

Can Compensatory Education Produce Higher Achievement with Reduced Resources?

Four vanguard districts are applying time-on-task research to improve instruction in basic skills.

BEATRICE GROSS

"RESEARCHERS DISCOVER FORMULA FOR SUCCESS IN STUDENT LEARNING," proclaimed the cover headline of the *Educational R & D Report* in the fall of 1979. The story covered the six-year Beginning Teacher Evaluation Study (BTES) funded by the National Institute of Education. While it is simplistic to reduce the findings of that study of 300 experienced teachers in over 100 schools to "practice makes perfect," it did proclaim that children did better when they worked at academic tasks longer and more intently.

The significance of the BTES study for practicing educators was that children need to be "engaged" by work that gives them considerable success. (The

younger the child, the greater the need for high success.) And, of course, the engaged work time must be spent on material covered by achievement tests. The time spent most productively is called academic learning time. David Berliner, who was the director of the BTES study, graphically depicts these relationships in Figure 1:

As the model shows, it is where the outcomes we value (those we test) overlap the engaged learning time at a high success level that we have the most productive learning situation.

Since the key to raising academic test scores was found to lie in concentrated work, the corollary findings of the BTES were not surprising:

- Individual seat work is not as effective as work in teacher-led groups (children left alone tend to drift off-task)

- Clear teacher directions and close monitoring are needed for individual and group projects (children who are unclear about what they are supposed to be doing lose interest)

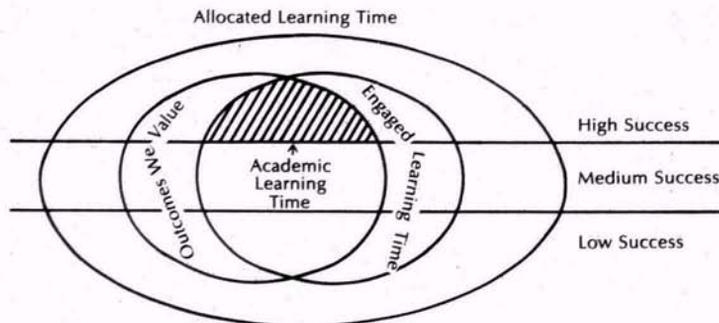
- Criticism reduces achievement; rewards and compliments increase it.

At roughly the same time as the BTES researchers were comparing the effects of teacher management skills on students, other NIE-funded researchers were comparing the effects of school management on teachers. Five years after they had begun (and after they had closely examined 30 schools and gathered and synthesized data from several hundred others), the effective schools researchers announced that teachers, like students, do not do as well when left alone as when supported by discerning, assertive educational leaders. Teachers need good administrative support; a school environment that stresses academic accomplishment; the belief that *they* (not home conditions) are responsible for their children's academic success; a school climate conducive to learning (safe, free of discipline and vandalism problems); and a system for monitoring and assessing pupil performance that is tied to instructional objectives.¹

Taken together, the findings of these two major research efforts indicate that intelligent school and classroom management can increase learning significantly. If this seems obvious now, it should be remembered that it challenged an accepted educational shibboleth generated by the Coleman Report on the *Equality of Educational Opportunity*²—that success and failure in schools was primarily a matter of social class and family background and that schools and teachers could make very little difference. Public interpretation of the Coleman findings constituted a "formidable obstacle to advancing [educational] equity," according to Ronald Edmonds, a key researcher and disseminator of the effective schools study, which contradicted Coleman's findings.³

Results of both the effective schools projects and the BTES study were released in 1978, and educators armed with new expectations began to reverse the downward spiral of achievement scores of disadvantaged youngsters. But the rate of progress, while noteworthy, is

Figure 1. Berliner's Academic Learning Time Relationships.



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still insufficient after four years. Knowing what environments work for teachers and students is not enough.

"We know, from having studied them, what these schools look like and how the people in them behave," explains NIE's Virginia Kochler, an effective schools researcher, "but we have not yet been able to use that knowledge to change the dynamics of a typical school. While we know what exemplary schools and teachers have in common, we don't know *why* they work. Do they work primarily because the principal is a dynamo; because there is more trust, intelligence, and commitment among the staff; because the morale is high; or for some ineffable cause in the total school ecology that pulls all the elements together? We suspect that the elements must all work together."

A Field Responsive Research Program

Kochler's admission occurred at a meeting convened by NIE in November 1981, which culminated in a series of planning conferences and launched a new four-year study. This research study was to be designed and run by local districts under contract to NIE. They were committed to raising academic scores of students by increasing academic learning time; to turning average schools for disadvantaged students into exemplary schools; and, by carefully charting the process, to providing a scenario that could be useful to other schools.

"We've published reports that have encouraged a healthy back-to-basics emphasis," says Charles Stalford, NIE's program director for this effort, "but we can't expect more refined changes until we can get management materials and implementation guidelines into the hands of practitioners in a form they can use."

To formulate a field responsive research program that would be practical and timely, the Institute sponsored four conferences in 1981 at which some of the nation's leading educational theorists, evaluators, researchers, and local administrators joined with teachers and parents to advise the Institute.⁴ The money for the conferences and for the ensuing four-year contracts to districts (selected in a nationwide competition) was set aside by the Office of Elementary and Secondary Education in 1980 from the Follow Through Research Budget.

From the outset, NIE emphasized that it wanted to pursue new *manage-*

Increasing Academic Learning Time

- Teachers who allocate more time to a particular content area of the curriculum have students who achieve higher levels than teachers who allocate less time to that content area. The more time teachers spend teaching reading, for example, the greater their students' reading achievement.
- Teachers who increase the amount of time students actually spend engaged in a learning activity will see the difference reflected in increased achievement. Allocating time for reading, in other words, isn't sufficient. The students also must be actively engaged in learning to read.
- Teachers should ensure that the students spend over half of their time working on tasks that provide high success. Students who spend more time than the average in high-success activities have higher achievement scores. However, older students (fifth grade and over) and students generally skilled at school learning need a smaller percentage of time at the high success level. Nevertheless, it is seldom, if ever, desirable for students to be given tasks where they experience low success.
- The BTES evidence suggests teachers who have the ability to diagnose students' skill levels generally have classrooms where students show a higher rate of engagement.
- Frequent pupil requests for additional instructions or clarification generally are associated with low success rate. That is, frequent need for explanation may be a signal that changes in the instructional program are needed.
- Frequently reminding students to "get back to work" when they are off task is ineffective. Students are most likely off task because the activities are too difficult.
- The percentage of instructional time during which students receive academic feedback is positively related to student engagement rate and to achievement. Teachers should increase the use of feedback to students about their work.
- Direct interaction between a student and a teacher about academic content is associated with increased engaged time and higher achievement. For instance, students who spend more time in small group instruction have higher rates of engagement than students who spend most of their time in independent seatwork and have little interaction with the teacher or others.
- The use of aides, parent volunteers, cross-age tutors, and peer tutors increases the amount of interactive instruction, thus keeping engagement rates high.
- Students who work together to reach academic goals and take responsibility for achieving them generally have higher achievement. Cooperation and student responsibility in nonacademic pursuits do not have this effect.
- Within high achieving classes studied, all had some type of positive reward; for example, "bionic handshakes," ice cream, teacher praise, or tokens that could be used to earn a prize. Thus there appears to be value in providing rewards.

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ment techniques rather than support another round of curriculum innovations. Agreeing that schools could benefit from better management, and especially concerned that some way be found to reliably implement new programs, the conference participants made important recommendations, which were adopted and adapted by the Institute, including suggestions that the new projects be:

1. *Inexpensive*, to conform to current educational budget realities
2. *Implementable* in schools rather than in single classrooms
3. *Applicable* to schools that differed in size and geographic and ethnic composition; in particular, useful to rural as well as urban schools
4. *Designed locally* to be responsive to local conditions and local needs.

"If these selected districts design activities that are responsive to the needs of their teachers, administrators, and students, it will increase the probability that the local projects will 'stick' instead of washing out when the money gives out. And if they keep detailed records of the change process, other systems can learn from their mistakes and triumphs," asserts Stalford.

To ensure that districts would design *affordable* models, NIE stipulated in its Request for Proposals that winners agree to use no other compensatory education funds for instructional purposes in the classes involved for the term of the contract. By using only the money allotted by the contract (which would be comparable to the usual compensatory educational allotments), districts could demonstrate that notable changes could be made within the confines of present compensatory funding and therefore that:

1. The normal compensatory allotment could sustain the projects after the contract with NIE terminated
2. New districts interested in replication would be able to afford to undertake such projects on their present compensatory budgets
3. The achievement gains that result from new practices would not be confounded in any way by other types of funded activities going on simultaneously.

In short, if the projects were success-

ful, they would provide usable alternatives to present compensatory education programs.

Four Vanguard Districts

In accord with one of the recommendations, NIE selected two urban districts, one suburban, and one rural:

- Detroit, Michigan, and Oakland, California—the two urban districts—are much affected by general unemployment and both have large unskilled minority populations.

- Both of the suburban schools cooperating with the Napa County Office of Education (one in wine country, the other near an Air Force base) are approximately one hour out of San Francisco. At these schools one-parent families are prevalent, turnover is abnormally high, and emotional problems are frequent.

- The cooperating districts of Cotopaxi and Westcliffe, Colorado, are typical rural school systems, which serve over one million students in the United States, and, like other rural schools in Colorado, are on a four-day week to save energy costs.

Each district was given an average of \$153 per child over their normal yearly per-child allocation, excluding research and evaluation costs. They were also offered free technical assistance from six highly respected experts in the fields of evaluation and staff development; all took advantage of the offer. They used some of the advisors' time to refine their proposals by setting realistic goals and developing solid research and evaluation designs. But they also used the technical assistance to inspire staff by sharing the research results of the BTES and effective school studies, and to learn what teachers and administrators most wanted from the local research effort in order to set up responsive inservice programs. No one knows better than local administrators the importance of sustained staff enthusiasm in such an effort.

As might be expected, the initial reaction of teachers and principals varied from community to community. In Oakland, staff took in stride the news of another contract. Districts like Oakland and Detroit have received many grants—each one promising a new horizon, and more meetings and paperwork.

"Being pioneers in a new effort is

familiar to us," says Oakland's project director Marilyn Jones. "We know from previous experience the pitfalls of implementation. But because we've had so much experience, we know we can make it work."

On the other hand, teachers in Cotopaxi are ecstatic, according to Superintendent David Trujillo. "Not only are they delighted to be getting help in the way of workshops, which we've never been able to afford before, they are gung-ho about the possibilities of increasing engaged learning time, and they've thought of all kinds of spin-off possibilities like computer work for young children and volunteers in the classrooms. They look forward to working with teachers from other schools and observing them, and have planned the agendas for the workshops already—things they feel they need. It gave me a new respect for the staff—seeing how much they wanted to improve themselves—and how many ideas they generated, given the opportunity."

In all four districts the goal is to improve student achievement in reading and math by increasing the amount of time students are engaged in learning tasks that are relevant and of appropriate difficulty. Beyond this common goal, the districts share some methods for achieving these goals: staff familiarity with the research literature; and observations between teachers, by teachers of master teachers, and by outside observers of teachers who will share the results with teachers.

But each district also has unique aspects of which each is particularly proud.

"We see the leadership of school administrators being of prime importance here in Oakland," says Marilyn Jones. "Our principals, who are already experienced and savvy, feel their increased familiarity of academic learning time will make them even better able to help their teachers, with the result that children will be better served, parents can be enlisted to help, and the teachers will get continuing support."

Cotopaxi Superintendent Trujillo is looking forward to the "considerable contribution that curriculum analysis and articulation between grades will make to teacher-focus in the classrooms." He also thinks that Cotopaxi and Westcliffe, once their observational

data on student engaged time is collected and analyzed, will be "the ideal projects for determining the feasibility of the four-day school week."

Detroit's project director, Sheldon Sofer, explains that: "To make teachers more efficient, we've set clear objectives—like, *teachers should spend at least 50 percent of the day in direct instruction, and no more than 5 percent of the school day should be wasted in transitions and discipline.* In addition we want to see how efficient we can be at training *teachers* to be efficient. For this reason, we begin with the least costly intervention—making the literature on how to increase academic learning time available to teachers. Then we have the teachers observe one another. If some teachers still are unable to meet the objectives, we suggest they consult the materials related to their areas of difficulty, such as articles on lesson preparation, mastery learning, and so forth. If still more help is needed, teachers will be advised first to observe others who are identified as highly skilled, then to prac-

tice in simulated conditions. If necessary they will be coached on a one-to-one basis." Unlike Oakland, Detroit is not involving supervisory staff.

Napa County, working with both teachers and supervisors, intends to produce teachers who are no longer merely "intuitive" diagnosticians, but who can articulate what each child is doing, will do next, and why; and principals who are equally articulate about leadership techniques. "The strength of our project lies in workshops based on Madeline Hunter's work," says Pam Robbins, project director for the Napa County Office of Education. "We're training teachers to diagnose and prescribe for learners; reinforce learning once it has occurred; motivate students; reduce transition times; and present organized and sequential lessons. And our principals, who are also attending workshops, understand that they must demonstrate as high a level of energy and commitment to instruction as do the teachers."

If these four school systems implement their programs successfully, they

will produce four invaluable records useful to large and small systems across the country. They will tell other interested districts how, at relatively low cost, they enlisted teachers in a collaborative effort to make their teaching better, and how they succeeded in reducing routine to open teachers up to new ideas and peer support. □

¹Michael Cohen, "Effective Schools: Accumulating Research Findings," *American Education* 18 (Jan/Feb 1982): 13-16.

²J. S. Coleman, E. Q. Campbell, C. J. Hobson, J. McPartland, A. M. Wood, F. D. Weinfeld, and R. L. York, *Equality of Educational Opportunity* (Washington, D.C.: U.S. Office of Education, National Center for Educational Statistics, 1966).

³Ronald Edmonds, "A Discussion of the Literature and Issues Related to Effective Schooling," CEMREL, Inc., St. Louis, Missouri, 1978.

⁴Syntheses of these conferences are available from Charles Stalford, project director of NIE's Follow Through Research Program.

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