainment at entry to elementary school, taking into account personal background. But in the least effective school, each child's attainment was on average 10 points lower than predicted. This outcome compares with an overall average reading score for all students of 54 points, with a maximum possible of 100.

Of the 50 schools, 14 had positive effects on students' progress and development in most of the cognitive and noncognitive outcomes. These can be seen as the generally effective schools. In contrast, five schools were rather ineffective in most areas.

Effects on Different Groups

To answer our second question, we compared the schools' effects on the progress of different groups of students. Generally, however, we found that schools which are effective in promoting the progress of one group are also effective for other groups, and those that are less effective for one group are also less effective for others. An effective school tends to “jack” up the performance of all students irre-

spective of their sex, social class origins, or race. Moreover, the evidence indicates that although overall differences in attainment were not removed, on average a student from a blue-collar worker's family attending an effective school achieved more highly than one from a white-collar family background attending one of the least effective schools.

Understanding School Effectiveness

In order to answer our third question, we needed to establish what factors and processes are related to positive school effects. In other words, how do the more effective schools differ from those which are less effective?

We found that much of the variation among schools in their effects on students' progress and development is accounted for by differences in school policies and practices. Furthermore, a number of the significant variables are themselves associated. Through a detailed examination of the ways in which classroom and school processes are interrelated, we gained a greater understanding of the important mechanisms by which effective education is promoted.

From these analyses, we identified a number of factors that might account for the differential effectiveness of schools. These factors are not purely statistical constructs obtained solely through quantitative analysis. Rather, they are derived from a combination of careful examination and discussion of the statistical findings and an interpretation of the research results by an interdisciplinary team of researchers and teachers.

We found that although some schools are more advantaged in terms of their size, status, environment, and stability of teaching staff, these favorable characteristics do not, by themselves, ensure effectiveness. They provide a supporting framework within which the principal and teachers can work to promote student progress and development. However, it is the policies and processes within the control of the principal and teachers that are crucial. These factors can be changed and improved.

Our work identified 12 key factors of effectiveness.

1. *Purposeful leadership of the staff by the principal.* "Purposeful leadership" occurs where the principal understands the needs of the school and is actively involved in the school's work, without exerting total control over the staff. In effective schools, principals are involved in curriculum discussions and influence the content of guidelines. They also influence teachers' strategies, but only selectively, where they judge it necessary. These leaders also believe in monitoring students' progress through the years.

2. *Involvement of the assistant principal.* Assistant principals can play a major role in the effectiveness of elementary schools. Our findings indicate that where the assistant principal is absent frequently or for a prolonged period, students' progress and development suffers. Also important are the responsibilities undertaken by assistant principals. Where the principal involves the assistant in policy decisions, students benefit. This is particularly true in terms of allocating teachers to classes.

3. *Involvement of teachers.* In successful schools, teachers are involved in curriculum planning and participate in developing their own curriculum guidelines. As with the assistant principal, teacher involvement in decisions concerning which classes they are to teach is important. Similarly, discussion with teachers about decisions on resource spending is important. Schools in which teachers are consulted on policy issues as well as issues affecting them directly appear to be more successful.

4. *Consistency among teachers.* Students benefit not only from continuity of staffing but also from consistency in teacher approach. For example, in schools where all teachers follow guidelines in the same way (whether closely or selectively), the impact on students' progress is positive. Variation among teachers in their use of guidelines has a negative effect.

5. *Structured sessions.* Students benefit when their school day has sufficient structure. In effective schools,

teachers organize the work and ensure that students always have plenty to do. In general, teachers who organize a framework within which students can work, yet allow them some freedom within this structure, are most successful.

6. *Intellectually challenging teaching.* Unsurprisingly, progress is greater in classes where students are stimulated and challenged. The content of teachers' communications is vitally important. Positive effects occur where teachers communicate interest and enthusiasm to the children and use higher-order questions and statements that encourage them to use creative imagination and powers of problem solving. On the other hand, teachers who more frequently direct students' work without discussing it or explaining its purpose have a negative impact.

Creating a challenge for students suggests that the teacher believes they are capable of responding to it. That

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effective teachers have high expectations is further seen in their encouraging students to take responsibility for managing individual pieces of work.

7. *Work-centered environment.* A high level of industry in the classroom characterizes a work-centered environment. Students appear to enjoy their work and are eager to commence new tasks. The noise level is also low, although this is not to say that there is silence in the classroom. Furthermore, movement around the classroom is not excessive and is generally work-related.

In schools where teachers spend more of their time discussing the content of work and less time on routine matters and the maintenance of work activity, the impact is positive. Students also seem to benefit when teachers take the time to give them feedback about their work.

8. *Limited focus within sessions.* Learning appears to be facilitated when teachers devote their energies to work in one particular curriculum area within a session, although at times, work can be undertaken in two areas and also produce positive effects. However, where sessions are organized such that three or more curriculum areas are concurrent, students' progress is marred. A focus upon one curriculum area does not imply that all students are doing exactly the same work. Variation exists both in terms of choice of topic and level of difficulty. Positive effects occur where the teacher gears the level of work to individual needs.

9. *Maximum communication between teachers and students.* Students gain from having frequent communication with the teacher, either individually or with the whole class. Because most teachers in our study devoted the majority of their attention to speaking with individuals, each child could expect to receive only a few individual contacts each day (on average only 11). By speaking to the whole class, teachers can increase the overall number of contacts with children and, in particular, those of a higher order. Furthermore, where children work in

a single curriculum area within sessions (even if they are engaged in individual or group tasks), it is easier for teachers to raise an intellectually challenging point with all students.

10. *Record keeping.* The value of record keeping has already been noted in relation to the purposeful leadership of the principal; however, it is also an important aspect of teachers' planning and assessment. Where teachers report keeping written records of individuals' work and using them to monitor progress, the impact is positive.

11. *Parental involvement.* Our research found parental involvement to be a positive influence upon students' progress and development. Parental involvement includes helping in classrooms and on educational visits and meeting with school staff to discuss their children's progress. The principal's accessibility to parents is also important; schools with an informal "open-door" policy are more effective. Parental involvement in students' educational development within the home is also beneficial. Parents who read to their children, listen to them read, and provide them with access to books at home affect their children's learning in a positive way.

12. *Positive climate.* Our study confirms that an effective school has a positive ethos. Both around the school and within the classroom, results are favorable when there is less emphasis on punishment and critical control and greater attention to praising and rewarding students. Teachers contribute to children's progress and development by encouraging self-control, not stressing the negative aspects of their behavior. What appears to be important is firm but fair classroom management.

Teachers who obviously enjoy teaching and communicate this to their students contribute to a favorable climate. They aid their children's progress by taking a personal interest in them and by devoting time to non-school discussion or "small talk." Outside the classroom, teachers create a positive atmosphere by organizing lunchtime and after-school clubs, eating lunch at the same tables with the children, organizing trips and visits, and using the local environment as a learning resource.

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The climate created by teachers for students and by the principal for teachers is an important aspect of a school's effectiveness. Where teachers have preparation time, the impact on student progress and development is noticeable. Furthermore, positive climate appears to be reflected in effective schools by happy, well-behaved students who are friendly toward each other and outsiders and by the absence of graffiti around the school.

Effective Elementary Schools

From our detailed examination of the factors and processes related to schools' effects, a picture evolves of what constitutes effective elementary education. We have described only briefly the 12 key factors, and these factors depend on specific behaviors and strategies employed by the principal and staff. The school and the classroom are in many ways interlocked: what the teacher can or cannot do often depends on what is happening in the school as a whole.

Thus, while the 12 factors do not constitute a "recipe" for effective elementary schooling, we feel that they provide a framework within which the various partners in the life of the school—principal and staff, parents and students, and the community—can operate. Each partner has the ca-

capacity to foster the success of the school. When each participant plays a positive role, the result is an effective school. □

1. British elementary school is for four years.

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Authors' note: This study would not have been possible without the continued support of all the principals, teachers, students, and parents involved. Thanks are due to the research team members, especially Louise Stoll, David Lewis, and Russell Ecob, and the following teachers who worked as field officers on the project: Mary Hunt, Jennifer Runham, Dick Cooper, Pamela Glanville, and Cathy Bunch. We also wish to thank Audrey Hind, Kate Foot, Andreas Varlaam, Brian Clover, Christine Mabey, Anne-Marie Hill, and Colin Alston.

A full account of this study will appear in Mortimore, P., et al. *School Matters: The Elementary Years*. London: Open Books, in press.

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