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ABSTRACT

Emphasis on the traditional approach in educational research has given way to the scientific approach, and, gradually, the focus of research has shifted from the teacher to include student behavior. Many variables previously associated with teacher behavior are recognized as being associated with student behavior. Future research must use previous studies to formulate a clearer pattern for effective teaching. Researchers have relied on a global description of process/product to test the effectiveness of learning experiences, but that research emphasis should also include studies of the relationship between teacher competencies and learning experiences. Since pupil achievement is related to these experiences, they must be controlled to facilitate learning. Certain variables that have already been proven valid through study may have such strong influence over learning that other variables may be masked. Future studies should attempt to control such variables as management skills to see to what extent other variables may affect learning. Research has been successful in identifying effective teacher behaviors, notably in the early grades, in teaching basic skills. Studies identifying those teaching variables that apply to upper grades and in different context areas need to be developed. (Authors/JD)

Research in Effective Classroom Instruction: Implications for Preservice and Inservice Education

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Implications for Preservice and Inservice Education

"The teacher teaches, but the pupil learns" (Medley, 1977, p. 70). Teacher effectiveness research is aimed at finding out why some teachers are consistently more successful in maximizing pupils' learning than are other teachers. Although educational research has been going on for some time, research results that specify which teaching variables affect learning, and to what extent, has only recently begun to yield dependable results.

As with any new science, the first efforts at problem solving are rarely successful. Earlier studies of instructional efficacy approached this problem from the pupils' point of view; the pupils themselves were asked which teachers were effective. Such investigations dealt with the phenomenon of "perceived effectiveness" rather than with measurable outcome variables and results were inconclusive at best. Characteristics of an effective teacher were the same as for any other pleasant, helpful successful person. Nothing about what this teacher actually did to be effective was determined. In other early studies the purpose was to find the one best approach. Materials or methods were examined to determine the one methodology that would work with all teachers for all students. Again, results were inconsistent and of little help in identifying specific processes of instruction that were associated with pupil learning.

Recent teacher effectiveness research and accountability

Results of recent teacher effectiveness research are pointing to the same information time and again. As some traditional views fall aside, others remain valid and new views are being formulated. The

organized teacher who provides the proper activities for learning is still the accepted model. This teacher may not have some attributes formerly thought important, but he/she does have a definite pattern of teaching applicable to the content and context of the lesson. This teacher provides the most opportunity to learn coupled with efficient, apparently effortless classroom management.

Teacher accountability has brought heightened interest in defining and identifying effective teachers. School systems around the country are seeking information to be in a position to do two things: (1) to identify, through some easily administered means those teachers who are effective, and conversely those who are not; and (2) to be able to offer inservice programs to the less efficient teachers, which will raise their performance to a more satisfactory level. Consequently, a number of competency based evaluation instruments have been developed. Unfortunately, when the results from many of the items on these instruments are compared to how effective teachers teach, there have not always been positive relationships. Evaluation is still largely based on what we all "know" makes a good teacher, but often these very traits do not relate positively to student achievement and some actually have a negative correlation.

The initial efforts at identifying effective teachers were based solely on subjective opinions. The first teacher evaluation instruments were often developed the same way (Coker, Medley, and Soar, 1980). First a list was made of attributes thought to represent teacher competencies. A panel of experts then reviewed the list and a rating scale was developed. The instrument was then used to evaluate teachers as to their competencies.

There are several problems with this approach. First, the items on the instrument may not actually measure a particular competence, and second, the competence being measured may not have a correlation to pupil achievement. Coker, et al (1980) undertook to examine one such competency based teacher evaluation. The competency items were developed by teachers working with expert consultants. They listed those attributes thought desirable for effective teaching. This instrument was then used to evaluate teachers in 100 classrooms. The achievement growth of the pupils in these classrooms was also gathered and the two sets of data were compared. Since these competencies were carefully chosen to be examples of effective teaching behavior they should have all correlated positively with pupils' achievement growth. Of 13 significant relationships, five were negative, others related positively for one grade level or content area and negatively for another, and some were positive for achievement while negative for self-concept or vice versa. Teachers' maintenance of self-control in the classroom and with students was the only competency to relate positively in all contexts.

Such inconsistencies with competency based teacher certification programs are frustrating to those who must deal with them. The best way to evaluate teachers still seems to be the use of criteria that address student achievement gains. Instruction effectiveness based on achievement criteria does not necessarily lessen the importance of affective dimensions of teaching, but places the emphasis on a major function of teaching.

In most states, teacher certification is based on training experiences and the development of perceived teacher competencies. This

approach is valid for teacher evaluation if in fact the training experiences and the teacher competencies in question do produce the desired pupil outcomes. Medley (1977) wonders why focus has not instead been placed on the actual learning experiences the teacher provides for the pupils. This variable is more easily measured, and outcomes will still be related to pupil achievement. The teacher has more control of these activities and will be more likely to modify behavior to increase pupil achievement goals.

The growing data base in teacher effectiveness has shown that teachers do make a difference, but not all are able to teach effectively. Preservice and inservice training programs are continually being developed to aid teachers in increasing their skills. Rupley (1977) found that teachers tend to be stable from year to year in their teaching effectiveness. McCormick (1979) and Anderson, Everston and Brophy (1979), however, found that teachers can change. For teachers to change their instructional patterns, though, care must be taken in the preparation of inservice programs. Teachers will adopt new behaviors only when skills are specifically described, when the behaviors are familiar, and when a rationale is given that is acceptable to the teacher. New ideas must be usable, must fit the teacher's role definition and must be cost effective in time and energy (Goodlad and Klein, 1974; Hodges, 1980).

Preservice and inservice education programs

In developing a program for training new teachers or modifying the behavior of inservice teachers, the results of recent research need to be taken into account. Certain behaviors have been shown to be particularly effective at certain levels and for use with certain content areas. Brophy (1979b) presents two lists of specific teacher behaviors

shown to be positively related to learning. They are included here as examples of what could be used in an inservice program to improve teacher effectiveness. The first set is taken from the study of teaching in first grade reading groups conducted by Anderson, Everston, and Brophy (1979).

1. Once in the reading group, the children should be seated with their backs to the rest of the class while the teacher is facing the class.

2. The introduction to the lesson should contain an overview of what is to come in order to mentally prepare the students for the presentation.

3. The teacher should work with one individual at a time in having the children practice the new skill and apply the new concept, making sure that everyone is checked and receives feedback during the lesson.

4. The teacher should use a pattern (such as going from one end of the group to the other) for selecting children to take their turns reading in the group or answering questions (rather than calling on them randomly and unpredictably).

5. When call-outs occur, the teacher should remind the child that everyone gets a turn, and he or she must wait his or her turn to answer.

6. After asking a question, the teacher should wait for the child to respond and also see that other children wait and do not call out answers. If the child does not respond within a reasonable time, the teacher should indicate that some response is expected by probing.

7. Praise should be used in moderation. The teacher should praise thinking and effort more than just getting the answer and should make praise as specific and individual as possible.

8. Criticism should also be as specific as possible and should include specification of desirable or correct alternatives." (pp. 36-37).

Brophy gives as an example of a similar list of specifics for teachers in a different grade level and teaching a different subject, the following suggestions from Good and Grouws (1979) for fourth-grade

mathematics instruction.

1. Concentrate on whole class (not small group) instruction.
2. Begin with review (lasting about eight minutes) of concepts and skills stressed in the previous homework.
3. Collect and check the homework.
4. Ask several mental computation questions during the review.
5. Spend about 20 minutes developing new content (orienting, explaining, demonstrating).
6. Include questions, opportunities for controlled practice, and review/elaboration in the development portion of the lesson.
7. Allow about 15 minutes for seatwork, preferably uninterrupted successful practice.
8. Hold students accountable by checking their work.
9. Assign homework regularly - about 15 minutes worth, which includes one or two review problems.
10. Conduct weekly and monthly reviews.

Context variables and effective instruction

Many of the context variables that will influence how teachers differentiate their instruction have been identified (Brophy and Everston, 1976). Careful attention to such variables must be given paramount consideration in a program intended to enhance the quality of teaching. Primary grades usually have a single teacher with curriculum directed toward learning basic academic skills. Students are learning the role of student and the teacher spends a good bit of time on behavior related interactions, therefore, most accept the teacher as an authority figure and even as a parent substitute. In grades four to six, most students still have one teacher, but the pupil/teacher relationship becomes more businesslike, focused on teaching and learning. There are fewer behavior oriented interactions, with the

student being very industrious and conscientious in his/her role. Pupils in grades seven to nine are adolescent and peer groups have a large impact on pupil behavior and academic performance. At this time there should be more teacher supervision but during these years, typically, students are switched from class to class and teacher to teacher each period. The result is a significant reduction in actual teaching time; time on task is reduced accordingly. Teachers tend to become classroom managers first and teachers second. High school students switch their focus back to the academics. It becomes important again to learn the tasks at hand to prepare for graduation. The teachers are once again able to concentrate on the curriculum content. Students are responsible for most of their learning by reading or working on individual projects and the class has become focused on learning.

School effects on pupil achievement

It is true that the teacher is the primary influence in pupil achievement, and many preservice and inservice programs are aimed at modifying teaching behavior to facilitate this learning. It is also true that the school itself has a bearing on pupil achievement. Halliman and Sorensen (1975) define "the learning process...as an interplay between two sets of resources: the set of intellectual, psycho-social resources possessed by the student, such as his ability, motivation and attitudes toward learning, and the set of opportunities for learning provided by the school" (p. 2). Student resources such as intelligence, socio-economic background and peer group have a measurable effect on student achievement. The most important school effect, however, is the value climate of the school. A student body with generally high expectations will tend to encourage its individual members to have high expectations.

There is some thought that this may be detrimental to low achievers, however. In such a school, a low achiever is placed in the position of having even a larger percentage of the student body performing at a level higher than his/her level. While his or her own academic performance may actually be higher, the ranking will not and in fact may fall, resulting in a decreased level of self-esteem. Conversely, a school body or teaching staff with low expectations will depress individual student achievement by setting lower goals and expecting less.

There are schools whose students fall within the usual range for predicted academic achievement and yet whose actual pupil achievement gains consistently exceed the predicted for their student bodies (Austin, 1979). As with effective teachers, one single variable does not hold the key to producing effective schools. There is a pattern of expectations and behaviors held by the principal and the teachers that yields higher scores. This pattern produces a teaching environment conducive to higher pupil achievement. While each school did not adhere to each principle, the following group of factors was characteristic of the group as a whole:

-Strong principal leadership (for example, schools 'being run' for a purpose rather than 'running' from force of habit);

-Strong principal participation in the classroom instructional program and in actual teaching;

-Higher expectations on the part of the principal for student and teacher performance advancement;

-Principals felt that they had more control over the functioning of the school, the curriculum and program, and their staff;

-Greater experience and more pertinent education in the roles of principals, teachers, and teacher aides;

-Teachers were rated as warmer, more responsive and showing more emphasis on cognitive development in classes that did not involve direct reading instruction as well as in reading classes;

-Teachers expected more children to graduate from high school, to go to college, to become good readers and to become good citizens;

-Teachers were more satisfied with opportunities to try new things; they were free to choose teaching techniques in response to individual pupil needs;

-More satisfactory parent-teacher relationships;

-Job responsibilities for the teacher aides included working across all grades with primarily small, low-ability groups; close involvement of teachers and paraprofessionals with pupils;

-On several measures, differences seemed to be more pronounced in grades one to three than in grades four to six;

-Schools had a longer instruction day;

-In evaluation, the teacher relied almost completely on teacher-developed tests and teacher judgments of student achievement;

-More positive self-concept and a feeling of controlling their own destiny observable as early as grade three on part of children. (p. 12)

A school with these characteristics will provide an environment that is supportive of the teaching variables found to be relative to higher achievement gain.

Future implications and considerations

It is clear that educational researchers are no longer using a shot gun approach to study effective instruction. Recent studies have taken definite directions. Emphasis on the traditional approach has finally given way to the scientific approach and gradually, the focus of research has shifted; not only is the teacher under study, but student behavior is under scrutiny. Many variables previously associated with teacher behavior have been recognized to have another facet, one concerned with

student behavior. For instance, content covered that relates to what the teacher offers to the student has an accompanying variable of academic engaged time referring to exactly how long students apply themselves to learning. Also, teacher behavior is now seen to be more relative to context than had previously been assumed. What is good for one grade is not necessarily good for another and what works in one subject area may not be applicable to another. While there is still criticism that much of the data are narrow and not of practical use, these data do relate to student academic achievement.

Future research must now build on this beginning to formulate a clearer pattern for effective teaching. The past trends have relied on a global description of process/product to test the effectiveness of learning experiences provided by the teacher as they relate to pupil achievement. Hedley (1977) suggests that there is still need to continue this line of research to further validate previous findings and to discover new variables in the effectiveness puzzle, but that research emphasis should also include studies of the relationship between the teacher competencies and the learning experiences provided for the pupils. Pupil achievement is related to these experiences, consequently, it would appear that these experiences must also be controlled to facilitate learning.

Brophy (1979a) supports a systematic approach to future research: first observing, then correlating the data, followed by experimentation and further validation. Care must be taken not to hurry through these steps and careful study must be made before a variable may be properly manipulated. Context may influence the variable to a degree that makes data meaningless. Experimental studies must be careful not to put such

controls on the teaching situation that results in findings which would be meaningless or invalid in an actual setting. If, however, the variable under consideration has been identified and those contexts under which it tends to operate are explored and taken into consideration, valid information may be realized.

Research needs to go beyond what has been established. Certain variables that have already been proven valid through study may have such strong influence over learning that other variables may be masked. Future studies should attempt to control such variables as management skills, to see to what extent other variables may affect learning. It is time to use the information available to find new relationships.

The specific contexts that influence particular learning variables demand investigation. The affected variables need more study with some control of these contexts or at least awareness of these contextual influences.

There are several areas where research has been successful in identifying effective teaching behaviors, notably in the early grades in teaching basic skills. Studies identifying those teaching variables that apply to upper grades and in different context areas need to be developed. Research in the affective domain has been restricted by the absence of ways to measure affective outcomes. This area also requires exploration.

While knowledge for the sake of knowledge is interesting, it should not be the final goal of effectiveness research. The ultimate goal must be to use this knowledge to develop effective teachers for children. Researchers are beginning to solve the riddle, for they have found many

variables affecting the primary child's reading achievement. This information can be used in training new teachers and helping experienced ones. In the coming years, it is hoped that more will be learned to further teacher effectiveness in a variety of other content areas and at a range of grade levels.

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