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ABSTRACT

The research on teacher effectiveness that is reviewed in this paper focuses on teaching as behaving--the observable aspects of teaching--and teaching as thinking--the inner aspects of teaching. The section on teaching as behaving emphasizes the encouraging results of direct instruction (academically focused, teacher-directed classrooms using sequenced, structured materials), but also discusses management concerns and what constitutes effective class management, psychological conditions that create a good learning situation, and the influence of students and other context variables on teacher behavior. The section on teaching as thinking provides discussions of the teacher as a planner and as a decision maker, teacher judgment, and teachers' implicit theories and perspectives. The summary of these sections notes that teaching is a process of allocating instructional time and assigning academic tasks in such a way that students have opportunities to learn while experiencing a high rate of success and engagement time, and that teaching is a complex process involving more than just a series of discrete, unrelated behaviors. (RL)

HAVE YOU DISABLED A STUDENT TODAY? A LOOK AT TEACHER EFFECTIVENESS

by KATHY PIKE

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> Dense fog rolled in from the ocean one afternoon so that by the time school was dismissed the nearest buildings were almost blotted out. The children bounded out the door squealing with delight at this unexpected development. But Priscilla stood at the door of the first grade classroom looking very worried. She turned to the teacher and said, "I can't go home today."
>
> "Why not?" the teacher asked.
>
> "How will I know when I get there?" she replied.

The purpose of research in teacher effectiveness is to help teachers "know how to get there."--to help teachers become aware of their interactional patterns, modify or change them if necessary, and thus improve their instructional strategies. In addition, research on teacher effectiveness has as one of its goals to capture the essence of the reality of life in the classroom--to describe what currently comprises "effective teaching" and also what effective teaching can ultimately become. Thus, while acknowledging the realities of the classroom, while helping discover and perhaps create effective schooling practices, research on teacher effectiveness is providing a framework for thinking about teaching.

The purpose of this paper is to provide a survey of the literature in teacher effectiveness research. Through the surveying of the educational literature both the visible (the observable) abd the inner acts of teaching will be discussed. From the findings realistid implications for teacher improvement will be drawn.

> An optimist builds castles in the sky.
> A dreamer lives there.
> A realist collects rent from both of them.

"Have you Disabled a Potential Read'n Dropout Lately?"

"I hate read'n. It ain't my thing, and I don't dig it. And as soon as I'm old enough I'm gonna quit school. Then I'll git out of that old read'n. Yes, nobody, but nobody, will ever catch me read'n a book again. I hate my teacher, too. She thinks she's so smart jest because she can read real good, and she thinks read'n is the most important subject in the world and it ain't, I betch. Jest wait, I'll show her how I can get along without read'n. I'll go tc the moon where there are no books or

teachers. Then I won't have to read in a dumb circle.

I don't want to be a bluebird anyway with all those dumb girls. But I hate my sparrow group too. I hate those dumb birds. I could read if I wanted too--jest as good as the bluebirds, but teacher keeps pick'n on us sparrows.

"Johnny, you left out a word. Johnny, you must read more smoothly, Johnny, this. Johnny, that."

She gits you so mixed up that I can't read a word. Then the other kids laugh or show off when I make a little mistake. I hate read'n in a circle. I hate read'n. I hate it, hate it, hate it." (Goldsmith, 1972).

In recent years, the study of teacher effectiveness has gained a great deal of momentum. The acknowledgement by the educational establishment that teachers do indeed have an effect on their students, that teaching is not the mindless adherence and following of rules, various formulae, and folklore has stimulated a wide range of both descriptive and experimental studies (Doyle, 1972).

Although research on teaching is still a young science, research on teacher effectiveness has been conducted for many years. For a review of the historical development of teacher effectiveness research, the reader is referred to Medley (1977,1979) and to Dunkin and Biddle (1974). Generally the research cited has been considered flawed, confused, and difficult to interpret. Martin (1979) summed it up stating that after 200 years of education in the U.S., there is very little empirical research to which teachers can refer in order to justify the effectiveness if their behaviors for bringing about changes in their students. In recent years there have been advances in both methodology abd conceptualization. Today's research reflects both educational theory and takes into account contextual affects and variables. A multiplicity of findings have emerged but they can be --and will be in this paper-- discussed in terms of two major focuses.

1. Teaching as Behaving--the Observable Aspects of Teaching
2. Teaching as Thinking--the Inner Aspects of Teaching

Teaching as Behaving

A large amount of the teacher effectiveness research has been on the observable aspects of teacher behavior and findings on the visible acts of teaching tend to reflect three components of what Duffy (1980) terms "the opportunity to learn" variable.

1. Direct Instruction
2. Management Concerns
3. Psychological Conditions

DIRECT INSTRUCTION

Direct instruction encompasses a variety of behaviors used by teachers in classrooms where learning gains have been the greatest. Direct instruction includes those activities that are directly related to making academic progress and to the settings that promote such activities.

The critical aspects of direct instruction include (Brophy, 1979; Rosenshine, 1979; Borich, 1979; Berliner, 1979):

1. Teacher focus on academic goals
2. Extensive coverage of the content with high student involvement
3. Teacher selection of appropriate instructional objectives, goals, and materials, and active monitoring of student progress
4. Structuring of the learning activities and immediate academically oriented feedback
5. A task oriented but relaxed environment
6. A large amount of "on task time" for students

The components of direct instruction that are strongly stressed are engaged time and the teacher's monitoring of student activities. The opportunity for students to learn materials is of major concern in promoting student learning (Berliner, 1979; Rosenshine, 1979; Rosenshine and Berliner, 1978; Wiley and Harnischfeger, 1974; Stallings and Kaskowitz, 1974). This is indicated by both allotted time (time scheduled for instruction) and engaged time (time when the students are actually involved). Allotted time is influenced by both administrative policies and finances, but engaged time depends mainly on the teacher's objectives and managerial skills. Academic learning time is essential for achievement.

Research on teacher effectiveness has revealed a concept that leads to improved student learning--academic learning time. Academic learning time is defined as the amount of time a student spends on an academic task that can be successfully performed (Fisher et al, 1979). It is the amount of "on task" or "engaged" time by students interacting with instructional materials or participating in activities that are academically oriented (Berliner, 1977).

The basic components or measures of time are allocated time, student engagement time, and student success rate (Fisher et al, 1979). Allocated time is the time a teacher provides for instruction in a content area. Time allocations may be different for different students in the same classroom. For a part of the allocated time, students will be actively engaged in working on instuctional tasks. Engaged time is that portion of allocated time in which the students are attending to instruction, i.e., paying attention. The amount of learning that occurs is not only

influenced by engaged time but also by the "match" between the students and the assigned tasks. This measure of "time" is the time when students are engaged with materials and activities that are at an easy level of difficulty so that the students experience a great deal of success. Educators believe that materials that are too difficult do not contribute to skill acquisition and do not allow for practice, repetition, and overlearning.

Therefore, there are three ingredients or measures of academic learning time--allocated time, rate of engagement, and success rate and all are associated with student learning. Students who accumulate more academic learning time usually have higher achievement scores. Consequently, academic learning time can be interpreted as being an ongoing measure of student learning.

Although the relationship between student engagement time and achievement is amply validated and documented, less is known about the circumstances and settings that influence this involvement. Context factors such as subject area, academic activity format, previous achievement growth, and individual differences must be examined to determine their relationships to student involvement times (Cornbleth and Korth, 1980). The fact that students learn when they attend to instructional tasks and do not learn when they are not attending does not provide information about how to get students to attend. The message derived from academic learning time investigations is quite clear. What is not taught and not attended to in academic areas is not learned. If involved time affects student learning, then a greater understanding is needed of how specific academic activities in different contexts with different students might affect the nature of involved time. This might facilitate the development of strategies for increasing student learning.

The other aspect of direct instruction that is considered of great importance is the monitoring behaviors of teachers. Teacher monitoring behaviors are those that insure that the student once engaged will remain engaged. The findings indicate that the most effective teachers are those who are structured, are in control and directive, monitor their student closely, call for frequent repetition and drill, move in small steps, teach to over-learning, and provide evaluative feedback to each student (Berliner, 1979; Rosenshine, 1979; Brophy, 1979).

Summary of Direct Instruction

Therefore direct instruction refers to academically focused, teacher-directed classrooms using sequenced structured materials. It refers to the teacher activities where goals are apparent to the students and sufficient and continuous time is allocated for instructional purposes. Coverage of content is extensive and the students' performances are carefully monitored. Questions are at a low cognitive (factual) level in order for students to produce

correct responses, and the feedback provided to the students is immediate and academically oriented. The teacher controls the instructional goals, chooses the appropriate materials and paces appropriately. The classroom interactions are structured but are not authoritarian in nature.

Why is Direct Instruction Effective?

Direct instruction survives as a criterion for teacher effectiveness because it has several important advantages. It is easier to plan and manage, it provides more modeling of correct thinking and responses for slower children, and it avoids the elitism and labeling problems of ability grouping (Good, 1979; Brophy, 1979). Direct instruction creates an opportunity to learn by engaging students and by insuring that such engagement is maintained.

Uses of Direct Instruction

Direct instruction provides a frame of reference within which the results of other research investigations can be understood. For example, if individualized instruction is too demanding of a teacher's time, there will be less instuctional time, thereby affecting student achievement. Therefore the framework that is provided by a direct instruction model provides a way of looking at any changes in classroom functioning and a means of considering the impact of the resulting change. Also, the concept of direct instruction can be used in considering the appropriateness of any teaching method. To the extent that the method provides for direct instruction, the method can be expected to aid student learning in the basic skills. Therefore, the selection of innovative methods can be based partly on the degree to which the method supports direct instruction.

One aspect of the direct instruction model--engagement in academic tasks--can provide a framework for teachers to monitor their own teaching. Students often vary in the proportion of time in which they are displaying "on-task" behaviors. By observing students and determining the extent of student engagement, teachers can modify their instruction to increase the amount of student engagement. By focusing on student engagement in instructional settings, teachers have a means to assess, evaluate, and perhaps modify their teaching behaviors.

Direct Instruction Reconsidered

Although recent reviews of research on teaching suggest that direct instruction is a more effective way to teach, to some educators the conclusions may be too simplistic, grim and unidimensional (Peterson, 1979). To Peterson, the model of direct

instruction assumes that the only important educational objective is the increase of measureable student achievement, that all students learn in the same way and all students should be taught in the same way. Other negative impacts of the direct instruction model is the potential limiting of transfer of learning. Also, the model implicitly suggests that time is not to be wasted, that students should always be involved. Americans tend to be addicted to time, and occasionally both teachers and students need the "pause that refreshes" (Good, 1979). Since education values a wide range of goals, for example the development of creativity, curiousity, self-concepts, etc., and wants to meet the needs of all students, then students should be exposed to a variety of approaches to fulfill the desired range of humanistic goals. Direct instruction might be reserved for skills learning while other approaches may be used less skills-oriented curricula.

For the most part, the research relates to research on the learning of the basic skills of reading and math. They are generally not based on student learning in other areas of the curriculum, or social or affective learning. It is important to keep these considerations in mind when considering the results and findings of direct instruction. Basic skills are only a part of the curriculum and do not represent all educational goals and objectives. To the extent that skills mastery is an educational goal, using a direct instruction is justified. To the extent that education fosters other goals, other types of instruction are also important.

The results of the direct instruction model are encouraging and suggests that direct instruction is a reasonable and promising model for enhancing student achievement gains. But direct instruction should be used as an "orienting concept" that has to be adjusted sensibly and sensitively to different educational settings (Good, 1979). In order to have impact, the model must vary with conditions in the classroom.

MANAGEMENT CONCERNS

The presence of problems in the management and controlling of classrooms is a potential barrier to successfully implementing classroom instruction. The managerial abilities of teachers have been found to relate positively to student achievement and learning (Good, 1979). Classroom demands are so constant and so pervasive and the managerial abilities of children, especially young children, are generally underdeveloped. Therefore, teachers who are able to structure, maintain, and monitor academic activities have an advantage in teaching the basic skills. Management procedures appear to be major variables related to student achievement. Effective teachers are good classroom managers who create more opportunity to learn by organizing themselves and their classrooms so as to enhance efficiency and minimize wasting of time (Duffy, 1980).

Classroom management is a focus of concern for student teachers, experienced, and for parents and administrators (Brophy and Putnam, 1979). Brophy and Putnam acknowledge that it is important for teachers to know how to deal with behavior problems but the teaching skills that are quite crucial to success in classroom management are those involved in proactive planning and organization, and in creating and sustaining an environment that minimizes the need to deal with such problems in the first place, i.e., they recognize the importance of preventive classroom management.

The best way to deal with classroom management problems is to prevent them rather than to let them develop and then have to deal with them. Teachers can accomplish this by advanced planning and preparation of their classrooms as suitable learning atmospheres. Part of the preparation for successful classroom management is preparation for effective instruction. Instructional preparation takes into account both preparation of the materials for teachers and students and preparation for presenting the information during the instructional lessons.

What Constitutes Effective Classroom Management

Recent publications by Brophy and Putnam (1979) and Evertson and Anderson (1978) have described the managerial techniques that constitute effective classroom management and how they interact with effective instruction. Brophy and Putnam strongly support many of the variables stressed by Kounin (1970): With-it-ness; overlappingness; signal continuity and momentum during lessons; and variety and challenge during seatwork. Teachers who demonstrate "with-it-ness" are continuously aware of what is occurring it all parts of their classrooms and this awareness is communicated to the students. "Overlapping" refers to the ability to do more than one thing at a time, such as being able to respond to requests for help and still keep track of the recitation by members in another group. Overlapping becomes important because it promotes with-it-ness and helps teachers avoid delays by helping maintain an adequate pace.

The classroom is a complex environment and the distinctive features of the classroom environment have serious consequences for teachers. Classrooms are filled with students, activity, and interruptions and many events occur simultaneously leaving little time for teachers to reflect before acting. The simultaneous occurrence of multiple events shortens the time frame and adds an issue of immediacy to the flow of experiences in the classroom. The multidimensionality of classrooms, the occurrence of many events over time, the multi-purposes served in classrooms, and the participation of many people with different needs, desires, and styles make the course of events quite unpredictable. The intensity of demands and the degree of skill necessary for successful management require a specialized knowledge and certain competencies. Teaching involves more than ability and knowledge

of subject matter.

A comprehensive consideration of effective classroom management must include attention to the following: preparation of an effective environment for learning; organizing instructional activities so as to maximize student engagement; development of group management techniques; techniques to resolve conflicts and to deal with students adjustment problems; and orchestration of all these elements into a consistently effective system. No single source or approach can treat all these elements comprehensively.

If achievement in the basic skills is a desired educational goal, then teachers must run their classrooms with a minimum of disruption and with a maximum of student on-task involvement (Good, 1979).

PSYCHOLOGICAL CONDITIONS

Effective teachers create a psychological opportunity to learn by creating and maintaining a climate that encourages students to make maximum use of the provided time. The psychological conditions include teacher efficiency and teacher expectations.

Teacher Efficacy

Efficacy is the type of expectancy that refers to the teacher's expectation of his own ability to be successful as a teacher and the amount of effort and persistence that results. Brophy (1979) says that more effective teachers have a "can do" attitude. They perceive that their students are capable of learning and that they themselves are capable of effective teaching.

Teacher Expectations

The results of studies in teacher effectiveness research indicate that student achievement in the product of relations at various analysis levels, which encompasses environmental factors as well as intrapersonal and interpersonal factors. One example of an interpersonal factor is the role that teacher expectations play in influencing student performance. Teacher expectations has become a topic of present interest and general concern.

The publication of Pygmalion in the Classroom (Rosenthal and Jacobson, 1968) created great interest in the ways in which teachers interact with their students. Rosenthal and Jacobson induced expectations in teachers experimentally and focused on outcomes not mediating processes. As a consequence of Pygmalion results were interpreted to imply that students could perform better simply by making teachers think better of their students'

abilities. The early studies of the effects of teachers' expectations generated a great deal of controversy. Doubts about the reliability and validity of their findings were raised in the professional literature. In addition, replication studies have not strongly supported the idea that teacher bias effects on academic echievement can be directed through the introduction of external information (Dusek, 1975; West and Anderson, 1976).

Since the publication of Pygmalion, the literature dealing with teacher expectations and teacher bias effects has grown. This literature is concerned with the possibility that teachers might, intentionally or unintelligently, hinder student learning because they subjectively feel these students are not capable of learning.

In his review of teacher expectations, Dusek (1975) differentiated the notion of teacher expectancy from that of teacher bias. Teacher bias studies were those that measured teacher effects on student learning after the teacher had been informed, based on outside "evaluation", to expect certain changes. Teacher expectations involves the significant effects that result from the teacher's own self-generated expectations that relate to their students' performances.

The existence of expectation effects has been well documented and seems well established (Cooper, 1979). The evidence indicating that teachers do form expectations is quite abundant (Brophy and Good, 1970; Rist, 1970; Dusek and O'Connell, 1973; West and Anderson, 1976; Braun, 1975; and Dusek, 1975).

While research illustrates that expectation effects may be found in classrooms, Cooper (1979) maintains that there are two other considerations to be taken into account: how performance expectations are communicated; and how these communications influence student performances. Much research is now being conducted regarding the differential treatments of students based on different expectations.

Rosenthal (1974) proposed a four factor categorization:

1. Climate. Teachers created warmer, socioemotional atmospheres for brighter students. They exhibited more smiling behaviors and were generally more supportive and friendly (Cooper, 1979).

2. Verbal Inputs. Teachers' verbal inputs to their students are dependant on performance expectations. Low expectation students receive fewer opportunities to learn new materials and have less difficult materials taught to them. Therefore, the quantity and quality of teacher attempts at new instruction appear to be associated with teacher expectations.

3. Verbal Outputs. (the frequency with which academic

interactions occur and the teacher's persistence in pursuing these interactions to satisfactory conclusions) From a student's perspective, outcomes represent the number of times students and teachers are engaged in academic interactions and the length of time the teacher spends on a given contact. Teachers tend to stay with high expectation students longer after they have failed to answer a question. Persistence following failure takes the form of more clue-giving, more rephrasing, and more repetition (Brophy and Good, 1970). Teachers pay more attention to responses of students described as talented. Teachers also allowed brighter students longer wait-times (Rowe, 1974).
A substantial number of studies exist that report that teachers have more contact initiations with high achieving students (Good, 1970). Teachers often are more willing to pursue answers with high achieving students and high achieving students appear to create more output opportunities for themselves.

4. Feedback. Feedback involves the teacher's use of praise and criticism after an academic exchange. Brophy and Good (1974) found a consistent pattern of teachers' use of reinforcement. Teachers consistently praised higher expectation students more than they do lower expectation students. Cooper and Baron (1977) reported that low expectation students received less praise and more criticism than high expectation students.

Substantial evidence suggests that teacher expectations can sustain performance at undesirable levels. Some teachers do treat students differently depending on their expectations for student performance (Brophy and Good, 1970; Good and Brophy, 1974) and these expectations relate to student academic achievement (Brophy and Good, 1970; Dusek and O'Connell, 1973; O'Connell et al, 1974).

Classroom observations and investigations document the fact that consistent patterns exist of differential teacher behaviors between high and low expectation students. Research findings indicate various specific ways in which teachers vary their behavior toward high and low achieving students (Good, 1981; Allington, 1980).

1. Seating slow students farther away from the teacher thus making it harder to monitor these students and treat them individually
2. Paying less attention to low achieving students in academic situations
3. Calling on lows less
4. Waiting less time for lows to answer

5. Not staying with low achieving students in failure situations by providing cues, follow-up questions, etc.
6. Criticizing lows more often than highs for incorrect answers
7. Praising lows less often
8. Praising lows more for marginal or inadequate responses
9. Providing lows with less accurate and less detailed feedback
10. Failing to provide lows with feedback about their answers more often than highs
11. Demanding less work and effort from lows
12. Interrupting the performance of lows more frequently
13. Emphasizing graphophonic cues over semantic cues in reading instruction

There are several implications of this differential treatment and its influence on student performance. Students taught less difficult material and given less novel instruction eventually show corresponding weaker performances. However, this kind of expectation communication may be sensible in that presenting lower ability students with different materials and exposing them to faster paces may create problems and be undesirable.

To the extent that teacher expectations are based on sound, objective data regarding the students' ability levels, then teachers are not biasing their students' education. The resulting differential behaviors may reflect effective strategies for the students who have different needs. If teacher expectations are based on subjective impressions or irrelevant information, then teacher expectations may cause some students to be treated in a way that could contribute to inferior academic achievement (Dusek, 1975).

There is considerable evidence that during classroom interactions, teachers treat groups of students differently and the manner in which the teacher responds to the students influence the students' self-concepts and classroom performances. Through these interactions, students become aware of what the teacher thinks of their abilities and personality, and this awareness can play an important role in developing their self-concepts (Dusek, 1975).

Several studies indicate that teacher expectations can function as self-fulfilling prophecies but do not necessarily do so (Brophy, 1979). In reality, many researchers conclude that this happens in only a few instances. The investigations have uncovered some of the mediating processes involved when self-fulfilling prophecy effects do occur, i.e., those times when teachers with low expectations behave in ways to minimize achievement. In these instances low expectation students get more criticism and less praise, feedback, and individualized attention.

They are called on less frequently and wait-time for their responses are shorter. Also, teachers may refuse to allow low expectation students to attempt work believed to be too difficult for them. Therefore, self-fulfilling prophecies can occur when teachers treat low expectation students by expecting less from them and thereby teaching less to them.

Through additional studies and as the data base builds, procedures can be developed to minimize the undesirable expectation and attitude effects. For those at the preservice level, this involves more content on classroom dynamics, as well as exercises that are designed to raise consciousnes of those personal preferences that are likely to color impressions of students. For inservice teachers, ways are needed to measure teacher accuracy and give teachers the needed prescriptive feedback.

Teacher expectations remains an important topic. Despite a decade of research, it is still possible to find teachers who interact with low achieving students in unprofitable ways. Much of these unprofitable interactions may be due to the fact that teachers are unaware of interaction patterns. However, most teachers appreciate information about the effects of expectations and do benefit from suggestions for improving classroom behavior. Teacher awareness is the key to diminishing undesirable teacher expectation effects.

THE INFLUENCE OF STUDENTS AND OTHER CONTEXT VARIABLES ON TEACHER BEHAVIOR

One aspect of research on teacher effectiveness is to distinguish those teacher behaviors that increase student learning. The assumption underlying this research is that the teachers are the primary causative factors of teaching-learning behaviors in the classroom. Identifying what teachers do to enhance student learning has been a persistent endeavor in improving the educational process.

However, teaching learning behaviors can also be viewed as outcomes of classroom interactions, i.e., teacher behaviors can be products as well as the causes of student actions (Doyle, 1978; West and Anderson, 1976). Recently an interactive view of classrooms has been proposed. Findings of recent research have suggested that some teacher behaviors can be understood in the light of the demands placed on the teachers by students in their classes. Copeland's (1980) observations of practice teachers support the contention that influence in classrooms is bi-directional in nature. Techniques of student control used by the teachers in this study were more the result of rather than the cause of student achievement and behavior. It must be kept in mind that this study involved inexperienced teachers whose skills and competencies have not as yet had time to develop.

Classroom relationships are reciprocal and students play an important role in shaping the ways teachers behave (Noble and Nolan, 1976; Doyle, 1979; Martin and Evertson, 1980). The student influences range from the methods and language patterns that teachers use, to the kind of and frequency of teachers' questions and feedback.

Teachers respond to personal rewards in their classrooms. Yarrow, Waxler, and Scott (1971) found that teachers were quicker to follow up contacts with students who had been responsive in their last exchange. Teachers stated that they enjoyed working with students who were successful. Teacher behaviors tend to be positive when students are positive and negative when students are negative (Klein, 1971).

Pflaum (1980) noted that the teacher behaviors observed during her study were predicted more by student behaviors than by student status variables (teacher nominated good and poor readers, sex, and reading level). Her findings suggest that links in teacher-student interactions may originate more in student behaviors than out of the teacher's notions of student proficiency and aptitude in reading.

In many instructional instances, teachers basically reacted to students in their classes vs. acted on them (Brophy and Good, 1974). Therefore, the role of classroom interactions and more specifically, the influence students have on teacher behavior, should be considered in teacher effectiveness studies. This bi-directional influence draws into question the results of much of the teacher effectiveness research that presumes that classroom conditions are solely the result of the teacher's influence and actions.

The importance of any teaching act is meaningful only in relationship with the degree and sequence of other teaching acts. Context variables influence teacher behaviors as demonstrated by Powell (1979). Teachers consistently interacted differently with students in different settings. Teacher behavior varied in different instructional contexts, as grade level, subject matter, and whether the instructional pace was controlled by the students.

Considerations of student age and the nature of the teaching-learning process in the early elementary grades is fundamentaly different from teaching at higher grades. Therefore the teaching of young children should be conceptualized and discussed differently (Brophy and Evertson, 1976).

Other contextual variables that influence teacher behaviors in the classroom and that are to be considered are the sex and the SES of the students as well as their achievement levels. Also, the educational goals, objectives, and desired outcomes can influence the nature of classroom interactions.

Looking at teacher effectivness without taking into

consideration the context and the type of outcome can become "an exercise in futility" (Rich and Bush, 1978).

QUALITY OF INSTRUCTION

Teachers' Instructional Practices

From observations of classroom teachers, many investigators have concluded that there is no comprehension instruction going on in the schools (Buike, 1980; Duffy and McIntyre, 1980; Durkin, 1979; Brophy, 1980; Clark and Yinger, 1980; Joyce, 1980; Duffy and Roehler, 1982). Brophy (1980) states that the "biggest single failing of elementary school is that they do not spend very much time directly instructing the students.....Present day teachers spend a lot of time managing the classroom, and distributing, monitoring, or correcting individual work asignments but very little time teaching." Instruction has been equated with practice and is based on the notion of "repeated exposure"--that all students will learn to perform certain tasks if they are exposed enough and given enough practice. Research findings on teacher effectiveness are often interpreted as being supportive of repeated exposure as studies have emphasized the importance of the opportunity to learn and student engagement time concepts that are frequently associated with repetition. Reading instruction research and classroom teaching alike tend to reflect this view which asumes that students inherently have the abilities to perform tasks and only need exposure to bring these abilities to the surface. Taking into consideration the complexity of the classroom, the teacher often gives priority to classroom organization, creating a learning environment, and establishing routines. These attempts to maintain a smooth flow of activities often dominate the teacher's instructional thinking and create what Duffy and Roehler term "the illusion of instruction." Teachers taught as if the major responsibility was that of the students to learn rather than that of the teachers to teach, and as if the objectives of reading instruction will somehow take care of themselves as long as the students get through the material.

Therefore, classroom observation studies have revealed that elementary reading teachers are at best "technically competent" in using efficiently and effectively the "opportunity to learn" concepts of time on task, teaching monitoring, and corrective feedback (Duffy, Lanier, and Roehler, 1980). Rarely was proactive-reflective teaching seen which results when children are provided with clear demonstrations and explicit explanations on how to process the task and then are given guided assistance in step by step progressions of gradually diminishing help until success is assurred. Much of the assisted learning seen in classrooms was of the "reactive" type which is assistance given "after the fact" requiring the students to show failure before

instruction is offered.

The Quest for Refinement (Guthrie, 1982)

The body of emerging findings has typically defined effective teaching in ways that make teachers resemble technicians rather than as reflective professionals (Roehler and Duffy, 1982). The notion has emerged that the most effective teachers generate the largest amount of "on task time" by using direct instruction and effective management techniques (Rosenshine, 1979; Brophy, 1979; Duffy, 1980). While time on task and good management techniques are important, they should not be confused with teaching. As Roehler and Duffy maintain, "Classroom teaching is more than the opportunity to learn"--that another component of successful school learning is the "quality of instruction." Teachers should be more than technicians who are skilled in management techniques and in monitoring their students through academic tasks. Teachers should also assist their students. Teaching as assistance consists of the teacher's ability (1) to create a conducive learning environment (2) to communicate that the responsibility of instruction lies with the teacher and (3) to provide assistance with clear explanations and illuminating cues, and then gradually withdrawing that asistance so that the student can complete his practice activities with a high degree of success.

Very little is presently known about teaching as assistance. Research is needed to see if teaching assisting behaviors do exist, what forms they take, and their effectiveness. Reading demands not only the time to learn but also quality assistance from the teachers. Teachers must focus on the quality of instruction by providing guidance and assistance in developing comprehenders rather than simply generating a "opportunity to learn."

TEACHING AS THINKING; THE INNER ASPECTS OF TEACHER BEHAVIOR

Much has been learned from teacher effectiveness research but studies have yielded inconsistent results and no general "laws" or prescriptions have emerged regarding teacher behavior and student achievement that are applicable over many circumstances or situations. Consequently some researchers are changing their basic question from asking "What works and with whom?" to "What is happening here and why?" The goal is to understand why teaching is as it is. This approach to research on teaching is known as the cognitive information processing approach and is also referred to as research on teacher thinking. In a cognitive information processing approach, the interest is in the psychological processes that are thought to occur in a teacher's mind which direct the teacher's behavior. The teaching model implied is that a teacher is a rational and intelligent person who is faced with many complex situations. The manner in which the teacher deals with this complexity is to simplify it in a rational,

adaptive way. The basic psychological processes do not operate in a vacuum but are embedded in both psychological and ecological contexts. The psychological context is comprised of a teacher's implicit theories, beliefs, and conceptions while the ecological context includes all the external circumstances that facilitate, shape, or limit a teacher's thoughts and actions. Thus, the cognitive information processing approach to research on teaching is concerned with the mental processes that are thought to underlie teacher behavior (Clark and Yinger, 1979).

Much of the research on teacher effectiveness has concentrated on the visible--the observable--aspects of teacher behavior. Virtually little has been studied about the thought processes of teachers--the information processing that occurs before, during and after teaching--despite the fact that teaching is considered to be a thoughtful process and learning a cognitive activity.

In response to the sparseness of information about the "inner acts of teaching" investigations are now being designed and conducted to explore the mental lives of teachers. Research into teacher thinking can be divided into several topics;

1. Teacher Planning and Teacher Decision Making
2. Teacher Judgment
3. Teachers' Implicit Theories and Perspectives

Teacher as a Planner

In a review of the literature on teacher planning, Clark and Yinger (1977; 1980) report that teachers do not follow a rational model while planning. Rather, the planning research depicts the teachers as technicians who mainly manage the flow of activities instead of as professionals who select strategies in order to achieve goals (Brophy, 1980; Morine-Dershimer, 1979; Joyce, 1980). In general, teachers do not use behavioral objectives or goals to begin or guide their planning but rather teacher planning begins with the content to be taught, taking into consideration the setting in which the teaching will occur. Activities--not objectives--appear to be the major units of teacher planning. Therefore, planning can be considered to be a progressive elaboration of a major idea instead of the development of several alternatives and the selection of the best alternative (Clark and Yinger, 1977; 1979; Duffy, 1980).

Teacher as a Decision Maker

Teachers, both consciously and unconsciously, make decisions that affect both their own behavior and that of their students. In order to understand how teacher behavior is related to student learning it is necessary to discover how teachers make decisions to control their performances and to learn how teachers formulate their plans, objectives, and activities that guide them during instruction.

It has become popular in educational circles to characterize the teacher as a problem solver and a decision maker. Teachers are portrayed as rational processers of information who continually make diagnoses, test proposed hypotheses, and make decisions (Borko, Shavelson, and Stern, 1981). However, this conceptualization of teaching more accurately depicts some moments of teaching rather than others. The complexity of the classroom setting with its rapid and immediate teacher-student interactions, often precludes the purposeful kind of teaching that is associated with decision making and problem solving.

Teachers' decision making behavior can be seen as being divided into three phases: (Buike, 1980)

PREACTIVE PHASE	INTERACTIVE PHASE	POSTACTIVE EVALUATIVE PHASE
Sept.-Oct.	Oct.-May	May-June
TEACHER AS THINKER TEACHER AS PLANNER TEACHER AS DECISION MAKER	TEACHER AS TECHNICIAN TEACHER AS PILOT	TEACHER AS EVALUATOR
The teaching behaviors that occur before instruction begins, how teachers think when they are preparing to teach	The thinking behavior that takes place during instruction	The thinking behavior that occurs after instruction
CATEGORIES	CATEGORIES	CATEGORIES
1. Testing decisions 2. Grouping Decisions 3. Materials Selection 4. Management Considerations and Decisions	1. Implementation of Preactive Phase	1. Evaluation of student performances and activities based on Preactive Phase Decisions

Preactive Phase

Zahorik (1975) has pointed out that in the past planning typically has been studied from a prescriptive point of view that focuses on ideal recommendations and models as opposed to how teachers in reality prepare for lessons. The preactive phase of teaching is one time when the description of the teacher as a decision maker and a problem solver may be the most accurate. Much of the research on teacher preactive decision making has assumed that teachers diagnose student learning, develop

behavioral objectives, and follow an instructional model. However, investigations in naturalistic settings have shown that few teachers use behavioral objectives or analysis while preparing for instruction. Despite the fact that a belief persists that instruction should be goal directed and that the selection of educational outcomes is important, most studies of the teacher as a decision maker have found that teachers in general do not use behavioral objectives unless specifically trained (Clark and Yinger, 1981; Marx and Peterson, 1975).

Interactive Decision Making

There are few reported studies on teacher interactive decision making--on the kinds of information and cues that teachers use in making "on the fly" decisions. During the act of teaching, a teacher is constantly assessing the situation, making decisions about what should happen next, guiding subsequent actions based on these prior decisions, and observing the effects of these actions on their students.

Studies have been conducted by both examining the "empty classroom" aspect of teaching (which includes the preparation of lesson plans, thinking about how to deal with particular behavioral or learning problems, grouping and other long term decisions) and looking at teaching in naturalistic settings ("the full classroom"). Borko, Shavelson, and Stern (1981) examined four studies of teaching in empty classrooms in order to determine how teachers make decisions while planning reading instruction. They concluded that teachers do use certain information in forming instructional groups and these groups became the basis for other long term decisions. In addition, they suggested that teachers are formulating hypotheses based on their beliefs and the information provided to them, and are selecting among alternative materials and methods using these hypotheses.

However, studies in naturalistic settings do not necessarily concur with the above findings (Duffy, 1981). Teachers working in the context of "full" or real classrooms do not appear to make their decisions in the way Borko, Shavelson, and Stern suggest. The existing findings conclude that teacher planning and decision making may be driven by conditions associated with the context of the instruction--with the context of the classroom--rather than by a process of selecting materials and methods on the basis of teacher hypotheses.

The studies suggest that teachers do not use a logical decision making model while planning. Instead, in the naturalistic setting of the classroom, teachers think of what is to be covered and the activities that will "carry" the content. There is little evidence that teachers select from alternatives. Teachers considered alternative strategies only when the lesson was considered to be "going poorly" and the primary criteria for judging how well the instructional process was proceeding were

student participation and involvement. In addition, teachers rarely changed their initial strategy even if the instruction was going poorly (Clark and Yinger, 1979; Clark and Joyce, 1975; Marx and Peterson, 1975; Clark and Peterson, 1981; Buike, 1980). The researchers concluded that teachers were not trying to optimize instruction.

Many of the teachers worked with the "recitation style of teaching" and their concerns about their students and their interactive decision making styles reflected this recitation pattern. Much of the decision making was of a "fine-tuning" nature, as opposed to reflections of alternatives that could possibly affect the instructional process. The teachers had established a materials based tutorial flow of activities. The materials selection and subsequent activity flow established the framework within which teacher decision making was carried on. Within the activity flow, the information processing behavior of the teachers represented only a "fine tuning" of the already established activities. Teachers tended to work within a general boundary or framework and merely fine-tuned that system (Joyce, 1981).

Studies of reading practices in the classroom has shed some additional light on the concept of the teacher as a decision maker. Durkin (1979) concluded that little or no comprehension instruction was occurring in the classroom, but that teachers mainly focused on "assessing" and "mentioning" comprehension. Duffy and McIntyre (1980) found similar findings in their study. In general, teachers monitored students through commercial materials and the main instructional activity observed was either checking the accuracy of student responses or the giving of reactive aid or cues to student errors. The teachers believed themselves as being responsible for "piloting" their students through the commercial materials rather than selecting from among alternatives based on hypotheses. Beyond the pacing decisions as observed by Barr (1974; 1975) there have been few on the spot instructional decisions identified (Buike, 1980). The interactive decisions that are made appear to be associated with management concerns as opposed to the instructional process. Therefore results from classroom practice studies, like those in planning research, suggest that reading instruction is materials based and governed by management concerns. On the area of the teacher as decision maker, Duffy concluded that the classroom typically is so textbook and workbook bound that it appears to demand "technical" behavior for the teacher rather than decision making, i.e., teachers do not operate as instructional decision makers.

TEACHER JUDGMENT

Teacher judgment is thought to be one of the most important cognitive processes in the mental life of a teacher. In a review of the literature on teacher judgment, Clark and Yinger (1977)

found the research addressed several issues: describing the judgmental process, including the factors that teachers take into account in reaching a judgment; investigating the accuracy of teacher judgments; and how teachers use different types of available information in making judgments and how varying the amount of information affects the judgmental process and accuracy. The findings cited were inconclusive, unclear, and at times conflicting. The studies were of such a unique nature that it was impossible to make general statements about teacher judgment.

As Clark and Yinger stated, research has not fully explored the area of teacher judgments. Recently, some researchers have been investigating the relationship between teachers' estimates of the reading ability of their students and these students' classroom behavior. Correlations between teacher predictions and actual student test scores on various reading measures have generally fallen in the low moderate range (.30 and .40). Brown and Sherbenou (1981) designed a study to see how teachers' opinions of their students' academic performances are related to the students' behavior in the classroom. Their findings indicate that academic evaluations are more closely tied to children's classroom behavior than to actual scores as measured by reading tests. They concluded that teacher evaluation, whether it is academic or behavioral, may be more closely related to subjective inputs rather than to actual performance. The inter-weaving of perceptions is an area that must be seriously considered when investigating the ability of teachers to make judgments.

Teachers' Implicit Theories, Conceptions, and Beliefs

In making selections and decisions, it has been proposed that teachers are guided by some kind of a schema, cognitive structure, belief system or conceptions that are influential in the selection of certain alternatives. Researchers are now examining how teachers conceptualize their reading instruction and how these conceptions are influential in instructional decision making. Investigations are being conducted to validate the belief that there is a relationship between a teacher's theoretical orientation to reading and to the observed classroom practices--that teachers do possess theoretical orientations, belief systems, and implicit theories that guide and organise their experiences and trigger their classroom behaviors (Harste and Burke, 1977; Pearson and Kamil, 1979; Cunningham, 1977; Brophy and Good, 1974).

However studies in naturalistic settings propose that teachers conceptualize their beliefs about reading differently in the abstract than they do in classroom practice (Bawden, Buike, and Duffy, 1979; Hoffman and Kugle, 1981). At the abstract level, teachers do possess conceptions about reading, but in the "full" classroom a teacher's conceptions are influenced and mediated by the complexities of the classroom, nature of the clientele,

demands of the materials, and need for smooth management (Duffy, 1981). The teachers' beliefs were found to be situational and related to the context of instruction (Hoffman and Kugle, 1981).

One way in which teachers may manifest their theoretical orientations is through the feedback they provide to their students during oral reading. Both teachers and students may possess theoretical orientations to reading that may be implicit in that neither the teacher nor the student are aware of its form. It has been proposed that a student's theoretical orientation is a by-product of his instructional history (Harste and Burke, 1977). A student's conception of reading will approach his teacher's orientation because of prior instructional interactions and teacher feedback. Through the analysis of student miscues and the terminating and sustaining feedback provided the students some light may be shed on the teachers' theoretical orientations as manifested in reading instruction (Hoffman, 1979).

Therefore teachers do possess conceptions but these mainly reflect the general and global problems of managing a classroom. On-going instruction is not a progression of rational decision making based on a teacher's implicit theories, but is instead activities based and materials driven. The primary goal is the maintenance of a smooth flow of activities. While teacher decision making can be based on a teacher's cognitive orientation it is much more complex and multi-dimensionsal than a simple linear progression of theory-to-practice-to-outcomes explanation.

The research on teacher thinking is still in its infancy, but researchers on teacher thinking have made a promising beginning on understanding why teachers behave as they do. There is a need to understand teacher behavior in order to use information about teaching as a basis for improving it. Research on teaching must include in its examinations of teacher behavior the "wisdom of the practitioner."

SUMMARY

The growing body of knowledge on teacher effectiveness has important implications for teacher education. Knowledge about the ecology of classrooms would facilitate communication between prospective and experienced teachers, as sometimes experienced teachers are not always able to verbalize what they know about accomplishing classroom tasks. Future teachers could be helped in the conceptualizing of teaching in ways that are congruent with classroom demands. Learning to teach is more than the acquisition of skills. Prospective teachers need experience and a schema to guide their conscious processing. Knowledge about the demands and tasks of classrooms might minimize a little of the trial and error floundering that at times dominate beginning teaching (Doyle, 1979).

Research in teacher effectiveness can aid teachers in making choices that are best suited to their objectives and the available resources. Using the findings from the teacher expectancy studies can help administrators identify "Pygmalion prone" teachers, and thus apply appropriate corrective measures. It may not be possible to tell teachers how to teach but it is possible to provide concepts and guidelines that will show teachers how to reconsider their behavior with resulting instructional improvement (Good, 1979). Even if teacher awareness is maximized and undesirable self-fulfilling prophecies are eliminated and teachers become optimally effective, there will always be the existence of individual differences. The time has come to focus on guiding teachers to achieve the possible--not exhort teachers to do the impossible (Brophy, 1976).

It has been demonstrated that it is a misconception to equate effective teaching with the mastery and use of a few general approaches. "Effective teaching involves the orchestration of a very large number of relatively limited principles linking specific stimulus situations to teaching responses that differ in probable effectiveness" (Brophy, 1976). Effective teaching involves the orchestration of many factors and the continual shifting of the teachers' behaviors to respond to the continually shifting needs of the students.

Teaching involves more than performing one set of "right" actions over and over again. Teaching is a process of allocating instructional time and assigning academic tasks in such a way that students have opportunities to learn, while experiencing a high rate of success and engagement time. Teaching is more than the "opportunity to learn" as teaching involves guided assistance to students. Teaching is a complex process and not just a series of discrete, unrelated behaviors.

Results from the research should not be viewed as providing definitive prescriptions for the exact amount of specific behaviors. The findings should be regarded as being tentative and suggestive. The results should provide a framework for thinking about teaching. Within this framework, teachers should be sensitive to the students' needs and responses. Research in teaching effectiveness should build on past findings and look for additional ways to increase teacher effectiveness. Attention should now be turned to developing a knowledge base linking specific situations to specific teacher behaviors and specific student outcomes. This will lead ultimately to not only more effective teaching but also to a more appropriate conceptualization of teaching (Brophy and Evertson, 1976).

"In the long run, the improvement of teaching--which is tantamount to the improvement of our children's lives--will come in large part from the continued search for a scientific basis for the art of teaching" (Gage, 1978).

Using the results from studies in teacher effectiveness,

hopefully a teacher will answer NO to the question

"HAVE YOU DISABLED A STUDENT TODAY?"

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