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ABSTRACT

The complex task of identifying the characteristics of effective teachers involves analysis of many variables: those dealing with teacher characteristics, those that are context-based, and those that are process-related. Much diversity exists in all three areas among effective teachers, a phenomenon which confounds the problem of precise description of desirable teaching behaviors. In spite of the large amount of process-product research, the current status of research on teacher effectiveness is not impressive by reason of its sparsity and inconsistent results. Results of previous research studies indicate that problems with research on teacher effectiveness include: (1) Research does not measure the teaching process; (2) Records on teacher performance are not kept; (3) Actual classroom behaviors are not monitored; (4) Teacher performance criteria are not specifically denoted and evaluated accordingly; and (5) Improved research methodology and designs in the area of teacher effectiveness are needed. (Author/CJ)

RESEARCH ON TEACHER EFFECTS

The complex task of identifying the characteristics of effective teachers involves analysis of many variables: those dealing with teacher characteristics, those that are context-based, and those that are process-related. Much diversity exists in all three areas among effective teachers, a phenomenon which confounds the problem of precise description of desirable teaching behaviors. But is precise description of effective teaching desirable in view of the complexity of the task and the controversy about the nature of teaching?

Further, the process of delineating effective teaching is complicated by reason of the controversy regarding its status as an art or a science. In this vein Gage (1964) noted that teaching requires artistry by reason of its involvement with human beings, their emotions, and their values. On the other hand, it is a science and is amenable to scientific scrutinization, a process which does not dehumanize teaching, but rather "puts it into focus." Through analysis of generic aspects of teaching by means of observation of teaching behaviors, scientific data about teaching excellence can be derived which demystifies the entire process.

Despite the pervasive rash of process-product research, the current status of research in teacher effectiveness is not impressive by reason of its sparcity and its inconsistent results. In this perspective, selected studies dealing with the knowledge, the abilities, and the attitudes of effective teachers are reviewed.

For the most part, research relative to teacher effectiveness has been correlational in nature noted Cruickshank (1976). He concluded that research can be categorized as that which explores relationships between presage, context, or process variables. "Presage variables" deal with teacher characteristics such as race, sex, social class, and education. "Context variables" have as their referent the conditions to which teachers must adjust, namely, the characteristics of pupils, schools, and the classroom. "Process variables" relate to the actual activities in the classroom: pupil talk, teacher talk, and time on task. Few research studies treating these variables are of an experimental nature which attempt to determine whether different educational treatments have different side effects on student outcome.

Having conceptualized teaching as a science, many teacher education institutions have developed performance-based criteria as a standard for teacher certification subsequent to the United States Office of Education's 1968 plan for the reconstruction of teacher education curricula. Joyce and Weil (1972) considered this to be an attempt to apply broad systems planning techniques to teacher education in the United States. As a result of this movement, investigations of teacher performance focused on specific, denotable teacher behaviors and attempted to relate these to student achievement. Educators of this persuasion maintained that emphasis on process-product research strength-

ened the scientific foundations of research because it resulted in the more specific delineation and the objective evaluation of teaching variables and student achievement. Conversely, others offered the caveats that teacher education institutions committed themselves to competency-based education despite the absence of empirical research linking teacher behaviors to student achievement (Coleman, 1966; Jencks, 1972; Mosteller and Moynihan, 1972).

Rosenshine and Marten (1974) screened 150 proposals on teacher education and teacher behaviors submitted for consideration at the 1974 Annual Conference of the American Educational Research Association. Commenting on the problems with research, they cited the following: (a) The research focuses on well-covered areas such as teacher training and teacher beliefs, but neglects other areas such as teacher behaviors, student outcomes, or methodology of research. (b) The research is repetitive, but noncumulative; in the areas of teacher training and teacher beliefs, in particular, there is little awareness of previous efforts. (c) There is a lack of research that tests competing and alternative hypotheses. In sum, these reviewers preferred studies which treated the validation of teaching skills in terms of student outcome because they perceived this to be an area in which little research had been conducted.

Some 50 of the most conclusive process-product studies were reviewed by Rosenshine and Furst (1971). These focused on generic teaching behaviors thought to be effective across subject areas and various types of curricula. Their conclusions were that students learn best when the following teaching behaviors are present: (a)

clarity, (b) variability, (c) enthusiasm, (d) task-orientation, (e) student opportunity to learn criterion material, (f) use of student ideas and general indirectness, (g) criticism, (h) use of structuring comments, (i) questioning skill, (j) probing, and (k) attention was given to the level of difficulty of the instruction. The first five variables received strong support and the remaining six had less support, but appeared to merit further study.

Similarly, Dunkin and Biddle (1974) presented a major review of process-product studies. Generally, the conclusions of these studies supported the findings of Rosenshine and Furst, though the authors cautioned that few of the correlational relationships identified were verified by experimental studies.

In presenting a major critique of the process-product research Heath and Nielson (1974) analyzed the 50 process-product studies examined by Rosenshine and Furst in terms of the following seven characteristics: (a) criterion of student achievement, (b) operational definitions of teaching behavior, (c) statistical results: legitimacy of statistical tests, (d) sample characteristics, (e) study conditions, and (f) comparability of groups. As a result of the analysis, the investigators concluded:

1. An empirical basis for performance-based teacher education does not exist.
2. Operational definitions of teaching do not, in many instances, correspond to the teaching variables cited.
3. Operational definitions of student achievement are inadequate.
4. Research designs of most studies are weak.

5. Statistical analysis is undependable in many of the studies.

It is their conclusion that the research of the last 50 years did not demonstrate an educationally significant relationship between teacher characteristics and student achievement.

In the same vein, Rosenshine (1976) noted that since 1957, fewer than 25 studies have been conducted on any one variable, e.g., teacher praise or teacher questions. Research on observable teaching behavior was sparce; consequently, the findings served as hypotheses rather than as validated variables. The focus must shift from searches for effective teaching to reliable cause-effect relationships (Brophy, 1975).

Brophy and Evertson (1974 a,b,c), who replicated Kounin's (1970) research are in agreement with his conclusions, namely, successful teachers were able to: (a) demonstarte more alertness and awareness, (b) sustain one activity while monitoring another, (c) pace lessons in order to maintain group momentum, (d) create group alertness through use of suspense creating questions and presentations of novel materials, (e) monitor verbal and written response, (f) generate enthusiasm, and (g) provide variety in classroom activities. In addition, it was found that effective teachers produced inceased gains on achievement tests.

A series of studies was conducted by Brophy (1973,1974), Brophy and Evertson (1973 a,b, and 1974 a,b, and c), Peck and Veldman (1973), Veldman and Brophy (1974) which included methodological and design innovations developed to clarify the process-product rela-

tionship. A two-year replicated study involving 31 second and third grade teachers selected because of their consistent success in promoting learning gains, revealed that teachers have different and significant effects upon student learning. For example, Brophy and Evertson found that high socio-economic status students learn more when methods of overlearning are used initially. Modification of the program is called for when students gain greater independence in learning. The investigators suggested that indirect teaching is most effective after students have mastered both the fundamental tool skills and work habits essential for initiating and maintaining their own learning.

In conclusion, these studies seemed to indicate that there is a need for more research in the area of teacher behavior and teacher effects. Further, these studies implied that the problems with research are as follows: (a) Research does not measure the teaching process; (b) Records on teacher performance are not kept; (c) Actual classroom behaviors are not monitored; (d) Teacher performance criteria is not specifically denoted and evaluated accordingly; and (e) There is a need for improved research methodology and designs in the area of teaching effectiveness.

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