DOCUMENT RESUME

ED 063 422 UD 012 374

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TITLE The Effect of Pupils' Race, Class, Test Scores, and Classroom Behavior on the Academic Expectancies of Southern and Non-Southern White Teachers.
PUB DATE Apr 72
NOTE 24p.; Paper presented at the annual meeting of the American Educational Research Association, Chicago, Ill., April 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Bias; Caucasians; *Elementary School Teachers; Northern Attitudes; Race; Racial Attitudes; Reading Tests; Social Attitudes; Social Class; Southern Attitudes; Student Behavior; *Student Characteristics; *Student Teacher Relationship; *Teacher Attitudes; *Teacher Influence

ABSTRACT

This investigation of the causal dynamics of teacher expectancies is carried out in an artificial setting, making use of contrived stimulus children. Characteristics of stimulus persons were varied in a 2 by 2 factorial design. Pupil characteristics included race (black or white) and class (lower or middle). Different groups of subjects rated each cell of the design. It was hypothesized that high test scores and active and attentive classroom behavior would be associated with higher expectancies in teachers. It was also hypothesized that the results of an earlier study would be replicated, viz. that teachers' ratings of certain behaviors which could be classified as "activity" and as "attentiveness" would predict academic success. The complete design thus amounted to a 3 by 25 factorial, with scores, activity and attention of the stimulus children as repeated measures. Subjects were 120 white elementary school teachers of both sexes attending summer schools. All had taught at least two years. Half of the teachers had been born and always lived in the South; the other half had lived in at least one non-Southern state. Subjects used a five-point scale to assess the probability that children who had just entered school would be reading at grade level by the beginning of grade two. (Author/JM)

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The Effects of Pupils' Race, Class, Test Scores, and Classroom Behavior on the Academic Expectancies of Southern and Non-Southern White Teachers

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The expectations of teachers in relation to pupil achievement have recently enjoyed considerable attention, partly because it has been thought (Becker, 1952; Wilson, 1963; Clark, 1965) that one possible underlying cause of the lower academic performance of slum children is that their teachers do not expect them to achieve. One line of research (Brophy & Good, 1970; Heapy & Siess, 1970) suggests that teachers treat children differently in accordance with their expectations for them. In the Brophy and Good study, for example, teachers demanded better performance and were more likely to praise it when dealing with children from whom they had expected more.

Another research effort has involved field experiments which tested the hypothesis that raising teachers' expectancies for a random selection of pupils would raise their academic performance or IQ's. The results of these studies have been largely negative. While Rosenthal and Jacobson (1968) found teachers' favorable expectancies responsible for gains in pupils' IQ's, their study has been severely criticized (Snow, 1969; Thorndike, 1968, 1969) on the basis of its measurement and statistical analyses. Because of these weaknesses, one cannot credit the conclusions.

Similarly, studies of like design, completed before the Rosenthal and Jacobson effort (Pitt, 1956; Flowers, 1966) and after (Haberman, 1970; Flemming & Antonen, 1970) reported negative results. Jacobs and Richard (1970) also found no effects upon either "academic" or "social" acceptance after designating a random selection of pupils to their teachers as "potential leaders in the classroom".

One possible reason for these sterile outcomes is that the basic experimental manipulation--artificially changing teachers' expectancies--may not be effective. Snow (1969), for example, pointed out that in the Rosenthal and Jacobson study teachers could not remember which pupils were supposed to be "bloomers". In addition, one may question why teachers should place greater credance upon an experimenter's report of test scores or other false information than upon other evidence available to them in their daily work in the classroom.

It seems reasonable to assume that teachers' expectancies have multiple determinants. As Gibson (1965) among others has suggested, test scores may indeed affect expectancies. Likewise, since white middle-class children generally out-perform those less advantaged (see Coleman et al, 1966), it is reasonable to believe that teachers expect more of them. This idea is supported by Guskin's (1970) findings that the expectancies of student teachers were lower for a child presented (through tape recording) with black dialect than one speaking identical material in standard English. In addition, the classroom behavior of a child would certainly seem likely to affect teachers' expectancies. In a recent study (Johnson, Baldwin, & Wiley, 1969) examples of arithmetic problems (supposedly worked by a pupil), IQ's, and background information were presented to teachers, as a basis for predicting pupil achievement. Findings here suggested that class room behavior outweighs other kinds of information.

If teachers' expectancies are potentially important as determinants of pupils' performances, and if they have multiple determinants, then it would seem that an assessment of these variables is needed. Moreover, such a study would seem a necessary first step in relation to this problem, preceeding attempts to manipulate expectancies. In an everyday classroom situation,

a teacher is ordinarily aware of numerous characteristics of each pupil. It would be difficult if not impossible to determine on a post hoc basis, however, which kind or kinds of information had affected expectancies, because one could not vary one kind of information while holding other kinds constant.

Thus, an investigation of the causal dynamics of teacher expectancies would seem best carried out in an artificial setting, making use of contrived stimulus children. Such is the design of this study. As in earlier studies related to interpersonal distance (Triandis & Triandis, 1960; Triandis & Davis, 1965; Long, Ziller, Thompson, 1966, for example) characteristics of the stimulus persons were varied in a factoral design. This method permitted a separate assessment of the effects of several characteristics as well as an appraisal of their relative strengths and their interactions.

Pupil characteristics selected for study included race (black or white) and class (lower or middle). It was thought that teachers, aware of the well-known differential between blacks and whites and between lower and middle class children, so far as school achievement is concerned, would expect more of white and middle class children. Because such comparisons, however, seemed too obvious a task for teachers, it was decided to have different groups of subjects rate each cell of this 2 x 2 design.

Since racial bias might be stronger among white teachers whose experiences had been confined to the South, subjects were selected of both Southern and non-Southern background, and this dichotomy provided an additional variable in the study.

Finally, it was one of our central concerns to assess the effects of test scores upon teachers' expectancies and to compare them with certain aspects of classroom behavior. Since it was decided to place the hypothetical children in the first grade, readiness test scores (high, average, or low), activity

(active or passive), and attention (attentive or not) were selected as three additional pupil characteristics to be studied. It was hypothesized that high scores and active and attentive behavior would be associated with higher expectancies in teachers. The effects of test scores were predicted on the premise that teachers would have a certain amount of faith in the validity of the tests, even though they might not credit them with perfect predictive power, especially among the disadvantaged. The two behavioral predictions are derived partially from an earlier study (Long & Henderson, 1971) which showed that for both black and white first graders, teachers' ratings of certain behaviors which could be classified as "activity" and as "attentiveness" predicted academic success. The complete design of the study thus amounted to a 3×2^5 factoral, with scores, activity and attention of the stimulus children as repeated measures.

Method

Subjects were 120 white elementary school teachers of both sexes attending summer school. All had taught at least two years; median number of years of teaching was 5.2. Half of the teachers had been born and always lived in the South; the other half had lived in at least one non-Southern state. These two groups provided one variable in the design of the study, and are designated the Southern and non-Southern teachers.

Subjects used a five-point scale (definitely yes, probably yes, possibly, probably no, definitely no) to assess the probability that children who had just entered school would be reading at grade level by the beginning of grade two. The children, all male, and all designated by first name, varied in readiness test scores (high, average, low), activity (active, passive) and attention (attentive, non-attentive). These three variables were combined into a factoral design (3 x 2 x 2) to provide 12 children. Each level of each

variable appeared in the first, second, and third position in the short paragraph describing each child an equal number of times. All subjects rated all 12 children in a single random order. The descriptions of the children are shown in Table 1.

Insert Table 1 about here

Four forms of the descriptions were randomly distributed among both the Southern and non-Southern teachers, with each teacher rating the children on just one form. These forms comprised a 2 x 2 design in which race (white, black) and class (middle, low) were varied. A subject thus rated the 12 children for one combination of background factors (e.g. black, middle class), and no single subject made racial or class comparisons.

Results

Data were analysed by computer with a 3×2^5 analysis of variance of the type for repeated measures. Significant effects at the .05 level or better were found for (1) score, (2) activity, and (3) attention, and for the following interactions: (1) score by activity, (2) score by attention, (3) score by race by teacher background, (4) activity by race by teacher background, (5) race by class by activity, and (6) score by activity by attention. F ratios, degrees of freedom, probability levels, and intraclass correlations for each significant effect are shown in Table 2. No significant effects were found for race, class, or teacher background per se.

Insert Table 2 about here

Means relevant to the significant effects are shown in Tables 3 through 8. In all cases involving more than two means, Tukey's had test was used to

assess differences. A summary of these findings follows.

Insert Tables 3 - 8 about here

Main effects.

Readiness scores affected teacher's ratings in a relatively straightforward way (F for the linear trend = 1320.3; F for the quadratic trend = .9), and scores, as compared to all other variables and interactions, appeared to have produced the strongest effect on the ratings.

Active as opposed to passive, and attentive as opposed to non-attentive children were also rated higher, with the effect for attention somewhat stronger than that for activity (see Tables 3 and 4).

First order interactions.

The score by activity interaction seems due to a stronger effect for activity among the medium and low scorers than among the high scorers. In contrast, the score by attention interaction appears attributible to a stronger effect for attention among high and medium scorers than among low scorers (Tables 3 and 4).

Second order interactions.

Score by race by teacher background. This effect appears due to an interaction between race and teacher background for low scorers. Non-Southern teachers rated low-scoring blacks significantly higher than low-scoring whites, and higher than the rating of low-scoring blacks by Southern teachers (Table 5).

Race by activity by teacher background. This effect seems attributible to an interaction between race and activity among the Southern teachers, who rated passive blacks higher than passive whites, but active blacks lower than active whites (Table 6).

Race by class by activity. This effect seems due to an interaction between race and class for passive children. White middle-class passive children were rated significantly lower than black middle-class passives; no racial difference was found among the lower-class passive children (Table 7).

Score by activity by attention. This interaction is difficult to interpret but seems to be mainly due to an interaction between activity and attention among low scorers which was not found for the medium and high scorers. Among the low scorers, activity had a stronger effect among those low in attention, and attention had a stronger effect among those low in activity.

Discussion

Teachers agreed that active, attentive children who scored high on readiness tests would learn to read in first grade, no matter what their background. These main effects were in the expected direction. They tend to support the validity of the ratings, and to suggest that subjects took the experimental task seriously. The relative strength of the effects for test scores implies that teachers attribute to them at least a rough predictive validity. This general acceptance occurred in spite of the fact that these were readiness tests, where evidence of reliability and validity is decidedly weaker than is the case for tests of ability and achievement for older children.

As may be seen in Table 8, however, the acceptance of scores is strongly tempered by the classroom behavior of the child. Passive, inattentive high scorers, for example, are given a mean score of 3.22, indicating a rather strong reservation of judgment.

The lack of significant main effects for race and class and for the race by teacher background interaction suggests that race and class biases are not as simple and blatant as some critics believe. It is possible, however, that ratings of hypothetical children made in a university setting would be

influenced by values antithetical to prejudice. Mean ratings of the non-Southerners for blacks (3.38) were somewhat higher than for whites (3.26) and somewhat higher than the ratings of blacks (3.21) or whites (3.24) by Southerners. These differences, however, were not significant (race by teacher backgroung interaction, p = .45). Since this interaction derived from between subjects comparisons, however, it was subjected to a much less powerful test than was the case for all repeated measures. Thus, conclusions from these data about a dearth of race and class biases might be a Type II error, since the sample was limited in size and the experimental conditions were removed from the classroom.

The significant interactions found in this study were in certain cases hard to interpret. The two first-order interactions, however, both involve classroom behavior and scores, and can be interpreted in rather specific terms. Teachers apparently have a greater faith in a passive high-scorer, relative to an active high-scorer, than is the case among the low scorers (see Table 3). On the other hand, an inattentive high-scorer is rated relatively lower than an attentive, as compared to low scorers (Table 4). The score by activity by attention interaction indicates quite clearly that for high and middle scorers, the passive, attentive child is awarded significantly greater potential success than the active, inattentive (Table 3). For low scorers this relation does not hold--the passive attentive child is rated as low (2.56) as the active inattentive (2.63), with the passive, inattentive significantly lower (1.88) and the active, attentive significantly higher (3.02).

From these findings one can conclude that classroom behavior interacts with test scores in its effects upon teacher expectancies. Studies which artificially manipulate test scores of pupils in field studies in an attempt to influence teacher expectancies without controls for classroom behavior do not thus seem likely to succeed and are perhaps proceeding on the basis of

an over-simplified model.

In the present study, the interactions which seem of greatest interest are those involving race or class, particularly in relation to teacher background. The race by score by background interaction (Table 5) derives from differences between Southern and non-Southern teachers in respect to low scorers, with non-Southerners rating blacks significantly higher than whites and significantly higher than the Southerners ratings of blacks. Southerners did not differ significantly in their rating of black and white low scorers, although the whites were rated somewhat higher than the blacks. Thus, the interaction derives chiefly from the positive bias of the non-Southerners for the blacks.

One may speculate that this attitude stems from exposure to the idea that standardized tests are unfair or less predictive for blacks. This bias appears to be similar to that found by Halven, Hofmann, and Dierbryer (1969) among a sample of clinical and school psychologists. These subjects estimated "effective intelligence" from hypothetical WISC scores for children varying in race. Findings showed that for the same WISC scores black children received significantly higher ratings than did whites.

If readiness tests are less effective with blacks (see Henderson & Long, 1970), then the non-Southerners' higher expectancies of low-scoring blacks may be accurate. On the other hand, if tests work just as well for blacks as whites, higher expectancies for blacks with low scores can only produce frustrations and disappointments when the low-scoring black child fails to live up to over-inflated expectancies.

The race by class by activity and race by teacher background by activity interactions are similar in that both stem from what appears to be a bias against the white, passive child--by Southern teachers in the one case (this may also be interpreted as a bias against active blacks) and among the middle-

class children in the other. In other words, the dampening (or depressing) effects of passivity on teachers' expectancies is greater for white children. For the effect found among Southerners, it appears that traditional stereotyped ideas which suggest that a "good" black child is passive, and that leadership roles (and hence greater activity) should be confined to whites may be influencial. In the case of the class by race by activity interaction, again a leadership role involving greater activity seems to be expected of white middle-class children.

In both of the foregoing cases, however, teachers may be giving tacit recognition to differences in child-rearing patterns among different race or class groups. As interpreted by Kohn (1963), for example, middle-class parents tend to place less emphasis on obedience and more on self-direction and control. In the black culture, as well as in the lower classes, child-rearing methods may be more authoritarian. Johnson and Simons (1972), for example, suggest that the adult-child relationship among blacks is not an egalitarian one. Thus, more passive behavior among blacks and lower class children may reflect a good adjustment to what their parents expect of them. The teachers, in their relatively benign acceptance of this passive behavior (as indicated by their not allowing passivity to lower expectancies as it does with white or white middle-class children), may be recognizing this good adjustment and associating it with academic success.

These findings, as well as those discussed earlier, lead one to conclude that the determinants of teachers' expectancies are indeed complex. It is evident that they are affected by a number of different kinds of information, some of which have different effects on teachers of different background. Test scores appear to have a strong effect on expectancies, but they interact with background factors and classroom behavior. Traditional as well as more

recent stereotyped ideas in relation to race or class, or, alternatively, realistic conceptions of race or class differences in child rearing, also seem to play a part. These effects are not simple, however, but involve interactions of race and class with behavior.

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TABLE 1

The Twelve Stimulus Children rated by Teachers

1. Bob: Bob is an active child who explores experiences eagerly and enters into discussions. He listens well and usually follows directions. His readiness scores are above average.
2. Ed: Ed is a quiet child and tends to be somewhat passive. He often sits and watches the other children play. His readiness scores are above average. He does not follow directions too well--does not seem to pay attention.
3. Joe: Joe talks very little and does not play with the others. He is quiet and shy. His readiness scores are below average. He usually follows directions and does as he is told.
4. Bill: Bill does as he is told. He listens and follows directions. His readiness scores are just average. His is a shy, somewhat passive, quiet child.
5. Dick: Although Dick is a busy person, always on the go, he listens and does as he is told. His readiness scores are below average.
6. Dave: Dave's readiness scores are average. He does not follow directions well and needs frequent reminding about what to do. He tends to be somewhat lethargic, talks very little and does not play.
7. Tom: Tom's scores for readiness are above average. He does not seem to listen or pay attention, and as a consequence, follows directions poorly. He is an active, busy person, who talks a lot and explores new things eagerly.
8. Ralph: Ralph needs constant reminding to complete a task. He is quiet child who seldom talks or plays with others. His readiness scores are below average.

TABLE 1 (Continued)

9. Fred: Fred minds well--he listens and does as he is told. He talks a lot and enters into discussions readily. On the whole he is an active exploring type of child. His readiness scores are just average.

10. Charles: Charles's readiness scores are below average. He is an active child who is interested in new experiences and enters discussions eagerly. He does not follow directions too well--he does not seem to listen.

11. John: John does not attend well and has to have directions repeated frequently. His readiness scores are just average. He is an active child who participates in everything. He talks a lot and enters discussions eagerly.

12. Jim: Jim's readiness scores are above average. He is a silent child and tends to watch others rather than participate. He listens when spoken to and follows directions well.

TABLE 2

F Ratios, Probability Levels, and Intraclass Correlations for all significant Main Effects and Interactions

Effects	F	df	p	r
Score	688.07	2/224	.0001	.59
Activity	290.26	1/112	.0001	.29
Attention	597.96	1/112	.0001	.45
Score by Activity	4.69	2/224	.01	.02
Score by Attention	56.16	2/224	.0001	.19
Score by race by Teacher Background	5.38	2/224	.005	.03
Activity by race by Teacher Background	3.84	1/112	.05	.02
Race by Class by Activity	5.46	1/112	.02	.02
Score by Activity by Attention	10.49	2/224	.0001	.08

TABLE 3

Means and tests of significance for Scores, Activity, and the Score by Activity Interaction[1]

Scores	Activity		
	High	Low	Both
High	4.28	3.78	4.03
Average	3.60	2.90 A	3.25
Low	2.85 A	2.22	2.53
Combined	3.58	2.97	3.27

1. Means followed by the same letter are not significantly different from each other according to the Tukey test. Significant effects are as follows:

   (a) score: $F = 688.1$; $df = 2/224$; $p = .0001$.

   (b) activity: $F = 290.3$; $df = 1/112$; $p = .0001$.

   (c) score by activity interaction: $F = 4.7$; $df = 2/224$; $p = .05$.

TABLE 4

Means and tests of significance for Scores, Attention, and the Score by Attention Interaction[1]

Scores	Attention		
	High	Low	Both
High	4.63	3.44	4.03
Average	3.87	2.63 A	3.25
Low	2.79 A	2.28	2.53
Combined	3.76	2.78	3.27

1. For the effect for scores and for the score by attention interaction, all means are significantly different from each other by the Tukey test. Significance tests are as follows:

   (a) score: $F = 688.1$; $df = 2/224$; $p = .001$.

   (b) attention: $F = 598.0$; $df = 1/112$; $p = .0001$.

   (c) score by attention interaction: $F = 56.2$; $df = 2/224$; $p = .0001$.

TABLE 5

Means and tests of significance for the Score by Race by Teacher Background interaction[1]

Scores	Teacher Background			
	Southern		Non-Southern	
	Black	White	Black	White
High	4.04 A	3.95 A	4.03 A	4.11 A
Average	3.19 B	3.20 B	3.35 B	3.26 B
Low	2.44 D	2.56 CD	2.76 C	2.42 D

1. Means followed by the same letter are not significantly different from each other by Tukey's test. Test of significance for score by race by teacher background interaction: $F = 5.4$; $df = 2/224$; $p = .005$.

TABLE 6

Means and test of significance for the Race by Activity by Teacher Background Interaction[1]

Activity	Teacher Background			
	Southern		Non-Southern	
	Black	White	Black	White
High	3.46 A	3.62 A	3.66 A	3.57 A
Low	2.96 BC	2.86 C	3.10 B	2.96 BC

1. Means followed by the same letter are not significantly different from each other according to Tukey's test. Test of significance for the activity by race by teacher background interaction: F = 3.8; df = 1/112; p = .05.

TABLE 7

Means and test of significance for the Race by Class by Activity interaction[1]

Activity	Class			
	Low		Middle	
	Black	White	Black	White
High	3.61 A	3.62 A	3.52 A	3.56 A
Low	2.99 BC	2.98 BC	3.07 B	2.83 C

1. Means followed by the same letter are not significantly different from each other by the Tukey test. Test of significance for the race by class by activity interaction: $F = 5.5$; $df = 1/112$; $p = .02$.

TABLE 8

Means and test of significance for the Score by Activity by Attention interaction[1]

	Attention			
	High		Low	
Activity	High	Low	High	Low
Score				
High	4.90	4.35	3.67 A	3.22 B
Average	4.23	3.52 A	2.97 C	2.29
Low	3.02 BC	2.56 D	2.68 D	1.88

1. Means followed by the same letter are not significantly different from each other according to Tukey's test. Test of significance for the score by activity by attention interaction: F = 10.5; df = 2/224; p = .0001.