

Teacher-Student Interactions and Race in Integrated Classrooms

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ABSTRACT The treatment of African American students and Caucasian American students in middle schools by Caucasian American female teachers during 32 hr of instruction in integrated classrooms was investigated. Data revealed that African American students as a group were not treated as favorably by their teachers as were Caucasian American students. Teachers interacted more positively with American Caucasian students according to nearly all 16 dependent variables of a modified version of the Brophy-Good Dyadic Coding System. Caucasian American boys, relative to all other students, received the most favorable treatment and initiated the most student-teacher contact. Conversely, African American boys, among all the groups studied, received the least favorable treatment from their teachers.

For many years, researchers have concluded that African American students are given less attention, ignored more, praised less (Ford, 1985; Hillman & Davenport, 1978; Holliday, 1985; Marcus, Gross, & Seefeldt, 1991; Meier, Stewart, & England, 1989; Patchen, 1982; Washington, 1980; Weinberg, 1983), and reprimanded more than their Caucasian American counterparts by Caucasian American teachers in integrated classes (Aaron & Powell, 1982; Cecil, 1988; Hillman & Davenport; Stevens, 1980; Troyna, 1990).

Other studies have shown that even when students of both groups respond with the same answers, Caucasian American students are praised more often than African Americans (Aaron & Powell, 1982; Cecil, 1988; Ford, 1985; Hillman & Davenport, 1978; Holliday, 1985; Marcus et al., 1991; Meier et al., 1989; Patchen, 1982; Stevens, 1980; Troyna, 1990; Weinberg, 1983).

Investigators (Ahluquist, 1991; Casteel, 1997; Law & Lane, 1987; Nieto, Young, Tran, & Pang, 1994) have stated that approximately 9 out of 10 teachers in integrated school settings tend to be overwhelmingly Caucasian and female. Moreover, those teachers are from mostly suburban communities and have experienced little contact with African American students, which could explain why they have low expectations for and tolerance of African American students.

Noting the racial bias shown by many teachers, some researchers (Brophy, 1983; Cooper, Hinkel, & Good, 1980; Good, 1981; Meier et al., 1989; Rabinow & Cooper, 1981;

Robinson, Robinson, & Bickel, 1980; Weinstein et al., 1982) have declared that teachers' treatment and attitudes can have a devastating effect on their students. The researchers also argued that such negative treatment can erode students' self-esteem, affect their motivation, and severely hamper their academic performance.

Although a few investigators such as Beady and Hansell (1981) have found no negative treatment of African American students by Caucasian American teachers, the overwhelming majority of studies seems to point to biased treatment of African American students.

Multicultural awareness has received growing attention in our schools, in teacher training, and in society in general. A sustained attempt has been made to promote acceptance of various subcultural groups and to diffuse stereotyping of students on the basis of race. Therefore, the timing of this study makes its conclusions especially significant because most research investigating racially based discrepancies in teacher-student interactions date back 20 years or more. Because of a possible change in circumstances and attitudes, I attempted to answer the following question: Does race still influence the amount of acceptance and feedback that African American students receive from Caucasian American teachers in integrated classrooms? Simply put, are African American students treated differently from Caucasian American students by Caucasian American teachers, on the basis of their race?

Method

Participants

The participants for this study consisted of 417 seventh-grade students attending eight schools in a suburban public school district in southeastern Louisiana. The racial composition of the schools as a whole was as follows: 48% Caucasian American, 43% African American, 8% Hispanic, and 1% Other. The racial and gender breakdown of the students that I studied consisted of the following: 184 African Amer-

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icans (101 girls, 83 boys); 233 Caucasian Americans (121 girls, 112 boys). Students were placed in all of their classes on the basis of the previous year's reading scores taken from the California Achievement Test (CAT). All students in the study were considered low academic achievers and were placed in all low-level classes by their counselors. We (the author plus three trained coders who were assistant teachers with the schools) selected classes composed of low achievers for the study because they were racially balanced. All 417 students from the eight schools were students in social studies classes. We chose social studies classes for this study because they afforded sufficient verbal interactions between teachers and students.

Sixteen Caucasian American female teachers (2 teachers at each school) participated in the present investigation. The teachers were chosen by their principals because of their previous positive evaluations and their years of teaching. The teachers' average age and years of teaching experience were as follows: $M = 36$, $SD = 6.75$ and $M = 17.33$, $SD = 5.25$, respectively. The teachers were not told the true nature of the observation; however, they were debriefed regarding the results of the present study.

Instrument

I constructed a teacher-treatment inventory observation system to measure teachers' behavior toward students in the classroom. The instrument is a modified version of the Brophy-Good Dyadic Interaction Observation System (Brophy & Good, 1970). We created a coding system that was sufficient to evaluate a diversity of variables such as race (African American and Caucasian American) and gender between student and teacher in classroom interactions.

The variables discussed in this study are self-explanatory by their titles as presented in the Appendix; however, the terms *open*, *direct*, *product*, and *process* require explanation. *Process* and *product* refer to types of questions asked by the teacher. Process questions require the student to use critical thinking to arrive at a conclusion; product questions simply require the student to give a one-word or short factual answer.

The terms *open* and *direct* refer to the methods by which teachers choose students to respond to questions. An open question is directed to the whole class; a student is expected to raise his or her hand to answer. For a direct question, the teacher calls on a specific student. A student's response to an open question without waiting for permission from the teacher was considered a *call out* and was not coded in this study. If a student gave an incorrect answer or refused to respond, we coded the teacher according to whether she provided the student with clues that could lead to a correct answer. The teacher could end the interaction with the student by stating the correct answer to the question or by calling on another student to attempt the answer.

The Brophy-Good Dyadic Interaction Observation System included each student's or teacher's actions and reactions in the class, rather than the class as a whole. For this

study, we selected 16 variables that we believed would measure significant interactions between student and teacher. All contacts with the teacher were recorded separately for each student; they were noted by the type of interaction, the quality of student response, and the kind of feedback given.

I visited the 16 participating classrooms prior to official evaluation and scoring procedures to observe teaching styles and possible problems that could surface during the observation. Classes were officially 55 min in length; however, the actual time that teachers spent conducting lessons averaged about 37 min. Nevertheless, we believed that the time was sufficient. Each teacher covered only one social studies project or subject area per class period. A few weeks later, we made the first official classroom observations of each teacher to record their treatment of and verbal interaction with the students. Three months later, a final observation was conducted for each teacher.

Thus, we used the Brophy-Good Dyadic Interaction System to conduct two 2-hr observations in each teacher's classroom. That observation system provided information about the interactions of 417 students and their teachers based on 32 hr (16 teachers \times 2 hr) each of classroom observations. The study was conducted in 16 days (two different classes per day) over a period of 6 months. If a teacher was absent, no coding took place that day, and we returned at a later date. The coders recorded such data as subject matter, student's race, gender, and verbal interactions. No effort was made to judge a teacher's academic performance in regard to educational content and classroom management.

One variable that we thought likely to skew the data was whether some teachers directed questions at specific students because they thought the students were not paying attention. This appeared to happen with only 2 teachers; the coders therefore omitted that behavior.

No observations were made on a Monday or Friday; all observations occurred during the second or third instruction period. During each observation, one observer coded the interactions involving African American students, and the other observer coded the Caucasian American students. We were seated on opposite sides in the rear of the room, and there was no verbal contact with teacher or students during that time. Each coder's assignments were balanced between the African American and Caucasian American groups to eliminate the possibility that any obtained differences could be attributed to coder differences. Reliability for the coders was measured by having each one code a 30-min videotape recording from the school system training department that depicted teacher and student interactions during a seventh-grade lesson. Also, to assure reliability, I divided the number of agreements among observers by the number of their agreements plus disagreements plus omissions multiplied by 100.

Results

The results are presented in two tables, each giving mean values for the interactions between teacher and students,

grouped by race and gender. Inspection of both tables reveals that a significant race and gender factor was obtained for nearly every variable. First, to better understand the data in context, one should summarize the results of mean frequencies with each of the 16 classrooms. To correct for under- or overrepresentation of any group, we analyzed per-student frequencies. That is, the observed frequency was divided by the number of students comprising the target group in that class. Mean and standard deviation scores are shown as African Americans or Caucasian Americans, by classroom.

The data (means and standard deviations) presented in Table 1 suggest that lack of contact by teachers toward African Americans did not vary widely by classroom. The fact that two teachers garnered more contact with African Americans and offered them more praise did not influence the outcome of the study. Also, Caucasian American students initiated more contact in response to questions than did African American students.

Following the results, we examined the main effects of teacher interactions according to race and gender of the students. For each of the 16 observed variables, a repeated measures analysis of variance (ANOVA) was undertaken. The levels included in the design were Variables \times Race \times Gender ($16 \times 2 \times 2$). Race and gender were the within-subject factors; the teacher-student interaction factors were the dependent variables. Because of space constraints, I summarized only 8 of the 16 dependent variables (1, 2, 3, 4, 6, 11, 12, and 16) in Table 2. (See Appendix for complete list of variables.)

Race Differential

As shown in Table 2, data for the first and second variables revealed an overwhelming significant main effect by race, $F(1, 15) = 56.34, p < .0000$, and $F(1, 15) = 22.50, p < .0003$. Caucasian American students initiated more interactions with teachers by raising a hand to answer product and process open questions. The mean scores for Caucasian American students were .66 and .57, as compared with scores of .29 and .23, respectively, for African American students.

Examination of the third variable did not reveal a significant main effect, $F(1, 15) = 3.46, p < .0824$, although teachers directed more product questions to Caucasian Americans by name ($M = .79$) than to African Americans ($M = .59$). However, the fourth variable, which investigated a teacher's contact with a student by calling directly on a student by name to answer a process question, showed a significant effect, $F(1, 15) = 24.38, p < .0003$. African American students received a far smaller portion of process questions directed to students by name ($M = .31$) than did their counterparts ($M = .73$).

Results of the sixth variable, which measured whether a teacher offered guided clues to a student following a partial correct answer, benefited Caucasian Americans, $F(1, 15) = 7.10, p < .0177$.

The 11th variable, which constituted praising a student

after a correct answer, was also significant, $F(1, 15) = 19.84, p < .0005$. In those instances, teachers praised Caucasian American students more frequently ($M = .47$) than African American students ($M = .19$). When a Caucasian American student responded with an incorrect answer to a question (Variable 12), he or she was praised slightly more often ($M = .18$) than an African American student ($M = .09$), $F(1, 15) = 5.44, p < .0340$.

Significance was also found for the 16th variable, which examined whether a teacher repeated the question to the same student in a different context, giving more clues after a wrong answer, $F(1, 15) = 24.43, p < .0002$. When we analyzed the mean scores, we found that teachers provided more clues to help Caucasian American students ($M = .38$) than African American students ($M = .13$) answer questions.

Gender Differential

A significant main effect for students' gender interactions was documented on four of the nine variables presented in Table 2.

Girls frequently raised their hands for product questions, thus creating more contact with the teacher, $F(1, 15) = 8.72, p < .0099$. For girls, the frequent mean score was .47, compared with .34 for boys. However, the effect favoring girls was attributed to the interaction of race, $F(1, 15) = 12.02, p < .0034$. That gender effect was influenced by the lack of participation from African American boys. Because the Caucasian American boys attempted to initiate contact with their teacher more often than the girls did, the higher mean score for girls showed that the African American boys' participation was dramatically lower.

The third variable, which constituted product questions directed to students by name, showed a marginal significant effort, $F(1, 15) = 4.64, p < .0480$. The interaction of race and gender was not significant for that variable. Results revealed that boys ($M = .79$) were called on more frequently than girls ($M = .57$). However, regarding the fourth variable, the main effect was significant, $F(1, 15) = 10.41, p < .0057$. Teachers directed more process questions to students by name if they were boys ($M = .70$) than if they were girls ($M = .47$). Again, that gender effect was valid only if the student was Caucasian American. Further analysis showed that the interaction of race and gender was significant, $F(1, 15) = 9.55, p < .0075$, and that girls' mean score could be attributed only to effect of race.

A significant interaction effect was found also for the sixth variable regarding a teacher offering guided clues to a student, $F(1, 15) = 7.09, p < .078$. Those results were positive toward the boys. Nevertheless, that conclusion could be related directly to Caucasian American boys rather than to African American boys.

A small effect could be measured with regard to the 11th variable, $F(1, 15) = 4.27, p < .054$, which revealed that boys ($M = .39$) and not girls ($M = .27$) received more praise after correctly answering a question. Such effect was caused by the

Table 1.—Mean Frequency of Significant Teacher–Student Interactions in Each Classroom, by Race

Students	Teachers															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>Variables 1 and 2: Student initiated contact with teacher to an open product and process question by raising hand</i>																
AA																
M	1.00	.75	3.50	1.50	2.25	2.50	1.75	.75	3.50	.75	2.25	.50	2.25	.25	2.25	7.50
SD	.67	.67	1.96	.94	1.30	1.33	1.56	.61	1.96	.61	.36	1.18	1.18	.90	1.29	.29
AC																
M	2.25	2.75	5.00	5.50	3.25	6.00	4.25	5.50	5.00	.275	7.75	7.50	3.50	3.50	4.50	3.00
SD	1.15	1.40	2.67	.53	1.70	2.77	2.05	2.43	1.79	2.12	3.87	3.87	2.41	1.82	2.14	1.57
<i>Variables 3 and 4: Process and product questions directed to students by name</i>																
AA																
M	1.50	4.75	4.50	1.25	1.00	2.50	2.00	1.00	4.50	2.00	1.50	1.00	1.25	2.50	4.00	3.25
SD	.69	2.50	2.10	.63	.58	1.64	1.17	.67	2.10	1.22	1.30	.92	.62	1.81	1.78	2.45
AC																
M	2.00	4.50	4.75	4.75	4.50	7.25	7.25	3.50	6.90	6.25	6.00	5.00	5.75	6.50	3.75	3.00
SD	1.02	.54	2.71	2.40	2.33	3.41	3.56	2.30	4.68	2.70	2.87	2.63	3.20	3.34	1.81	2.15
<i>Variable 5: Correct answer given with no feedback</i>																
AA																
M	1.50	2.00	1.50	.50	.50	00	.50	.50	2.00	2.00	1.00	.50	2.00	00	.50	.50
SD	.32	.21	.58	.27	.27	00	.33	.30	.77	1.13	.63	.30	.80	00	.28	.39
AC																
M	1.50	1.50	1.00	1.00	2.50	1.50	2.00	2.50	2.50	5.50	3.00	1.50	3.50	5.00	2.50	3.50
SD	.32	.61	.23	.44	.96	.56	.68	.83	1.13	1.84	1.26	.60	1.96	1.71	.81	1.21
<i>Variable 6: Stayed with student following partial correct answer and offered guided clues</i>																
AA																
M	.50	3.00	.50	00	.50	00	.50	00	1.50	00	.50	1.00	1.50	2.00	2.00	1.50
SD	.30	1.35	.27	00	.26	00	.33	00	.30	00	.32	.16	.31	1.13	.78	.78
AC																
M	3.00	2.00	2.00	4.50	2.50	1.50	3.00	.50	2.50	2.00	3.50	1.00	2.00	2.50	3.00	2.50
SD	1.09	.84	.47	1.59	.96	.31	1.18	.23	1.29	.75	1.36	.55	.83	.76	1.12	1.03
<i>Variables 11 and 12: Praised student after correct answer and praise given if response was incorrect</i>																
AA																
M	1.25	2.00	2.75	00	.75	.25	1.25	.50	1.00	1.50	1.50	.50	1.50	1.00	1.50	3.00
SD	.69	1.13	1.78	00	.45	.22	.71	.25	.58	1.20	.77	.40	.90	.78	.79	.90
AC																
M	2.00	1.25	1.50	1.25	2.00	3.00	2.00	1.25	2.75	3.50	2.50	2.00	2.00	3.00	2.00	2.75
SD	1.03	.96	.54	.82	1.26	1.82	1.20	.75	1.79	1.70	1.23	1.34	1.34	1.44	.18	1.32
<i>Variable 16: Teacher repeated question to same student in different context, with more clues after incorrect answer</i>																
AA																
M	1.25	2.00	3.50	00	00	1.50	00	00	2.00	1.00	1.50	.50	1.50	.50	3.00	1.50
SD	.93	.97	1.72	00	00	.56	00	00	.68	.05	.94	.30	.77	.37	1.18	.78
AC																
M	1.50	3.00	2.00	1.50	2.50	2.00	2.00	00	3.50	2.50	2.50	2.50	2.00	2.50	3.50	2.00
SD	1.10	1.20	.18	.56	.96	.70	.77	00	1.70	.72	.99	.92	.82	.87	1.27	.70

Note. AA = African American; AC = American Caucasian. The 16 teachers were female Caucasian Americans. The numbers 00 indicate no participation.

interaction of race and gender, $F(1, 15) = 8.24, p < .0117$; Caucasian American boys outscored all other groups.

The 12th variable, which measured the amount of praise given even if the answer was incorrect, was significant, $F(1, 15) = 14.47, p < .0017$. Interaction of race and gender was extremely significant, $F(1, 15) = 12.32, p < .0032$. Boys received the major portion of teacher praise ($M = .16$), as compared with girls ($M = .09$). That conclusion was true

only for Caucasian American boys, however. Teachers praised African American boys less than other students.

In every case in which race was a significant factor, Caucasian Americans initiated more interactions with such variables as product and process questions and received more positive effects of other variables from their teachers than African Americans. A similar consistency was also found for the gender variable; Caucasian American boys attempt-

Table 2.—Summary of Significant Analysis of Variance Scores of Teacher and Student Interactions, by Race and Gender

Variable	Combined	African American		Caucasian American		Effect								
		M	F	M	F	Main effect (race)			Main effect (gender)			Interaction (Race × Gender)		
						F(1, 15)	MSE	p	F(1, 15)	MSE	p	F(1, 15)	MSE	p
1						56.34	.40	.000	.020	.040	.8875	6.58	.019	.0215
<i>M</i>	.477	.249	.329	.713	.618									
<i>SD</i>	.219	.158	.151	.250	.258									
2						22.50	.082	.0003	.872	.028	.0099	12.02	.032	.0034
<i>M</i>	.404	.095	.374	.588	.558									
<i>SD</i>	.250	.139	.250	.248	.326									
3						3.46	.253	.0824	4.64	1.66	.0480	2.24	.169	.1550
<i>M</i>	.676	.591	.526	.979	.606									
<i>SD</i>	.467	.645	.393	.439	.331									
4						24.38	.201	.0002	10.41	.077	.0057	.955	.143	.0075
<i>M</i>	.586	.275	.344	1.120	.605									
<i>SD</i>	.047	.359	.302	.565	.351									
5						7.08	.064	.0178	1.45	.039	.2467	.13	.047	.7228
<i>M</i>	.276	.212	.172	.400	.321									
<i>SD</i>	.246	.274	.163	.322	.195									
6						7.10	.062	.0177	3.64	.049	.0756	7.09	.038	.178
<i>M</i>	.278	.183	.207	.479	.244									
<i>SD</i>	.236	.326	.257	.164	.151									
11						19.84	.058	.0005	4.27	.054	.0566	8.24	.035	.0117
<i>M</i>	.331	.189	.204	.593	.338									
<i>SD</i>	.238	.270	.169	.279	.217									
12						5.44	.024	.0340	14.47	.009	.0017	12.32	.019	.0032
<i>M</i>	.136	.075	.107	.287	.075									
<i>SD</i>	.145	.111	.129	.216	.092									
16						24.43	.039	.0002	4.23	.045	.0574	2.71	.061	.1203
<i>M</i>	.253	.134	.127	.481	.271									
<i>SD</i>	.242	.253	.192	.306	.199									

Note: See Table 1 for a description of the variables. M = male; F = female.

ed to answer more questions and received a greater portion of teachers' interactions such as praise and feedback. African American boys received less contacts with the teacher than did other students. Therefore, when teacher-student interactions favored girls, the variable effect was caused by a smaller number of interactions with African American boys.

Discussion

I designed this study primarily to investigate whether differences still exist in the treatment of African American boys and girls when being taught by Caucasian American teachers in racially mixed classrooms, after decades of multiculturalism and racial consciousness intended to address racial indifference and educational discrimination.

Examination of the data reveals that, in this study, African American students received more negative interactions from their Caucasian American teachers than the Caucasian American students. Concurrently, Caucasian American students received a greater portion of positive interactions such as being praised more often, receiving more positive feedback, and being given more clues by their teachers than African American students.

Also, the major findings of this investigation are consistent with results from previous studies discussed in the literature where researchers found that teacher-student interactions were racially biased in integrated classrooms, indicating that race is still a significant factor in the amount of contact a student receives. Caucasian American teachers clearly demonstrated a degree of racial prejudice in their treatment of African American students. Furthermore, merely bringing African American and Caucasian American students together in school does not necessarily improve racial or academic achievement when they are taught by Caucasian American teachers.

One must consider carefully data that show that Caucasian American teachers may treat students differently out of prejudice, conscious or unconscious, or from a perception that African Americans have different needs and abilities (Billings, 1991; Grant, 1988; Marcus et al., 1991). Regardless of the causes of racial preference, teacher interaction and treatment of students in integrated classrooms is not equal.

Although my results seem to imply overwhelmingly that racial, as well as gender, biases were demonstrated by Caucasian American teachers, one should exert caution in drawing concrete conclusions solely on the basis of this study.

My findings underscore the need for further research on classroom interactions between students and teachers of different races to help understand some of the problems that plague interracial classrooms and society.

Finally, there is enough data in this study to warrant petitioning school administrators and institutions of higher learning to instruct more effectively both preservice teachers and current teachers in multicultural and racial awareness in the classroom.

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APPENDIX

Variable Interactions Among Teachers and Students

1. Student initiated contact with teacher to an open product question by raising a hand.
2. Student initiated contact with teacher to an open process question by raising a hand.
3. Product questions directed to student by name.
4. Process questions directed to student by name.
5. Right answer given with no feedback.
6. Stayed with student following partial correct answer and offered guided clues.
7. Part right answers given, followed by no clues.
8. Part right answer given, followed by teacher giving correct answer.
9. Part right answers given, followed by teacher calling on another student.
10. Given a clue after no response.
11. Praised student after correct answer.
12. Praise given even if response was incorrect.
13. Wrong answer given—no feedback/clues offered.
14. Wrong answer given—followed by teacher giving answer.
15. Teacher called on another student after no response.
16. Repeated question to same student in different context with more clues after wrong answer.