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Teachers' Verbal and Nonverbal Communication Patterns as a Function of Teacher Race, Student Gender, and Student Race

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Teachers' verbal and nonverbal behaviors were examined in the natural classroom setting to assess differences based on sex of child, race of child, and race of teacher. The subjects were 16 (8 black and 8 white) female first grade teachers in an urban public elementary school system. All teachers' classrooms contained students of both races with at least a 1 to 3 ratio of one race to the other. Trained observers recorded verbal and nonverbal behavior for each instance of teacher behavior directed toward individual children in each classroom. The results indicated that white teachers directed more verbal praise and criticism and nonverbal praise toward males and more nonverbal criticism toward black males.

The classroom is a natural setting for observing how teachers interact with students. Teachers are in an influential position with respect to students and can communicate significant messages concerning expectations, evaluations, and performance. Their verbal and nonverbal behaviors are part of the interaction pattern that can affect students and their behaviors.

Research has begun to examine the relationship between teacher and student behavior. A number of studies have found that teachers' verbal praise improves student behavior (Hughes, 1973; O'Leary & O'Leary, 1972; Rosenshine, 1976). Stallings and Kashowitz (1975) found criticism to be positively correlated with performance, whereas others have found negative correlations between teacher criticism and student performance (Brophy & Evertson, 1974; Rosenshine, 1976). The nonverbal behavior of teachers, such as facial expressions, voice tone, and gestures, also can convey approval and disapproval, which strengthen or weaken responses, but these nonverbal influences often are overlooked (Keith, Tornatzky, & Pettigrew, 1974). The

influence of these behaviors has only recently been examined. Woolfolk and Woolfolk (1974) demonstrated that children correctly perceived both the verbal and nonverbal communications of their teachers. A more recent study by Woolfolk (1978) indicated that teachers' positive verbal behavior with negative nonverbal behavior may be the most effective combination for influencing student performance. However, there are limits to the generalizability of the research results due to the analogue nature of the study and the limited sample of white, middle-class students.

Demographic data also need to be examined with respect to teacher-student interaction patterns because a number of studies have shown that variables such as sex of the child, race of the child, race of the teacher, and socioeconomic status of the child have been correlated with differences in teachers' verbal and nonverbal behaviors. Studies examining the sex variable have indicated some differences in the verbal behavior of teachers with males and females. Good, Sikes, and Brophy (1973) and Meyer and Thompson (1956) found that boys received more approving and disapproving comments from teachers than did girls. It was also suggested that sex differences in teacher-student interaction patterns may be a result of the differential behavior that boys and girls exhibit, particularly since boys were found to be more active and to interact more with teachers (Good et al., 1973). Davis (1967) also found that boys received more disapproving comments in the classroom, but the study did not show any significant sex differences in the amount of verbal praise received from the teacher.

Race is a factor that needs to be considered because there are a number of studies showing differences in the behavior of whites toward blacks. Weitz (1972), for example, has suggested that there may be conflicting cues in some interracial situations. Her study showed that subtle signs of rejection of blacks were revealed by voice tone, even though favorable verbal statements were being made. Word, Zanna, and Cooper (1974) studied other nonverbal mediators of attitudes and expectations, and in their experiments black applicants interviewed by white interviewers received more distant nonverbal behaviors which, according to Mehrabian (1972), hinders closeness to and interaction with others.

In the studies with children, differences have been found with respect to teacher ratings and expectations. Eaves (1975), for example, found that white teachers rated black male children as more deviant and white male children as less deviant. The ratings of black teachers were not found to vary with student race. Coates (1972) also showed that white teachers rated black male children more negatively on a personality trait scale. One study by Rubovits and Maehr (1973), manipulating an expectancy variable in its investigation of the behavior of white teachers toward white and black students, demonstrated that black students received significantly less attention and praise than did white students. The "bright" white students received the most

attention and praise, while the "bright" black students received the least. Another study (Hillman & Davenport, 1978), involving actual classroom observation with black and white teachers, found that black students and male students received a greater proportion of classroom interactions than white students or females. However, this greater amount of interaction for black students was in categories such as receiving more criticism from teachers, receiving more nonacceptance of a student's question or response, and receiving more specific, focused behavior-controlling questions from teachers.

Studies examining the reinforcement patterns of black and white teachers are scanty, but several have shown differential reinforcement patterns for black and white teachers with black and white students. Brown, Payne, Lankewich, and Cornell (1970) found that teachers gave more praise and less criticism to students of the opposite race. The research of Byalick and Bersoff (1974) also found that teachers reinforced opposite race children more frequently than children of their own race. Female teachers of both races verbally reinforced opposite race boys the most; boys of both races were the most frequently reinforced group. Interesting differences in touching behavior also were revealed; white teachers touched white children with greater relative frequency than black children, and black teachers touched black children with greater frequency. Feldman and Donohoe (1978) also obtained results indicating that both black and white teachers were nonverbally more positive in their behavior to students of their own race.

The research results with race as a factor are not all consistent; several studies suggest more negative interactions between white teachers and black students, and at least two studies suggest more positive interactions between white and black teachers and their opposite race students. It is possible that in the Brown et al. study (1970), the Byalick and Bersoff study (1974), and even the Hillman and Davenport (1978) study, the teachers were trying to overcompensate in their interactional behavior with opposite race children. The Hillman and Davenport research, however, also suggests that although teachers may be trying to make the patterns appear equal, the categories of interaction were not necessarily positive and perhaps more oriented toward controlling behavior. The three studies also entailed large group as opposed to small group or individual interactions, which supports the overcompensation idea. The other studies with less positive behavior of white teachers toward black students involved student ratings, one-to-one, or small group interactions and were more experimentally controlled situations. Naturalistic observational studies in the classroom may show overcompensatory verbal behavior on the part of black and white teachers. However, the nonverbal behaviors may indicate a natural preference or comfortableness with students of one's own race as suggested by the results of the Feldman and Donohoe (1978) and Byalick and Bersoff studies.

Research also has indicated that social class can be a significant variable that influences teacher behavior (Friedman, 1976; Heller & White, 1975). Cooper, Baron, and Lowe (1975) and Bennett (1976) found support for both race and social class information influencing the expectations of teachers. A study by Miller (1973) showed that social class, but not race, affected teacher expectation. However, the latter study involved teacher expectations based on descriptive stories of black and white working and middle-class boys but no direct interactions. Given that race and social class can both be influential variables, future studies involving race as a variable should attempt to control for socioeconomic status.

The present study examines female teachers' verbal and nonverbal behaviors in the natural environment of first-grade classrooms as a function of the race of the teachers and the sex and race of the students while controlling for the students' socioeconomic status. Previous findings suggest that black and white teachers will be more positive in their verbal behavior toward opposite race students and that they may be more positive in their nonverbal behavior toward the same race students with classroom observational studies. In addition, the study looks at the verbal and nonverbal behavior of black and white teachers toward male and female students because little has been done to examine both behaviors taking into account the sex-of-student variable along with the race-of-student variable. The study can be added to those concerned with the differential behavior of teachers toward students differing on characteristics such as sex and race. It is relevant to understanding teacher behavior in the growing number of integrated school settings.

METHOD

Subjects

Subjects were 16 female first-grade teachers in an urban public school system. Eight teachers were black, and eight were white. The 16 classrooms ranged from 50 to 75 percent black. Teachers' participation in the study was voluntary. Teachers were not informed about the purposes of the study during the data collection phase but were carefully debriefed during a personal visit after the data were collected. The data collected on teachers and pupils were kept anonymous.

Observers

Six undergraduate psychology majors, three males and three females, served as observers for the study. Four were primary observers, and two were alternates. They were trained to a .85 interobserver agreement with the principal investigator's ratings as the criterion. They were not informed about the specific purposes of the study until after the data were collected.

Experimental Design

Data were collected for the verbal and nonverbal behavior of each teacher in her interactions with individual students. There were two levels of the teacher race category, black and white; two levels of student race, black and white; and two levels of student sex, male and female. A 2 (teacher race) \times 2 (student race) \times 2 (student sex) analysis of variance was performed on each of the separate and combined categories of verbal and nonverbal behavior. The within-group variable was teacher race, and the between-group variables were student sex and student race. In addition, an analysis of covariance using the socioeconomic level of each group of students as the covariate, that is, black males, black females, white males, and white females, was also performed.

Measures

Observers were listening for teacher verbal behavior directed toward an individual child. Each instance of verbal behavior, a teacher utterance directed toward an individual child, and the nonverbal behavior that accompanied or followed it was classified as one of the following (the first three are verbal, and the last three are nonverbal):

1. Verbal praise/encouragement, attention to or elaboration of work, ideas, and personal/social behavior included comments that convey acknowledgement, agreement with, or identity with a child's statement or behavior such as "yeah," "right," "fine," "correct," "great," "you're on the right track," "I really like your work," or repetition of the correct answer the child had given.
2. Verbal criticism or rejection of work, ideas, and personal/social behavior included reprimands or comments that express disapproval or negation such as "no," "not quite," "that's wrong," "you could do better," "don't you know," "would you not do this." It also included comments that indicated that the child should be doing something else.
3. Verbally neutral behavior included any instructional or social behavior statement that does not fit into one of the above verbal categories.
4. Nonverbal praise, acceptance, attention to work, ideas, and personal/social behavior included vocal pleasantness such as modulated tone, even tempo and rhythm, facial expressions of pleasantness such as smiles, gestures of acceptance and of attending such as head nods.
5. Nonverbal criticism or rejection of work, ideas, and personal/social behaviors included vocal sarcasm, anger or annoyance (high pitch, loud, clipped, or curt enunciation, blaring timbre), and negative facial expression such as frowns, glares, sneers, raised eyebrows; gestures of negation such as head shakes, repeated pointing of finger away from student when he/she approached; and leaning away from student in an interaction.

6. Nonverbally neutral behavior for the purposes of this study is nonverbal behavior that cannot be classified in one of the above categories.

There was a total of 15 dependent measures that included the separate and all possible combinations of verbal and nonverbal behavior. These included the following: verbal praise, verbal criticism, verbal neutral; nonverbal praise, nonverbal criticism, nonverbal neutral; verbal praise and nonverbal praise, verbal praise and nonverbal criticism, verbal praise and nonverbal neutral; verbal criticism and nonverbal praise, verbal criticism and nonverbal criticism, verbal criticism and nonverbal neutral; verbal neutral and nonverbal praise, verbal neutral and nonverbal criticism, verbal neutral and nonverbal neutral.

Procedure

Prior to data collection, the observers received 10 hours of training in recording verbal and nonverbal behavior of teachers. Pairs of observers were then assigned to each classroom. All observations were made in the mornings, while classes focused on reading activities. A practice session of at least 15 minutes was conducted in each classroom to acclimate the observers to the teacher and classroom. Most of the 16 classrooms were observed for a total of 4 hours and the rest for 3 hours due to scheduling problems. In each class, a male and female observer were paired and randomly assigned to a classroom in which they observed for 3 or 4 mornings for 1 hour each. Behavior was recorded each time a teacher made a verbal utterance directed toward an individual child.

Each teacher submitted the parent occupation of each child after observations were made. No personal identity of students was required. The information supplied the total number of children, the number of males and females, the number of black and white students, and the parent occupations associated with the sex and race of each child. Socioeconomic status for each student in each race and sex category was assigned a level using the seven levels of the Hollingshead and Redlich (1958) occupational scale. Averages were then computed for each sex and race category in each classroom, because observations were made according to the sex and race of students in each classroom and not according to individuals. This information was then used to convert the data in the analysis of covariance to equate for the socioeconomic status of students in each race and sex category within each classroom. Socioeconomic status was subsequently used as the covariate in the analyses of covariance.¹

¹ In half the classrooms white and black students were from equivalent socioeconomic backgrounds. In the other eight classrooms white males and white females were on the average from a higher socioeconomic background than black males and black females.

RESULTS

Interobserver Agreement

Interobserver reliability was calculated for each of the verbal and nonverbal variables across all observations for the 16 classrooms. Interobserver agreement was determined by computing a reliability percentage (smaller frequency divided by larger frequency) for each classroom observation and then averaging the percentages. The following agreement percentages were obtained: verbal praise, 84 percent; verbal criticism, 74 percent; verbal neutral, 91 percent; nonverbal praise, 76 percent; nonverbal criticism, 73 percent and nonverbal neutral, 91 percent.

Statistical Analyses

Raw scores for each category of student sex and race were transformed into scores based on that group's representation within each classroom, using the following formula:

$$\frac{\text{Total number interactions for variable in a given student sex-race category}}{\text{Total number interactions for variable}} \times \frac{\text{Total number students in class}}{\text{Total number students in sex-race category}}$$

Table I presents the means and standard deviations for the separate and combined verbal and nonverbal behaviors for each student race and sex category within each teacher race category.² An analysis of variance was performed for each of the 13 dependent variables. The analyses yielded significant differences for 10 of the 13 measures. Post hoc analyses using the Tukey test (Winer, 1971) were performed for all variables that yielded significant analyses of variance.

An analysis of covariance using data for the socioeconomic level of each group of students was also performed for each of the 13 dependent variables. The analyses yielded significant differences for 9 of the 13 measures. Table II compares the significance levels of analyses of covariance for the variables significant with analysis of variance. Thirteen of the original 18 effects remained significant at the .05 level.

Verbal praise. An analysis of variance on verbal praise yielded a main effect for student race ($F = 5.01$, $df = 1, 13$, $p < .04$) with black students receiving more verbal praise than white students. The two-way interaction

² Two variables, verbal praise with nonverbal criticism and verbal criticism with nonverbal praise, were not analyzed because their frequency of occurrence was too low, that is, a total of each of these behaviors across 16 classrooms divided by the 16 classrooms did not yield an average of 1.00. The means were .075 and .38, respectively.

TABLE I

Variable	Black Teachers						White Teachers									
	Black males		Black females		White males		White females		Black males		Black females		White males		White females	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Verbal praise	1.20	.23	1.11	.55	.73	.21	1.15	.40	1.42	.48	.91	.28	.88	.78	.47	.30
Verbal criticism	.95	.48	1.13	.45	.97	.54	.81	.40	1.57	.28	.68	.25	1.08	.59	.87	.58
Verbal neutral	1.06	.15	.97	.38	.91	.42	1.10	.32	1.38	.37	.80	.12	1.07	.62	.62	.26
Nonverbal praise	1.06	.21	1.13	.55	.81	.15	1.20	.52	1.32	.35	.90	.25	.98	.78	.42	.28
Nonverbal criticism	1.05	.32	1.00	.39	.97	.26	.83	.45	1.60	.28	.70	.23	.94	.85	.85	.51
Nonverbal neutral	1.15	.19	.98	.36	.88	.42	1.05	.32	1.37	.38	.77	.16	1.04	.51	.61	.39
Verbal praise with nonverbal	1.20	.25	1.10	.50	.71	.16	1.10	.47	1.28	.35	.88	.33	.81	.83	.51	.27
Verbal praise with nonverbal neutral	.98	.49	1.67	2.57	.75	.64	.97	.67	1.22	.27	.90	.30	1.00	.84	.52	.50
Verbal criticism with nonverbal criticism	.83	.59	1.11	.41	.73	.50	.70	.59	1.48	.55	.84	.45	1.08	1.27	.65	.37
Verbal criticism with nonverbal neutral	1.07	.52	.78	.55	.97	.70	.55	.63	1.42	.40	.57	.26	1.40	1.05	1.02	1.13
Verbal neutral with nonverbal praise	.80	.33	1.16	.73	.77	.49	1.38	.74	1.01	.43	1.02	.49	1.24	1.16	.34	.46
Verbal neutral with nonverbal criticism	1.12	.42	.48	.48	1.22	.71	.96	.55	1.62	.38	.58	.15	.97	.75	.70	.54
Verbal neutral with nonverbal neutral	1.17	.19	1.06	.50	1.00	.58	1.10	.30	1.17	.35	.77	.14	1.11	.50	.65	.32

TABLE II

Comparison of Variables with Analysis of Variance and Analysis of Covariance

Variable		ANOVA significance level	ANCOVA significance level
1. Verbal praise:	R	.04	.07
	ST	.008	.01
2. Verbal criticism:	S	.05	.01
	ST	.04	.01
	RST	.05	.06
3. Verbal neutral:	S	.03	.01
	ST	.01	.006
4. Nonverbal praise:	ST	.002	.002
5. Nonverbal criticism:	S	.05	.01
	RST	.03	.03
6. Nonverbal neutral:	S	.02	.02
	ST	.02	.02
7. Verbal praise with nonverbal praise:	R	.04	.07
	ST	.04	.06
8. Verbal criticism with nonverbal neutral:	S	.008	.04
9. Verbal neutral with nonverbal praise:	ST	.003	.001
10. Verbal neutral with nonverbal criticism:	S	.002	.006

Note. Table includes only variables significant with analyses of variance and/or covariance; R = race of student; S = sex of student; ST = sex of student \times race of teacher; RST = race of student \times sex of student \times race of teacher.

for sex of student and race of teacher was also significant ($F = 9.82$, $df = 1, 13$, $p < .008$). A multiple comparison of means using the Tukey test revealed that white teachers gave more verbal praise to males than to females and that white teachers also gave significantly less verbal praise to females than did black teachers ($p < .05$).

With the covariance analysis, the interaction between sex of student and race of teacher was maintained ($F = 8.45$, $df = 1, 12$, $p < .01$). White teachers gave more verbal praise to males than to females and significantly less verbal praise to females than did black teachers after socioeconomic level was covaried. However, the main effect of race was not statistically significant.

Verbal criticism. Verbal criticism showed a main effect for student sex ($F = 4.51$, $df = 1, 13$, $p < .05$) with males receiving more verbal criticism than females. There was also a significant two-way interaction for student sex and teacher race ($F = 4.94$, $df = 1, 13$, $p < .05$). The Tukey post hoc analysis revealed that white teachers gave significantly more verbal criticism to males than to females ($p < .05$). A three-way interaction effect with student race, student sex, and teacher race ($F = 4.67$, $df = 1, 13$, $p < .05$) was found also. The Tukey test indicated that white teachers gave significantly more verbal criticism to black males ($p < .05$).

The covariance analysis for verbal criticism showed statistical significance for two of the three effects found to be significant with the analysis of variance. A main effect was found for sex of student ($F = 7.69$, $df = 1,12$, $p < .01$) with males receiving more verbal criticism than females. The interaction between sex of student and race of teacher was also significant ($F = 7.64$, $df = 1,12$, $p < .01$). The verbal criticism effects were also slightly stronger than they were with the analyses of variance.

The three-way interaction of teacher race, student sex, and student race was no longer significant, although there was a strong trend in this direction ($p < .06$).

Verbal neutral. The verbal neutral measure showed a main effect for student sex ($F = 5.85$, $df = 1,13$, $p < .03$) with males receiving more verbally neutral behavior than females. A two-way interaction between student sex and teacher race ($F = 8.64$, $df = 1,13$, $p < .01$) was revealed also; the Tukey test indicated that white teachers gave more verbally neutral comments to males than to females ($p < .05$).

With the analysis of covariance, the verbal neutral measure maintained a main effect for sex ($F = 8.09$, $df = 1,12$, $p < .01$) and an interaction effect between sex of student and race of teacher ($F = 10.94$, $df = 1,12$, $p < .006$). Both these effects were also slightly stronger than they were with analysis of variance.

Nonverbal praise. A two-way interaction between student sex and teacher race ($F = 15.41$, $df = 1,13$, $p < .002$) was found for nonverbal praise. Male students received significantly more nonverbal praise from white teachers than female students. The nonverbal praise interaction effect between student sex and teacher race was again significant ($F = 14.53$, $df = 1,12$, $p < .002$) with the analysis of covariance.

Nonverbal criticism. Nonverbal criticism showed a main effect for the student sex ($F = 4.47$, $df = 1,13$, $p < .05$); males received more nonverbal criticism than females. A Tukey post hoc analysis of the significant three-way interaction for student race, student sex, and teacher race ($F = 5.67$, $df = 1,13$, $p < .03$) indicated that white teachers gave significantly more nonverbal criticism to black males than black females, white males, and white females ($p < .01$).

The two effects significant for nonverbal criticism with analysis of variance maintained their significance levels with covariance analysis. The main effect of sex of student ($F = 8.47$, $df = 1,12$, $p < .01$) indicated that males received more nonverbal criticism than females. The three-way interaction for race, sex of student, and race of teacher ($F = 5.69$, $df = 1,12$, $p < .03$) indicated that white teachers gave more nonverbal criticism to black males. The student sex and teacher race interaction was no longer significant although there was still a trend in this direction ($p < .06$).

Nonverbal neutral. The analysis of variance for the nonverbal neutral variable yielded a main effect for student sex ($F = 6.04$, $df = 1,13$, $p < .02$); males received more nonverbally neutral communications than females. A two-way interaction between student sex and teacher race ($F = 6.04$, $df = 1,13$, $p < .02$) was also significant. The Tukey test indicated that white teachers showed more nonverbal neutral behavior toward males than females. With analysis of covariance, nonverbal neutral maintained its main effect for sex ($F = 6.62$, $df = 1,12$, $p < .02$) and the interaction between sex of student and race of teacher ($F = 6.74$, $df = 1,12$, $p < .02$).

Verbal praise with nonverbal praise. The verbal praise with nonverbal praise measure showed a main effect for student race ($F = 4.97$, $df = 1,13$, $p < .04$); black students received more verbal praise with nonverbal praise than white students. There was also a two-way interaction between student sex and teacher race ($F = 4.99$, $df = 1,13$, $p < .04$). None of the comparisons of means in the student sex and teacher race categories yielded significance using the Tukey test. The race of student main effect and the sex of student and race of teacher interaction effects were not significant in the verbal praise with nonverbal praise category with this analysis of covariance.

Verbal criticism with nonverbal neutral. Verbal criticism with nonverbal neutral showed a main effect for student sex ($F = 9.67$, $df = 1,13$, $p < .008$) with males receiving more than females. With the covariance analysis, verbal criticism with nonverbal neutral showed a main effect for sex ($F = 5.32$, $df = 1,12$, $p < .04$).

Verbal neutral with nonverbal praise. Verbal neutral with nonverbal praise showed a two-way interaction effect between student sex and teacher race ($F = 12.9$, $df = 1,13$, $p < .003$). The Tukey post hoc analysis revealed that black teachers gave more verbal neutral with nonverbal praise to females than white teachers ($p < .05$). This effect was maintained with the analysis of covariance ($F = 17.03$, $df = 1,12$, $p < .001$).

Verbal neutral with nonverbal criticism. Verbal neutral with nonverbal criticism showed a sex of student main effect ($F = 15$, $df = 1,13$, $p < .002$) with males receiving more than females. The main effect for sex ($F = 11.23$, $df = 1,12$, $p < .006$) remained with the analysis of covariance.

Nonsignificant variables. No significant findings were obtained for verbal praise with nonverbal neutral, verbal criticism with nonverbal criticism, and verbal neutral with nonverbal neutral. No main effects for teacher race on any of the variables were found.

DISCUSSION

The most salient findings of the current investigation were the multiple statistical interactions between the sex of student and race of teacher. White teachers were found to be more differential in their behavior toward male and female students than black teachers. The former gave more verbal

praise, verbal criticism, verbal neutral, nonverbal praise, and nonverbal neutral behavior to males than to females. Consistent with Good et al. (1973), boys received more positive and negative teacher behaviors on both the verbal and nonverbal levels. Although that study was conducted only with white teachers and students, the present study confirms this pattern for white teachers with both black and white male students. The present results are not consistent with the Byalick and Bersoff study (1974) suggesting that female teachers of both races provided more verbal reinforcement for opposite race boys. In the present investigation, white but not black teachers praised boys more than girls, and the race of the boy was not a critical factor. Only one variable showed differential treatment by black teachers; they gave more verbal neutral with nonverbal praise to female students than did white female teachers.

The present findings raise some interesting questions concerning the differences in interaction patterns of black and white teachers with male and female students. For example, are there differences in cultural backgrounds that influence the teachers' behavior toward children of different sexes, and what are the implications of the differences in behavior toward male and female students? Perhaps differences in the socialization process of black and white female teachers may influence their interaction with male and female students. A review of research by Lewis (1975) indicates some white and black family differences in the sex-role expectations and responses to male and female children. Generally, black families are not as likely to dichotomize the role of males and females, and there is a wider range of behaviors that are considered common and appropriate for both sexes. Thus more white female teachers than black female teachers are likely to be reared in a social and familial environment where there are greater differences in the treatment and expectations of males and females. White female teachers tend to be reared more in a milieu with a value system that expects males to be more independent and to assume leadership roles. In that case, white female teachers would be more likely to give proportionally more attention to both the positive and negative behaviors of boys in order to eliminate inappropriate behavior and to strengthen appropriate behavior. Black female teachers are more likely to be raised in familial situations that have more equal expectations for males and females with regard to later status, and thus black teachers would be likely to distribute their attention to the behavior of males and females more equally.

The implications of the differences in the way that white and black female teachers respond to male and female students include the likelihood of different expectations of and belief about male and female students. This research suggests the need to examine further how white and black female teachers perceive the roles and behaviors of male and female students. Generalizations about teacher behavior may not always be made without considering the race of the teacher. Black and white female teachers may

have some differences in perceptions and behavioral norms for male and female students which influence the behavior of both the teacher and the students.

The latter consideration also raises the possibility of some differences in the way female students respond in classes with white female teachers and black female teachers. What may need to be more specifically studied is the link between the sex role norms and expectations of teachers and the participation or other response patterns of female students within these classes. Perhaps there are some connections with the amount of attention given to female students.

Several teacher behaviors were related to the race of student before socioeconomic status was considered, but most of these differences were no longer significant when statistical procedures were used to control for the lower socioeconomic status of some groups of black students. However, the actual significance levels were changed only slightly. The behaviors affected were verbal behaviors, with black children having received more verbal praise and verbal praise with nonverbal praise than white children, and white teachers having given more verbal criticism to black males before covariance procedure. The race of student effect was not totally consistent with the Hillman and Davenport (1978), Brown et al. (1970), and Byalick and Bersoff (1974) studies. The proportion of black to white students could be a factor influencing the race of student effect. Differences may also be related to the fact that all observations were during reading periods with some small group activities in addition to those with the entire class.

However, even with socioeconomic factors controlled, white female teachers still gave more nonverbal criticism to black males. These results confirm the Coates (1972) and Eaves (1975) studies, which found that white teachers rated black male children more negatively. The current study indicates that on the nonverbal level, white teachers may be reacting in a more negative or critical way toward black males.

The question remains as to whether the teachers are responding more to race or to behavioral differences. Coates (1972) suggested that adults may respond more to race than to behavioral differences because his "teachers" used more negative verbal statements in training with a black male child than with a white male child when the behavior of the child was controlled. However, black and white teachers could still be responding to the same behaviors of black males differently; further investigation is needed to clarify the perceptions of black and white teachers of the behavior of black males. Because both black and white males generally received greater amounts of verbal and nonverbal criticism, and white teachers demonstrated more nonverbal criticism to black males, there may be differences in perception of the behavior as well as different internalized standards operating concerning what is appropriate and inappropriate behavior.

What would also be interesting to examine is the impact of teacher behavior on the black male child. The Woolfolk and Woolfolk study (1974) indicated that children correctly perceived the evaluation input of teachers' messages that were communicated verbally and nonverbally. It is possible that the negative nonverbal behaviors of white female teachers are not only perceived correctly by the children but might influence the cognitive and affective performance of black males in the classroom. However, more research and critical evaluation are needed before such a claim could be substantiated.

This discussion has indicated several areas for further research. The significant differences in the black and white teacher behaviors and the significance of the nonverbal criticism of the black male child by white female teachers have raised several questions. The sex of the teacher may be another variable to consider because this study was limited to female teachers. Future research may need to focus on all four factors—sex and race of teacher as well as sex and race of students. The educational level of the students, that is, elementary, secondary, and college, and the proportion of black and white students in the class would also be another factor to investigate with respect to the interaction patterns of teachers and students using the sex and race variables.

REFERENCES

- BENNETT, C. Students' race, social class, and academic history as determinants of teacher expectation of student performance. *Journal of Black Psychology*, 1976, 3(1), 71–86.
- BROPHY, J. E., & EVERTSON, C. M. *Process-product correlations in the Texas teacher effectiveness study: Final report*. Austin: Texas Research and Development Center for Teacher Education, 1974.
- BROWN, W. E., PAYNE, L. T., LANKEWICH, C., & CORNELL, L. Praise, criticism, and race. *Elementary School Journal*, 1970, 70, 373–377.
- BYALICK, R., & BERSOFF, D. Reinforcement practices of black and white teachers in integrated classrooms. *Journal of Educational Psychology*, 1974, 66(4), 473–480.
- COATES, B. White adult behavior toward black and white children. *Child Development*, 1972, 43, 143–154.
- COOPER, H., BARON, R., & LOWE, C. The importance of race and social class information in the formation of expectancies about academic performance. *Journal of Educational Psychology*, 1975, 67(2), 312–319.
- DAVIS, O. L. Teacher behavior toward boys and girls during first grade reading instruction. *American Educational Research Journal*, 1967, 4, 261–270.
- EAVES, R. Teacher race, student race, and the behavior problem checklist. *Journal of Abnormal Child Psychology*, 1975, 3(1), 1–9.
- FELDMAN, R., & DONOHUE, L. Nonverbal communication of affect in interracial dyads. *Journal of Educational Psychology*, 1978, 70(6), 979–987.
- FRIEDMAN, P. Comparisons of teacher reinforcement, schedules for students with

- different social class backgrounds. *Journal of Educational Psychology*, 1976, 68(3), 286-292.
- GOOD, T., SIKES, J. N., & BROPHY, J. E. Effects of teacher sex and student sex on classroom interaction. *Journal of Educational Psychology*, 1973, 65(1), 74-87.
- HELLER, M., & WHITE, M. Rates of teacher verbal approval and disapproval to higher and lower ability classes. *Journal of Educational Psychology*, 1975, 67(6), 796-800.
- HILLMAN, S. B., & DAVENPORT, G. Teacher-student interactions in desegregated schools. *Journal of Educational Psychology*, 1978, 70, 545-553.
- HOLLINGSHEAD, A. B., & REDLICH, F. *Social class and mental illness*. New York: John Wiley & Sons, 1958.
- HUGHES, D. C. An experimental investigation of the effects of pupil responding and teacher reacting on pupil achievement. *American Educational Research Journal*, 1973, 10, 21-37.
- KEITH, T., TORNATZKY, L., & PETTIGREW, L. An analysis of verbal and nonverbal classroom teaching behaviors. *The Journal of Experimental Education*, 1974, 42(4), 30-38.
- LEWIS, D. The black family: socialization and sex roles. *Phylon*, 1975, 36(3), 221-237.
- MEHRABIAN, A. *Nonverbal communication*. Chicago: Aldine-Atherton, 1972.
- MEYER, W. J., & THOMPSON, G. G. Sex differences in the distribution of teacher approval and disapproval among sixth grade children. *Journal of Educational Psychology*, 1956, 47, 385-397.
- MILLER, H. Race vs. class in teacher expectations. *Psychological Reports*, 1973, 32(1), 105-106.
- O'LEARY, D., & O'LEARY, S. *Classroom management: The successful use of behavior modification*. New York: Pergamon Press, 1972.
- ROSENSHINE, R. Recent research on teacher behaviors and student achievement. *Journal of Teacher Education*, 1976, 27, 61-64.
- RUBOVITS, P., & MAEHR, M. Pygmalion black and white. *Journal of Personality and Social Psychology*, 1973, 25(2), 210-218.
- STALLINGS, J. A., & KASHOWITZ, D. H. *A study of follow-through implementation*. Paper presented at the annual meeting of the American Educational Research Association, Washington, D. C., April 1975.
- WEITZ, S. Attitude, voice, and behavior: A repressed affect model of interracial interaction. *Journal of Personality and Social Psychology*, 1972, 24, 14-21.
- WINER, B. J. *Statistical principles in experimental design*. New York: McGraw Hill, 1971.
- WOOLFOLK, A. Student learning and performance under varying conditions of teacher verbal and nonverbal evaluative communication. *Journal of Educational Psychology*, 1978, 70(1), 87-94.
- WOOLFOLK, R., & WOOLFOLK, A. Effects of teacher verbal and nonverbal behaviors on student perceptions and attitudes. *American Educational Research Journal*, 1974, 11, 297-303.
- WORD, C., ZANNA, M., & COOPER, J. The nonverbal mediation of self-fulfilling prophecies in interracial interaction. *Journal of Experimental Social Psychology*, 1974, 10, 109-120.

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