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ABSTRACT

Since the late 1960's, researchers have been concerned with the influence of teacher expectations on student performance. Teacher expectations generally can be categorized into three types: assessments of ability, predictions of progress, and natural discrepancies between teacher estimates and actual student performance. Expectations can have the effect of self-fulfilling prophecy or of sustaining expected performance levels. In a 1978 survey of the literature, 112 studies were found which investigated teacher expectations; 40 percent of those studies found significant support for the existence of teacher expectation effects. These expectations are communicated in the classroom through student and teacher interactions in the form of social emotional atmospheres, verbal input, verbal output, and feedback. In general, brighter students tend to receive more feedback and teacher interaction time than less bright students, resulting in the likelihood of sustaining expectation effects. According to the Expectation Communication Model (Cooper, 1979), teachers' expectations and the context of an interaction influence teachers' feelings of control over student performance. Teachers generally feel in control over high expectation students and over self-initiated interactions. Current research is focusing on the role of student thoughts in the communication process and the role of teachers' individual differences in expectation communication. (BL)

Historical Over-View of Teacher Expectation Effects

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This paper was presented in a symposium entitled "Adult Cognitive Functioning and the Expectancy Phenomenon" (J. Straussner, Chair) presented at the meeting of the American Psychological Association, Anaheim, California, 1988.

In 1968, Robert Rosenthal and Lenore Jacobson conducted a scientific experiment that captured the attention of the nation (Rosenthal and Jacobson, 1968). Their study, Pygmalion in the Classroom, demonstrated that the expectations teachers held for student performance influenced achievement. The fifteen years since Pygmalion have produced an enormous amount of research on how teacher expectations influence student performance. The purpose of my paper is to capsulize these findings. First, I will define different types of expectations and expectation effects. Then evidence for the existence of expectation effects will be reviewed. Next, what is known about how teacher expectations are communicated o students will be summarized. This summary will include a description of behaviors found associated with expectations and a model that describes the sequence of teaching behaviors, and student reactions that may underlie expectation effects. Finally, the most recent directions in expectation research will be examined. Definitions of Expectations and Expectation Effects.

Numerous definitions of the term "teacher expectations" have been employed in studies since Pygmalion (Cooper, in press). These definitions can be categorized into three general types, summarized in table 1.

Estimates of present ability or achievement. The first type involves the teacher's assessment of bow adequately students perform in particular achievement domains. In studies that employ this type of expectation, teachers are typically asked to describe students at present, not to make predictions about future performance. In a pure sense, these are not really expectation measures though they are frequently used in studies meant to uncover expectation effects.

Expected improvement. The second type involves a teacher' prediction about how much academic progress the student will make over a specified period of time. Cooper, Findlay and Good (1982) found that expected improvement

is only weakly correlated with the teacher's present assessment of the student is achievement.

Natural discrepancies between teachers and tests. The third type of expectation is the degree to which a teacher over or underestimates a student's present performance level. In naturalistic research, this type of expectation is measured by comparing teachers' estimates of Student ability (the first type of expectation) with standardized test scores. Of course, it is not justifiable to label the teachers' over or underestimates of standard test scores as "error" because the standard measures of student ability are not perfectly valid, they may themselves be inaccurate. The over or underestimate's, however, may product the direction of change in a student's future standard test scores. In experimental research, a discrepancy measure is created by artificially lowering or elevating the teacher's expectations. This is accomplished by providing information about students' future performances which is known to be generally false.

Self-fulfilling prophecies. Along with the several expectation definitions, there are two kinds of effects that expectations may have on student performance. The first effect is called the self-fulfilling prophecy. According to Merton (1957), a self-fulfilling prophecy occurs when "a false definition of the situation evokes a new behavior which makes the original false conception come true." inaccurate natural discrepancies and induced discrepancies between teacher beliefs and test scores are the kinds of expectations that create self-fulfilling prophecies. Teachers' beliefs about student improvement, the second kind of expectation, might also create self-fulfilling prophecies but, if the teacher has accurately estimated the student's potential, then a confirmation of this belief would not contain the "initially false" component of the definition. Perceived ability expectations can be used to study self-fulfilling prophecies because they will, by definition,

correlate highly with natural discrepancy measures.

Sustaining expectation effects. The second type of expectation effect Occurs when student performance is sustain d at preexisting level because of teacher expectations. Sustaining expectation effects, according to Cooper and Good (1983), occur when teachers respond on the basis of their existing expectations for students rather than to changes in student performance caused by sources other than the teachers" (p.17). While self-fulfilling prophecies must be preceded by inaccurate teacher expectations, sustaining expectation effects may only appear for students about whom teachers hold initially accurate ability estimates. For instance, an opportunity for better performance is missed because the teacher responds to a student based on how the student was expected to behave, rather than on other indices showing improved student potential, a sustaining expectation effect has occurred. Documenting the existence of sustaining effect is a difficult problem because it involves a prediction of "no change." The probable existence of sustaining effects can be inferred however, if teachers exhibit particular behaviors. An example will be given shortly.

The Existence of Expectation Effects.

In their 1978 review of the expectation literature, Rosenthal and Robin found 112 studies which tested the, effect in everyday situations. Nearly all these studies involved teachers and learners, though the settings varied from typical classrooms to YMCA swimming pools. Of these studies, about forty percent produced reliable statistical differences, indicating that teacher expectation effects existed. Only five percent of the studies should have produced significant statistical differences if no effects represent. More specifically, about seventy percent of the 340 teachers who participated in the at dies showed effects in the direction which their expectations would predict. By chance, only fifty percent of the teachers should have confirmed the hypothesis.

Mary Lee Smith (1980)also recently reviewed the teacher expectation literature. She categorized studies according to the kind of achievement domain the research focused on. For instance, Smith found that teacher expectations had a stronger impact on reading achievement than math achievement or the I.Q. of the student. With regard to affective variables, Smith found that students' senses of social competence were closely associated with teacher expectations, but creativity, popularity and attitudes were not.

In general, both reviews conclude the existence of expectation effects is well-established. However, what teachers need to know is bow performance expectations are communicated in class. Luckily, we have a fair idea about some answers to the "how" question. A convenient scheme for summarizing behaviors found to be associated with teacher expectations was provided by Rosenthal in 1974. Figure 1 presents Rosenthal's scheme. The summary contains four factors relating to teacher-student interactions.

First, Rosenthal found that teachers create a warmer social emotional atmosphere for brighter students. Teachers who believe they are interacting with bright students smile and nod their heads more often than teachers interacting with slow students. Teachers also lean toward and look in the eyes of smarter students more frequently. Classroom observers report that teachers are most supportive and friendly toward bright students. Thus, many nonverbal behaviors associated with positive emotional attraction are displayed most frequently by teachers toward, students believed to be bright.

Evidence also indicate that teachers' verbal inputs to students are affected by performance expectations. Students labeled as slow may receive fever opportunities to learn new material than students' labeled bright. When teachers introduce new material to their classes, it tends to be discussed with brighter students. Also, slow students have less difficult material

taught to them.

Rosenthal's third factor, verbal output, refers to (1) the number of times the student and teacher engage in academic interaction and (2) the length of time the teacher is willing to spend on each exchange. Observation of classrooms indicates that some teachers tend to stay with high expectation students longer after they have failed to answer a question. This persistence sometimes involves more clue-giving, more repetition, and more rephrasing of questions when highs answer incorrectly than when lows answer incorrectly. Teachers also pay closer attention to responses of students described as "gifted" and appear to allow bright students longer to respond before redirecting unanswered questions to other class members. In sum, teachers appear to give up more quickly on students whose past performance indicates that they will not get the right answer. The problem is, with less time to get an answer right, teachers inadvertently make success that much more difficult for slow pupils.

Among the beat researched behaviors related to performance expectations is the absolute frequency of teacher-initiated contacts. For instance, Smith (1980) calculated the average effect size reported in 8 studies of teacher expectations on the number of learning opportunities. The d-index was 1.00. This means that the average high expectation student received more learning. opportunities than 84% of the low expectation students in these studies. Relatedly, Good, Cooper, and Blakey (1980) found that teachers were more likely to call on high expectation students in public or group settings and to have private or individual interactions with slower students.

The final factor offered by Rosenthal. Feedback, involves the teachers use of academic praise and criticism. A fairly consistent pattern of results reveals that teachers tend to praise high expectation students more, while lows are criticized more. This result is based on both studies that simply

count positive and negative use of affect in classrooms and studies that adjust the frequency of praise and criticism by the number of correct and incorrect responses a student makes, thus controlling for the greater opportunity available to be positive toward highs.

Good and Brophy in 1980 also summarized the literature on teacher behavior differences toward highs and lows. Many of their conclusions are similar to Rosenthal's but some additional differences are listed. For instance, they note that teachers tend to seat low expectation students farther away from themselves and to seat lows in groups. Good and Brophy also found that feedback to lows is often less accurate and detailed than feedback to highs and the recitations of lows are more frequently interrupted.

From Different Treatment to Different Performance

For certain teaching behavior differences, how they affect student performance seems fairly straightforward. Students who are taught more difficult and novel material at a faster pace will eventually possess more information. Yet this kind of expectation effect makes sense, at least if the expectation is accurate. Presenting slow learning students the same material as that offered to faster learners would undoubtedly create more problems than it would solve.

For other teaching differences, the relation to performance also seems clear. Students given less time and help to respond will less often answer correctly. The problem is desirability. Differences in teacher persistence based on expectations, may prohibit teacher from gaining new formation, about slower students, thus, increasing the likelihood of sustaining expectation effects. Equally important, low expectation students may not get as much time or as many opportunities to integrate and vocalize their thoughts.

Finally, the remaining behavior differences, in social emotional climate initiations, and academic feedback, seem wholly undesirable and their links

to student ,performance differences are not immediately clear. To explain how these subtle instructional differences affect student achievement, an Expectation Communication Model was presented by Cooper in 1979. This model integrated the remaining behaviors into a single process culminating in expectation effects. Figure 2 present the scheme.

Briefly, the model argues that teachers' expectations and the context of an interaction influences teachers feelings of control over student performance. Control is defined by the teacher as the ability to determine an exchange's content, timing, and duration. Specifically, Cooperargued that teachers feel greater control over high than low expectation students' and over interactions that they themselves initiate or that occur in private or small group settings. The teachers' control beliefs then influence their decisions about how to use academic feedback and what social emotional climate to create for: the students. That is, teachers' may use more negative feedback with low expectation students because its use diminishes future public initiates by lows, or those interactions which give the teacher little control. Differences in feedback and climate then cause students to differ in their Beliefs concerning how important it is to try bard in academic situations. Because feedback is used more often to control lows future behavior while feedback to highs is more dependent on the outcome of the present performance, high expectation students may believe more strongly than lows that effort in class pays off. These student differences in personal efficacy beliefs may then, influence the motivation a student has to perform since highs perceive more effort-outcome in variations. Ultimately, motivation differences will create or sustain student achievement differences.

Based on the results of a large-scale study of this model, Cooper and Good in 1983, suggested several revisions. Among these were the need to make a careful delineation between theories that relate to differences in

the way teachers treat the different children in their class, or to how different teachers generally treat their classes. The Expectation Communication Model relates better to the former, or within-class process. Also, Cooper and Good suggested the model should place greater emphasis on student perception of teacher behavior. They found student beliefs about-what teachers did actually fit the model better than classroom observations.

The heightened appreciation for the role of student thoughts in the communication process is one of the emerging fields of interest within expectation research. This topic area bas very recently been summarized by Rhona Weinstein (AERA, Div. C. 1983). Among Weinstein's own findings is that in classrooms where students perceive greater differences in teacher behaviors toward highs and lows, be teacher's expectations account for more of the change in student performance over the school year.

Another area of emerging research interest is the role of teacher individual differences in expectation communication. In fact, it is surprising that it has taken this long for a critical mass of researchers to emerge who are interested in this area. While enough evidence is available to conclude that each of the relations I have mentioned is real, it is also evident that the existence of them in specific teachers cannot be assumed. Thus, the identification of Pygmalion-prone teachers is an area that is ripe for theoretical and practical advance. Today's symposium is a step in that direction.

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Table 1

Definitions of Expectations and Expectation Effects

EXPECTATIONS

Estimates of Present Ability or Achievement

Expected Improvement

Discrepancies Between Teachers and Tests

a. naturally - occuring

b. experimentally - induced

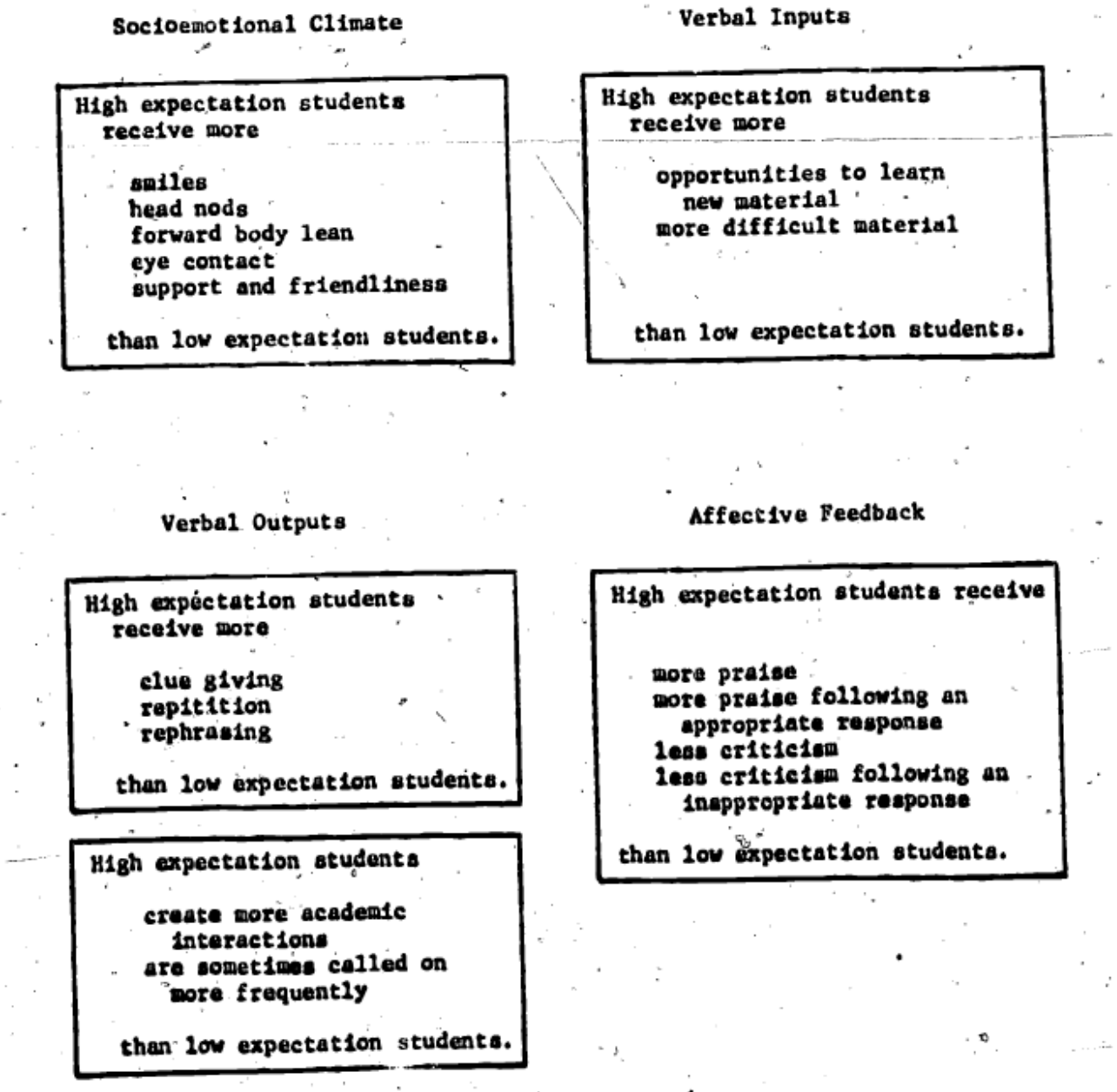
EXPECTATION EFFECTS

Self-fulfilling Prophecies

Sustaining Expectation Effects

Figure 1

Four Classroom behavior Categories Found Associated with Teacher Performance Expectations



Notes: The behavioral categories are taken from Rosenthal (1974), On the Social Psychology of the Self-fulfilling Prophecy: Further Evidence for Pygmalion Effects and Their Mediating Mechanisms. MSS Publications: New York, NY.

Figure 2

A Model for Expectation Communication and Behavior Influence