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School Renewal as Cultural Change

When teachers in Richmond County, Georgia, were organized into study groups to help them learn new teaching strategies, their students' achievement and behavior improved markedly.

During the past two years we and our colleagues have developed a school improvement program based on principles derived from research on:

- the culture of the school and the process of innovation,
- the ways teachers learn new teaching strategies,
- the ways teachers transfer new skills into the classroom, and
- models of teaching and teaching skills.

Our design restructured the workplace—organizing teachers into collegial study groups, providing regular training on teaching, and inducing faculties to set goals for school improvement and strive to achieve them.

We can now begin to report the degree of change that occurred and the lessons we learned in the process. Some of the effects have been dramatic. For example, in one middle school only 30 percent of the students reached promotion standards the year before the program began. That number rose to 72 percent during the first year of the program and 94 percent during the second year. However, because the effects have not been uniform, we have begun to learn what factors explain the varying degrees of success. For example, achievement rose more rapidly in social studies and science than in the language arts. This finding prompted us to inquire into the reasons and to try to reorient future work for more rapid across-the-board results.

In addition, while virtually all the teachers learned to use the teaching strategies to a mechanical level of competence, some reached much

Under the guidance of their teacher, Lisa Annis, 4th grade students work cooperatively on an inductive thinking lesson

Photograph courtesy Carlene Murphy

higher levels of skill, and these differences were reflected in the achievement of their students. On portions of the Iowa Tests of Basic Skills, the median students of teachers who reached the higher levels of skill fell between the 85th and 90th percentiles of the students whose teachers reached only mechanical levels of use. This finding led us to search for ways to improve training to ensure that *all* teachers reach the level of skill that will provide their students with expert instruction.

In this first report of our work, we describe the shape of the project, its results in the three schools involved from the beginning, and the first steps in our search to refine and improve our procedures.

An Organic Approach

We adopted an organic approach to school renewal, restructuring the workplace and introducing training to bring the study of research-based teaching strategies into the regular workday of teachers.

We subscribe to Fullan's (1982) thesis that it is the bond of shared understandings and common language that sustains innovations and reduces the stress of change. Also, we designed our training around the theory-demonstration-practice-coaching paradigm that has been found to bring about high levels of skill and implementation (Joyce and Showers 1987). We used a "peer-coaching" process: the teachers were organized into study groups and the faculties into problem-solving groups. The content of our training has focused on teaching strategies that increase students' learning by affecting their aptitude to learn (Joyce and Weil 1986).

We intended that the development of shared understandings would develop vertical and horizontal social cohesiveness, thereby reducing administrator-teacher divisions while increasing cooperation between classrooms and teams of teachers. Our training paradigm was intended (a) to enable teachers to develop high levels of skill in the content of the program, and (b) to bring teachers and administrators together in study groups committed to implementing instructional changes and achieving goals for school improvement. Another effect of the study groups was to contribute to faculty cohesiveness and, thus, to reduce isolation.

Our training paradigm brought teachers and administrators together in study groups committed to implementing instructional changes.

The models of teaching we selected had a research history indicating that they could bring about fairly rapid improvement in student learning. The initial models included cooperative learning, mnemonics, concept attainment, inductive reasoning, and synectics. The teachers studied how to organize classrooms into study teams, how to use link words to assist memorization, how to classify information into categories, learn concepts, build and test hypotheses, and use analogies to reconceptualize problems and generate solutions to them. All of these models addressed student learning problems characteristic of the schools involved in the initial phases of the project.

These planned changes in the workplace are easy to describe and, on the surface, easy to implement. Organizing staffs into study groups, providing regular training in models of teaching, and making concerted efforts to achieve specific goals are changes that hardly call for radical rhetoric. For many of the teachers and administrators, however, these changes required difficult adaptations in patterns of behavior and ways of thinking. In negotiating these changes, we have learned much about problems that must be solved during the period of change.

Context and Planning

We implemented our program in Richmond County, Georgia, where 50 schools and 1,800 teachers serve 33,000 students. The school district serves the city of Augusta and the surrounding county, with a combined population of about 200,000 people. The principal industries of the region are chemical processing, pulp processing, textile manufacturing, metalworking, brick and clay manufacturing, and food processing. The major employers are Fort Gordon, the Medical College of Georgia, and the Savannah River Plant located in neighboring South Carolina. Many of the students in the district are economically disadvantaged. In the three participating schools, over two-thirds of the students received subsidized meals.

Low student achievement had long frustrated many of the schools in the district. Despite Chapter One and special education programs, a variety of programs for at-risk students, regular revision and upgrading of curriculum and instructional materials, and 14 years of staff development, many students remained in academic difficulty. In the middle school mentioned above, half of the students were receiving attention from special programs, yet 70 percent of the student body was achieving below the levels set by the state and district for promotion on merit.

We began our planning in January 1987 with intensive seminars for cabinet level staff. By March, district administrators had decided on the general dimensions of the project. During the first two years, the consultants (Joyce and Showers) would provide most of the training, but a cadre of

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teachers and administrators would be trained to offer service to other teachers and administrators—to bring other schools into the project on a regular basis in the future.

The development of the district cadre was critical to the project and to the relationship between the district and the consultants; it symbolized the intent to make permanent changes in the workplace. It made concrete the need for district personnel to possess the expertise of the consultants and to take over the functions of the consultants.

Our efforts during the first year (phase one) concentrated on three schools and the initial preparation of the cadre. During the second year (phase two), we added four more schools and prepared the cadre to add other schools during the following year. During the third year, two more entire faculties will be added; and teams from 10 other schools will begin training to become leaders of the process in their schools. The cadre provides follow-up training throughout the school year, for study teams cannot be left to maintain themselves. Regular training will become embedded in the workplace.

Schools competed to participate in the first three phases. We asked principals to poll their staffs to determine interest in summer training and a closely monitored implementation effort throughout the academic year. We asked principals to submit letters of application if faculty interest was high. The first year, 12 of the 13 schools invited to participate submitted applications. The superintendent's cabinet and the department directors selected one middle school and two elementary schools for phase one and one high school and three middle schools for phase two. Each faculty member in these schools had made a written commitment to:

- attend summer training,
- practice the new teaching strategies with peers regularly throughout the summer and share plans for implementation during the fall,
- employ the new strategies regularly throughout the 1987-1988 academic year,
- work with peer study groups during the academic year in planning lessons and visiting one another in classrooms,
- participate in regular training activities during the school year,
- make videotapes of their teaching on a regular basis,
- participate in a similar program in the summer of 1988 and during the 1988–89 school year.

The summer programs included two weeks of intensive training, followed by six weeks of practice and design of lessons for the fall, and the organization of study groups. We asked all participants to practice the teaching strategies no less than 30 times apiece during September and October and to strive to incorporate them into their active repertoires by the end of October. The study groups were to meet weekly; between meetings, members were to visit one another in their classrooms to study the children's responses to the teaching strategies and plan to teach the students to respond more powerfully. Our intent was to involve the faculties immediately in collective action that would have rapid effects on student learning.

Initiation and Initial Response

The training, practice, organization of study groups, development of short-run school goals, and initial classroom use of the teaching strategies occurred more or less as planned.

Learning to work together. Participants planned lessons they would teach, then shared their plans—and their skepticism about whether the plans were practical. The models of teaching were new to almost all the teachers and their students; they required substantial amounts of new learning. Administrators scheduled time for study groups to meet; they also practiced the strategies in classrooms, as did counselors and supervisors. Some study groups were comfortable planning and sharing, while others were anxious. New teachers hired at the last minute had to be integrated into the process.

The success of the study groups depended on the leadership of teachers. Because leadership was uneven—

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some groups had several energetic leaders while others had none—we reorganized the groups several times to distribute initiative throughout the schools. At the end of the second year, the study groups still depended on the leadership of a relatively small number of teachers and the stimulation of the cadre to help them learn new teaching techniques.

We asked the study groups to concentrate on teaching their students how to respond to the models of teaching they were learning. They had been told that, although the students might respond immediately to the new cognitive and social tasks presented by those models, it would take about 20 practices before students would become really proficient. The initial goal for student skill would be attained when a trainer could enter the classroom, announce the model to be used in a lesson, and students could respond efficiently and comfortably. The goal for teachers was to bring students to that level of proficiency as rapidly as possible. The study groups gradually learned to track student progress and design ways of accelerating learning.

As we had hoped, there were immediate and positive effects on students. Especially visible was the reduction in disciplinary referrals. Many teachers reported that their students liked the new teaching strategies and that classroom management was easier. Some of the teachers became very excited about the increase in cooperative activity and the positive responses of their students. Some were anxious as they altered their familiar classroom routines; they worried because they could not predict how their students would respond until both they and their students had experience with the new procedures.

Academic year training. At six-week intervals during the first and second years we provided regular assistance to the faculties, derived from our observations of the staff. Through direct observation and the examination of videotapes, we gathered information about implementation and devised demonstrations and practicums to address the needs we saw. With the supportive relationship among the staff development director, consultants, and the principals of the schools, problems could be identified and approached.

Changing the workplace climate to one of cooperative study and decision making was a complex process marked by uneven progress.

Progress. By stages, the new teaching strategies became familiar and the study groups learned to function together. By the beginning of the second year, the operation in the phase one schools was relatively smooth. Each faculty had a few members who still hoped the project would go away, but teacher leadership within the faculties was dominant in maintaining and extending the study groups and practice.

The cadre. During the winter and spring of 1988, we selected candidates for the cadre. The candidates, who were teachers and administrators from throughout the district, submitted applications and videotapes of classroom teaching to demonstrate their competence with the models of teaching they had practiced.

Cadre training included assisting with the introductory workshops for the phase two schools. By the end of July, they had designed courses and workshops to be offered at the district level during the 1988-89 school year. They also provided assistance to phase one and two study teams, prepared training materials, developed videotaped demonstrations of teaching, and studied research on training and teaching.

Formative Evaluation

Throughout the project, we have collected information about changes in the workplace, the implementation of the models of teaching, and effects on students. Our analysis of this information guides the reshaping of the training and the orientation of new schools and provides estimates of the extent to which the goals are being achieved. Now we will discuss the general picture for the phase one schools.

The workplace. Changing the workplace climate to one of cooperative study and decision making was a complex process marked by uneven progress (as described by Sudderth 1989, Black 1989). All three schools showed the individualistic organization that Lortie considered typical of American schools (Lortie 1975), and two of them had histories of very high staff turnover (about one-third annually), typical of schools with reputations for being troubled. Few teachers sought the leadership of other teachers—most were oriented toward their *own* classrooms. For these faculties, increasing collegial interaction was quite an innovation.

After a few weeks, some teachers emerged as the leaders in the transfer process. They developed "executive control" over the models and applied them appropriately in their teaching and learned to share lessons and demonstrate for their peers. They also instigated concerted efforts to teach the students to respond to the models. Some who developed executive control eschewed leadership, however, wishing to avoid conflict with resistant colleagues. By the end of two years, the number of teacher/leaders who have emerged is just enough to keep the study groups going; and the teach-

er/leaders need continual assistance from the cadre.

Schoolwide objectives for teaching the students to respond to the models of teaching were very important. For example, administrators led the teachers in establishing "cooperative learning days," "writing days," "number facts days," and other schoolwide efforts. Although administrators' teaching skill and experience played an important role, more important was their "cheerleading" function and their willingness to "carry the flag" prominently.

Schoolwide objectives for improving the social climate of the schools were established only with difficulty, although two schools have made great progress. In both cases the schools had relied heavily on quasi-legal methods of control, chiefly suspensions. In one elementary school, there were nearly 200 incidents of suspension per year (in a student population of about 550). When disciplinary referrals began to drop, apparently as a result of students' increased involvement in learning, the building administrators seized the opportunity to induce the staff to reflect on the dynamics of management and the relationship between instruction and classroom control. Consequently, the staff worked hard to use instruction as the major mechanism of control and, during the second year of the project, only six students were suspended. The school had moved from massive reliance on suspension to minimal use, in extreme cases only. Nearly 1,000 days of lost instructional time were thus recovered, and management became a much less obtrusive feature of the school. The middle school had a similar problem and, although it still uses an in-house suspension program, out-of-school suspensions have dropped from about 150 per semester (again in a population of about 550 students) to about 35.

The faculties are still individualistic in many ways but show their increasing willingness to attack common problems. The services of process-oriented consultants would perhaps be timely, to enable the faculties to capitalize more fully on the collegial settings.

The extent of change in the workplace has affected the degree of implementation by individuals. The concerted implementations that occurred when building administrators generated "whole-school" goals became enthusiastic collaborations as faculties generated mnemonics to be employed throughout the school, or gave concentrated energy to "metrics," or otherwise worked together. Concerted efforts helped teachers learn that they can be effective as a faculty. However, unified efforts continue to be a function of the active leadership of the building administrators and lead teachers. Only by being *very* active can they maintain collective activity.

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Implementation of the Teaching Models

The administrators observed their teachers on a regular basis and collected records of their use of the teaching strategies. Predictably, use of the models of teaching varied widely, from tentative and minimal use to regular and appropriate use. Administrators reported extensive use by about three-fourths of the faculty members, with moderate use by most of the others. From each school six teachers were selected randomly and observed and interviewed regularly throughout the year to determine quality of use (see Showers 1989). The 18 teachers were also videotaped near the end of the school year, and we analyzed those tapes to determine the level of skill they had achieved.

The training and use of the study group format were designed to ensure that 75–90 percent of the teachers would reach a mechanical level of use of at least two of the teaching strategies by the end of the first year. This goal was achieved during the first year. About one-third of the teachers developed a high level of skill in using three or four models of teaching. Another third learned to use at least two of them with a satisfactory level of competence. About half of the remainder were able to use one or more of them to a mechanical but not fluid level.

During the second year, the phase one teachers have continued to develop and consolidate skills. They are much more comfortable with the addition of new models but continue to struggle with new skills until they have practiced them about 20 times. The study groups and the use of peer coaching continue to be important as new models are introduced. More than 50 videotapes have been made to demonstrate aspects of the teaching strategies where the teachers have had difficulty. These, together with dozens of "live" demonstrations, have helped greatly, but the road to executive control is a rocky one for many of the teachers. Because the reading and language curriculums of the district are tightly prescribed, most "legitimate" use of the models of teaching has been

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in the social studies, mathematics, and, in the middle school, the sciences. In these curriculum areas the opportunity for use has been greatest; therefore, we understand the impact on student achievement that we have found there.

Student Learning

Our study of student learning has had two objectives: (1) to learn whether differences in teacher skill in using the new strategies is associated with student learning; and (2) to learn whether our effort narrowed the gap between students from poor families and their wealthier counterparts.

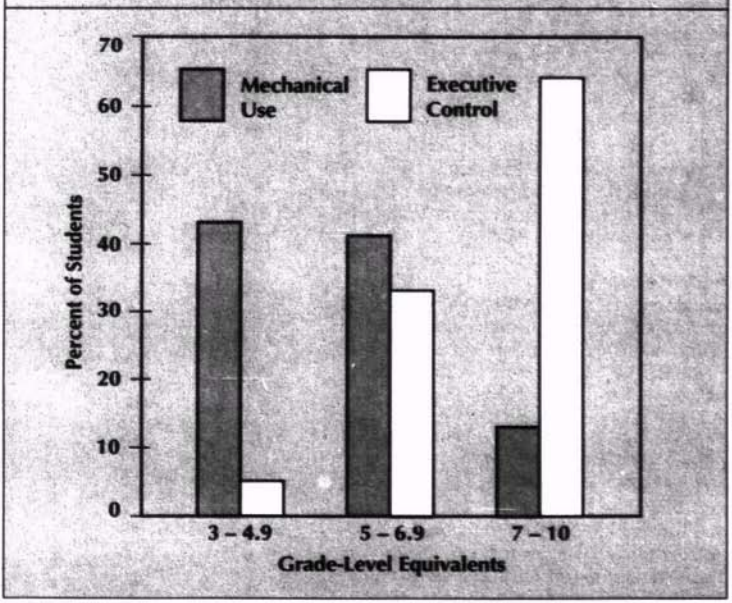
The clearest test of the first question was in the elementary schools where, in self-contained classrooms, individual teachers have instructional responsibility for curriculum areas other than reading. To determine whether any differences in achievement were a function of developed ability to learn, we used reading level as an indicator of general competence. We compared the classes of the teachers who had reached executive control with those of the teachers who performed at the mechanical level, with respect to reading level. We found them to be about equal in both mean and range.

The social studies tests from the Iowa Tests of Basic Skills battery was administered to the 5th grade students at the end of the second year. The achievement of the classes whose teachers had reached executive control was compared with the classes whose teachers used them mechanically (and, thus, generally less than they could be used appropriately).

When the two distributions are compared, the median student in the "executive control" classes is between the 85th and 90th percentiles of the "mechanical use" classes. Compared to national norms, the median student of the "executive control" classes was at the 76th percentile, compared to the 44th percentile for the "mechanical use" classes. At the time the tests were given, the median grade-equivalent score for the national sample was 5.8. The median grade-equivalent scores for the "executive control" classes range from 6.5 to 7.9, or from 0.7 to 2.1 above the national median. For the "mechanical use" classes, the range was from 5.0 to 6.1. The distributions of the extreme classes barely overlap. Figure 1 depicts the comparison between the "executive control" and "mechanical use" classes in grade-equivalent terms.

The message is clear. Skillful implementation of these research-based teaching strategies can have a substantial impact on student achievement. However, to reach their full potential, these models must be used with considerable skill and frequency. The "mechanical use" classes are not achieving badly in normative terms—in fact they are above average for schools equivalent in socioeconomic status—but their students could have learned much more. Thus, we need to find ways of increasing the impact of training. We have many clues about how to achieve this, particularly for providing more explicit training for those teachers who require it; some of our previous research on the relationship between conceptual level of teachers and need for structure in

Fig. 1. Comparison of "Executive Control" and "Mechanical Use" 5th Grade Classes in the Social Studies



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training will be useful here (Joyce et al. 1981).

The best answer to our second question—whether we narrowed the achievement gap between the children of the poor and their economically advantaged counterparts—lay in the study of the middle school. The promotion rate for the school rose from 30 percent before the project began to 70 percent at the end of the first year and 94 percent at the end of the second year, using the same standards for promotion. The magnitude of the increase certainly indicates that student learning is on the rise.

Because the school district administrative staff and, reportedly, members of the board of education place more credence in "standard tests" than on local tests and teacher judgment of achievement, the district's staff development unit administered the ITBS battery in science, social studies, mathematics, and one language test at the end of the second year to attempt to confirm the standards used for promotion in normative terms. This testing also provided us with the opportunity to explore whether the 8th grade students, who had been exposed to the program for two years, had gained on their wealthier counterparts.

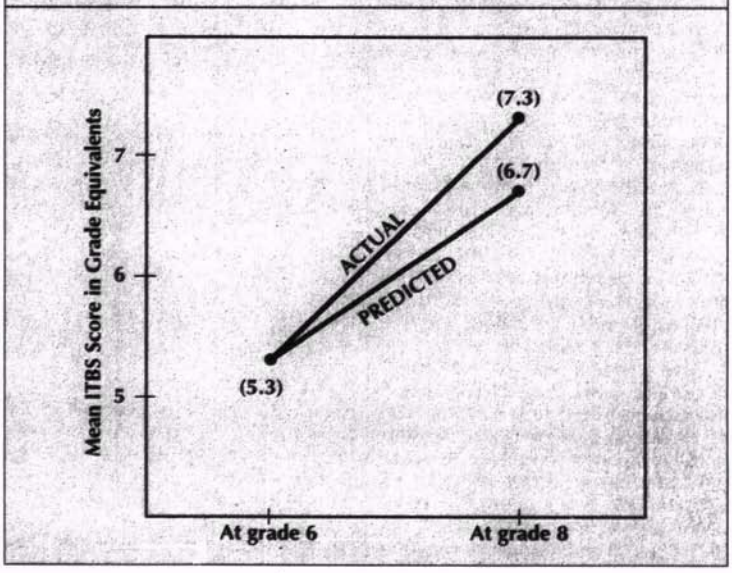
The analysis, which compared 6th and 8th grade students, dealt with our question about whether the students had nonetheless continued to fall behind "middle class" students. It confirms our impression that the majority of the students are now making "normal" progress.

The social studies scores of the 6th grade students indicate that, through the first six years of their schooling, the average student had been achieving the equivalent of about seven months of growth for each year in school (10 months of growth being, by definition, the average for the national sample). The mean score on the social studies test for the 6th grade was 1.5 grade equivalents below the national mean (5.3 compared with 6.8 for the national sample). If the students continued at that rate of growth, we would expect that in the 8th grade the mean would be 6.7. However, the 8th grade mean was 7.3 for social studies, still below the national average but six months higher than their past rate of growth had been (see fig. 2).

Their probable rate of growth was about average for the national sample. The mean grade equivalent was 7.5 for science and 7.7 for mathematics. In the 6th grade, only five 6th grade students scored as high as 7.0. By contrast, 13 8th grade students scored 10.0 or higher, indicating that the school had become an environment that would support above-average achievement.

Given the educational history of the school, it is quite an accomplishment for it to become a place where average achievement is now normal. Much remains to be done, of course, especially to increase the executive level use of the teaching models and to drive toward equality in overall achievement. However, if the current levels of achievement can be sustained, most of these students will not be wiped out in the economic marketplace, as appeared to be their destiny before the

Fig. 2. Predicted and Actual Achievement in Middle School Social Studies



program was initiated. Moreover, if the students can increase their learning rates as much as they appear to have done, there is no good reason why they cannot be helped to increase them still further.

From Anxiety to Pleasure

This project relies on staff development to reorganize the workplace and help teachers learn teaching strategies. Hence, it is different from a curriculum or technological innovation where a new program of study or learning device is "put into place" and its effects are studied. In our project, as appropriate implementation is achieved, effects are expected to be gradual but eventually large. The district has been able to bring about large changes in the workplace, and the cadre development has been splendid. The phase one teachers have practiced unfamiliar strategies until many of the teachers have reached a good level of skill with them. The study groups are functioning, and the school faculties as a whole are making concerted efforts to advance student achievement in specific areas. The students are learning more, and social control is more a function of instruction than of coercion.

The phase two schools are in about the same developmental stage as were the phase one schools a year ago, with uneven implementation and a great deal of skepticism on the part of many teachers. The pessimistic attitudes of many teachers about the possibility of improving student learning are not intractable, but success by peers has little apparent effect on it. The practice of collective action does have effect, albeit gradual, provided the workplace is changed to make cooperative behavior the norm.

We do not believe that success in improving student learning will sustain the collaborative activity. Success makes it easier to reiterate the purpose for changing the workplace, but the schools will surely return to their previous states fairly rapidly unless they are well tended. Also, success in some schools does not inspire most teachers in other schools. The most active resistors fight the cadre as actively as they fight consultants from outside the district—and the cadre have less experience in dealing with resistance.

Collective action does have effect, albeit gradual, provided the workplace is changed to make cooperative behavior the norm.

However, the changed organism offers many satisfactions—and the concerted schoolwide efforts are rewarding to those teachers who experience the power of working together and the real and immediate effects on the students. Better-planned lessons are more satisfying to teach, and borrowing the ideas and materials of others becomes a pleasurable source of success.

The collegial setting is least satisfying to the least-prepared teachers, whose shaky hold on subject matter and uninspired teaching is unmasked in the collegial environment. This is necessary but sad; and it takes a long time to remedy, for the least competent teachers learn both subject matter and teaching practices more slowly than do the others. It is natural that they would want to hide in their classrooms. Nevertheless, the charisma of the most inspired teachers should dominate the environment. Where it does, the learning climate can change quite rapidly—far more so than conventional wisdom would predict.

In the few schools we have been discussing, hundreds of students are daily experiencing success and can expect promotion rather than failure and, just as important, know they have earned that promotion. Social control is becoming an effect of instruction rather than "management." Teachers are learning from one another and are welcoming the fruits of research into their repertoires. It is a pleasure to watch their transition from anxiety to pleasure in the company of their colleagues.□

References

Black, J. (1989). "Building the School as a Center of Inquiry: A Whole-School Approach Built Around Models of Teaching." Doctoral project, Nova University, Fort Lauderdale, Florida.

Fullan, M. (1982). *The Meaning of Educational Change*. New York: Teachers College Press.

Joyce, B., and B. Showers. (1987). *Student Achievement Through Staff Development*. White Plains, N.Y.: Longman, Inc.

Joyce, B., L. Peck, and C. Brown, eds. (1981). *Flexibility in Teaching*. White Plains, N.Y.: Longman, Inc.

Joyce, B., and M. Weil. (1986). *Models of Teaching*. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Lortie, D. (1975). *Schoolteacher*. Chicago: University of Chicago Press.

Showers, B. (1989). "Research-Based Training and Teaching Strategies and Their Effects on the Workplace and Instruction." Paper delivered at the annual meeting of the American Educational Research Association, San Francisco.

Sudderth, C. (1989). "The Social Battleground of School Improvement." Paper delivered at the annual meeting of the American Educational Research Association, San Francisco.

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