DOCUMENT RESUME

ED 171 668 SP 014 281

AUTHOR Feldman, Robert S.; Lobato-Barrera, Debra
TITLE Attitudes, Cognition, and Nonverbal Communicative Behavior.
PUB DATE Apr 79
NOTE 17p.; Paper presented at the annual meeting of the American Educational Research Association (San Francisco, California, April 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Communication; Cognitive Ability; *Educational Experiments; *Expectation; *Nonverbal Communication; *Student Attitudes; *Student Teacher Relationship; Teacher Attitudes; *Teacher Behavior

ABSTRACT

In the first of two experiments, positive and negative expectations about a teacher were induced in a student who was about to be taught by that teacher, and both verbal and nonverbal measurements were taken. Results showed that subjects responded quite directly to the experimental manipulation. In the second experiment, a student simulated some of the behavioral manifestations of positive or negative expectancies suggested by the results of the first experiment and observed the effects upon the teacher. The results here showed that the rated adequacy of performance of the subjects differed significantly according to the nonverbal behavior of their student. Previous research has shown that cognitive level and nonverbal behavior are related as well. (DS)

Attitudes, Cognition, and Nonverbal Communicative Behavior

Robert S. Feldman and Debra Lobato-Barrera

University of Massachusetts-Amherst

A paper presented as part of a symposium on "Theory and Method in Research on Teacher-Student Verbal and Nonverbal Behavior" at the annual meeting of the American Educational Research Association, San Francisco, April, 1979.

It is customary to begin presentations with the lament that although a certain topic is of great interest, there is surprisingly little controlled research in the area. The author typically goes on to describe how his or her particular study is likely to fill the void left by earlier work. Although it may at first appear that I am employing a similar strategy, in truth my perspective is somewhat different. For, when talking about nonverbal behavior, in fact there is a good deal of prior research which is quite excellent. My complaint--and of course I have one--is that earlier research just hasn't gone far enough. As a social psychologist, I am concerned that all too often the role that nonverbal behavior plays in social interaction is not taken into account. Although it is important to know that, say facial expression is related to emotions, or that an individual is capable of decoding the meaning of such behavior, I think that it is critical to conduct experiments that attempt to show not only how nonverbal behavior relates to certain internal states, but subsequently the effect that the expression of such internal states has upon a dyadic partner.

In this paper, I will report a few experiments examining some of the roles that nonverbal behavior plays within teacher-student interaction. I will be reporting the results of two sets of experiments, using different approaches, which examine how students' attitudes and cognitions may be reflected nonverbally. As you shall hear, the experiments also differ in how well they meet my desire for research which takes into account both dyadic partners.

The Student as Pygmalion

The first set of experiments that I would like to talk about examined the possibility that student expectations regarding a teacher's competence could be communicated to the teacher and bring about the expected behavior. There is a large body of research examining the phenomenon of teacher expectation effects (Brophy, 1976). For the most part, these studies have examined how the expectations that a teacher holds regarding a student's performance are transmitted and affect the subsequent actual performance of the student. The most reasonable theoretical explanation for the teacher expectation phenomenon has been that teachers, after forming an initial expectancy about a student's ability, transmit their expectation through a complex series of verbal and nonverbal cues to the student. For instance, Brophy and Good (1970) showed that students received differential praise according to their teacher's expectations, and Rothbart, Dalfen, & Barrett (1971) found that teachers gave greater attention to students labeled as bright.

Nonverbal behaviors emitted towards students labled bright or dull have also been demonstrated to differ. An experiment by Chaikin, Sigler, & Derlega (1974), for example, showed that subjects asked to tutor a so-called "bright" pupil smiled more, had more direct eye gaze, leaned closer, and nodded their heads more than subjects tutoring a "dull" pupil. Thus, teachers appear to respond differentially to students according to the expectations they hold regarding the students' ability. In turn, these

differential behaviors seem to promote student performance that is congruent with their expectations.

Although research has tended to examine teachers' expectations about their students, it is clear that students themselves can hold their own expectations about the teacher. The large body of literature on student ratings of teachers (see, for instance, reviews by Feldman, 1976, and Kulik & Kulik, 1974) attests that students have well-articulated attitudes toward their teachers. In fact, it seems likely that, even on first encounter with a new instructor, students rapidly develop expectations about the teacher. The source of these expectations may be the instructor's physical appearance, sex, race, behavioral idiosyncracies, information from siblings or friends, or even rumors. Subsequently, in much the same way as teacher expectations are transmitted to the pupil, we might expect that the student's expectations could be communicated to the teacher and, ultimately, lead to the expected behaviors.

Along with Tom Prohaska, I decided to carry out two experiments designed to examine the effects of student expectations regarding teachers. In the first experiment, we induced either positive or negative expectations about a teacher in a student who was about to be taught by that teacher. We then observed how those expectations affected the student. In the second experiment--and note that it was necessary to carry out two experiments to fully understand the phenomenon--we had a student simulate some of the behavioral manifestations of positive or

negative expectancies suggested by the results of the first experiment and observed the effects upon the teacher. We hypothesized that the expectations the student held regarding the teacher would be reflected in differential student behavior, and that such differential student behavior would affect the teacher's behavior.

Experiment I. In our first experiment, the effect of a student's expectations about a teacher's competence upon the student was examined. We reasoned that in order to eventually determine how student expectations would affect the teacher, it first would be necessary to find how such expectations would be manifested in the student.

Subjects were recruited to be in a teaching experiment, in which they were to be the student. Just prior to the participation, a confederate, who ostensibly had been in the experiment previously, informed the subject that the teacher either was quite effective or very incompetent

In the positive expectation condition, the confederate said very positive things about the teacher. He told the subject that the confederate was competent, friendly, and seemed she would be a good teacher. The responses on an evaluation form supposedly completed by the confederate about the teacher were uniformly positive.

In the negative expectation condition, the subject was told and read that the teacher was incompetent, ineffectual, and, in general, was not successful as a teacher.

In order to give subjects ample opportunity to read the written evaluations, subjects were left waiting in the hall a few minutes. The experimenter then returned and brought the subject in to meet the "teacher." The experimenter told the subject to pull up a chair (which was in a corner of the room) to the teacher, who was already seated. The experimenter then left the room. The teacher asked a few questions about the subject's background, and then taught two "lessons" to the student. While the subject was interacting with the teacher, she was secretly videotaped. The teacher taught two lessons and administered tests on the lessons.

Three basic types of dependent measures were obtained. First, subjects' attitudes toward the teacher after the lesson were obtained. Second, tests on the content of the lesson were scored. Finally, the nonverbal behavior of the subjects was examined. This last set of measures was of particular interest, since it provided information about the way that students' expectations about the teacher could be communicated to the teacher.

We had trained coders analyze the nonverbal behavior of the subjects using measures which Mehrabian (1969) subsumes under the name of "immediacy." Immediacy behaviors have been shown to correlate very highly with the degree of affect for a dyadic partner. The measures were percentage of eye contact, forward lean toward partner, directness of orientation, and interaction distance between interactants.

To initially examine the results, a multivariate t test was used to compare simultaneously the difference between the positive and negative expectation condition means on all of the individual

dependent variables. This test was significant. Hence, the experimental manipulation of student expectation appears to have had a general effect, although this varied among the various types of measures.

In terms of the attitudinal measures, there were significant differences between subjects who expected a competent teacher and subjects expecting a poor teacher for every attitudinal measure. Subjects rated the lesson as being more difficult, less interesting, and less effective when they expected a poor teacher than when they expected a good teacher. Moreover, subjects expecting a poor teacher rated the teacher as less competent, less intelligent, less liked, and less enthusiastic than subjects who had expected a good teacher. There was also a difference on one of the test scores from the experimental lesson, with subjects scoring significantly higher on the test when they expected the teacher to be good than when they expected a poor teacher.

Although perhaps of greatest interest, the results for the nonverbal behaviors were disappointing. Only one of the nonverbal measures was significant: subjects leaned forward more to "good" teachers than "poor" teachers. But there was a trend for subjects to have greater eye contact with teachers labeled good than teachers labeled poor. Additionally, a joint measure of immediacy, using beta-weights for the individual measures described by Mehrabian (1969), yielded a trend for subjects to show greater

immedicay in the positive expectation condition than the negative expectation condition.

In general, it appears that subjects responded quite directly to the experimental manipulation. Subjects expecting a good teacher held more positive attitudes about the lesson and the teacher, seemed to learn more, and acted somewhat more positively on a nonverbal level than subjects expecting a poor teacher.

These results were suggestive, and they led us to the question of whether the kind of differential responses found in this first experiment could ultimately affect the teacher. To answer this question, we conducted a conceptual extension of the findings from our first experiment. It seemed reasonable to study the effects of students' nonverbal behavior, suggested by the results of Experiment I to be related to their expectation, on the teacher.

Experiment II. In this second experiment, subjects acted as a teacher to a student (who was actually a confederate). To provide a strong test of the hypothesis, the confederate role-played a student who appeared to be unequivocally nonverbally positive or negative. In the positive nonverbal condition, the student gazed more at the teacher, sat closer, was more directly oriented and leaned closer to the teacher (subject). In the negative nonverbal condition, the student looked less, sat further away, was less directly oriented, and sat upright relative to the teacher. The dependent measures were concerned with the teachers' reaction to the positive or negative behavior of the student.

Because of time constraints, I will very briefly summarize the results of this experiment. As in the first experiment, there was a general multivariate effect across the various dependent measures we employed, showing the success of our manipulation. In terms of the specific measures, we found that subjects felt happier, warmer, and more pleased when receiving positive than negative nonverbal behavior. There was also a trend toward feeling that they had performed more competently under conditions of positive nonverbal behavior. There was no difference due to student nonverbal behavior on measures of teaching effectiveness, anger, or interest in the lesson.

There were two differences found in ratings of the student's performance made by the teachers. Students in the positive nonverbal condition were rated as being significantly more enthusiastic and being liked more than students in the negative nonverbal condition, although there were no differences found in ratings of student performance or intelligence according to condition.

We also measured the teacher's nonverbal behavior, under the assumption that it might reflect the students' nonverbal behavior. However, there was only one difference in nonverbal behavior (using Mehrabian's coding scheme) due to condition which even approached significance: There was a trend for subjects in the positive condition to orient themselves less directly toward the confederate than in the negative condition. There were no significant differences on the measures of eye contact or forward lean.

Somewhat more interestingly, we found some clear results on a measure of teacher adequacy. We had taken a 20-second sample for each subject's performance while teaching the lesson and recorded the sample on a new videotape from the original tapes of the subjects. Each sample included the subject asking the confederate the same test item and the confederate responding correctly. Two untrained judges rated each of the samples using a seven-point, Likert-type scale that asked, "What is the overall adequacy of the teacher's performance?"

The results showed that the rated adequacy of performance of the subjects differed significantly according to the nonverbal behavior of their student. Subjects in the positive condition were rated by the judges as being significantly more adequate teachers than subjects in the negative condition. Thus, as predicted, the student's nonverbal behavior seems to have been reflected in differential teacher performance.

Taken together, the results of these two experiments suggest support for the hypothesis that a student's expectation about his or her teacher could be transmitted to the teacher and bring about behavior congruent with the expectation. The two experiments suggest a cycle: if differential expectations lead to differences in nonverbal behavior (and this seems to be the case, based on the results of Experiment I), and if differential nonverbal behavior leads to differences in teacher adequacy (as was shown in Experiment II), then the initial expectation ultimately can be linked to teacher behavior congruent with the expectation.

I think that it is clear from this research that we can infer that nonverbal behavior can act as a mediator of expectations in teacher-student interactions. And note that we would not have had much confidence in this statement had only one study been carried out. I would like to turn briefly now to one example of a very different type of study, but one which has at least as important educational implications. In this particular study we were concerned with variables of a more cognitive nature, as opposed to the affective emphasis in the first studies we reported. Specifically, we were interested in how an individual's cognitive level would be reflected in his or her nonverbal communicative behavior. Because this was an initial study, we chose to use a population in which nonverbal behavior could be the primary form of communicative behavior. Rather than looking at infant populations, we decided to use a non-speaking retarded population. This permitted quite a rigorous test of our hypothesized relationship between cognitive level and nonverbal behavior: if we found it in a very heterogeneous sample of retarded persons, the relationship was likely a strong one. Moreover, the educational implications for teaching practice that could be drawn from a sample of retardates was more interesting to us than what might be derived from an infant population.

We used a sample of 40 severely and profoundly retarded male and female subjects, none of whom used more than a few

words. Each subject was tested to determine the Piagetian cognitive level at which he or she was operating using the Uzgiris and Hunt Ordinal Scales of Psychological Development. All subjects scored within one of four substages of the sensorimotor period. All subjects were then tested on a series of 20 communicative tasks. The tasks were designed to elicit nonverbal behavior which was either termed "declarative" (a communication which acted as a "comment" about a novel object) or "imperative" (a communication which functioned to obtain a desired object from an adult) towards an interviewer. The behavior of the subjects was coded into six broad categories of communicative nonverbal behavior, including direct manipulating of the adult (grasping, tugging, hitting); repetition of adult behavior; and pointing, showing, or giving an object. Note how different these kinds of behaviors are from the kind that we examined in the first studies that we described. But we felt that we needed a broader frame of reference, one that was less subtle than that employed earlier because of the exploratory nature of this study. By the way, inter-rater reliability was quite high, averaging about .90.

I will not go into detail regarding the results, which are available elsewhere (Lobato-Barrera, 1978). But to summarize, support for the hypothesized relationship between cognitive level and nonverbal behavior was clearly found.

was associated with an increase in the frequency of more complex and integrated nonverbal communicative behaviors. With more advanced sensorimotor performance there was a simultaneous increase in the individual's symbolic representational functions and in the ability to coordinate nonverbal behaviors into unified, efficient, and meaningful communicative acts. Again, however, keep in mind that the kind of nonverbal behavior studied in this experiment is on a much more gross level than that found in the first experiments. Moreover, the two sets of experiments differ on another dimension: Here we are talking about cases in which the primary means of communication is through nonverbal behavior, while in the first experiments we were concerned with more subtle, unintentional nonverbal behaviors which accompanied other forms of communication.

I wish that I were able to maintain a degree of symmetry (or at least follow my own advice) in this presentation by talking about a subsequent study to the previous one, in which we examined the effect of the subjects' nonverbal communicative behavior upon, say, a teacher. Unfortunately, we haven't yet carried out such a study. But we should. For implicit in the research that I've been describing is the notion that in order to truly understand how nonverbal behavior operates in educational settings--or any other setting, for that matter--it is necessary to examine both encoding and decoding processes. To truly describe the role that nonverbal behavior plays in social

verbal behavior is elicited, and what effect such behavior has upon an observer. Ultimately, research should examine how these effects feed back to the initial encoder. Surely this is a complicated research paradigm, but I think that it is a necessary one. And positing the necessity of such a paradigm allows me to end with the customary soporific that, obviously, more research is necessary.

Note

Portions of this paper will appear in an article in the Journal of Educational Psychology, "The Student as Pygmalion: Effect of student expectation on the teacher." We are grateful to Ronald Campana, Shirely Hutchinson, Richard Barrera, Joanne Miller, Margie Blass, and Julie Wolfe who aided in completion of the studies.

References

Braun, C. Teacher expectation: Sociopsychological dynamics. Review of Educational Research, 1976, 46, 185-213.

Brophy, J. E., & Good, T. L. Teacher's communication of differential expectations for children's classroom performance: Some behavioral data. Journal of Educational Psychology, 1970, 61, 365-374.

Chaiken, A. L., Sigler, E., & Derlega, V. Nonverbal mediators of teacher expectancy effects. Journal of Personality and Social Psychology, 1974, 30, 144-149.

Feldman, K. Grades and college students' evaluations of their courses and teachers. Research in Higher Education, 1976, 4, 69-111.

Kulik, J., & Kulik, C. Student ratings of instruction. Teaching of Psychology, 1974, 1, 51-57.

Lobato-Barrera, D. The relationship between prelinguistic communication and sensorimotor development in severely and profoundly retarded individuals. Unpublished Master's Thesis, University of Massachusetts-Amherst, 1978.

Mehrabian, A. Some referents and measures of nonverbal behavior. Behavior Research Methods and Instrumentation, 1969, 1, 203-207.

Rothbart, M., Dalfren, S., & Barrett, R. Effects of teacher's expectancy on teacher-student interaction. Journal of Educational Psychology, 1971, 62, 49-54.