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ABSTRACT

This experiment was designed to assess whether the expected and actual performance of black and white students on an academic task would be differentially affected by the race of the successful models observed. Since males and females might not be equally influenced by the modeling effects, separate analyses were planned for males and females of each race. The null hypotheses tested were that within each of the four groups students who observe black students as the most successful expect to, and actually do, receive the same scores as students who observe white students as the most successful. The subjects were all of the available fifth-grade students from two grade schools, one school from each of two mid-sized central Virginia cities. Subjects were shown one of two video tapes of other students working on an academic task. On one tape two black students were congratulated by the teacher for having gotten the best score, while on the other tape two white students were congratulated. Planned comparisons indicated that black males who viewed the video tape of blacks succeeding expected, and actually did, score higher than black males who observed white students succeeding. All other comparisons were not significant. (Author/JM)

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EFFECTS OF RACE OF SUCCESSFUL PEER MODELS ON ACADEMIC EXPECTATIONS AND PERFORMANCE OF BLACK AND WHITE STUDENTS

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Black and white fifth grade students of both sexes were shown one of two video tapes of other students working on an academic task (reading a paragraph and answering questions about it). On one tape two black students were congratulated by the teacher for having gotten the best score, while on the other tape two white students were congratulated. Planned comparisons indicated that black males who viewed the video tape of blacks succeeding expected to, and actually did, score higher than black males who observed white students succeeding. All other comparisons were not significant.

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It is well established that a failure experience or a history of previous failures often results in low expectations for future success (Jucknat, 1938; Sears, 1940). These low expectations may be viewed as perceiving the probability of success in a given situation to be low. Thus, according to Atkinson's (1958) model of achievement motivation, the estimates of a poor probability of success could have a very damaging effect on motivation and ultimately on performance. Indeed, experimental manipulation of prior success and failure experiences has been demonstrated to influence not only expectations, but also actual performance on anagrams (Feather, 1968) and standardized aptitude tests (Bridgeman, 1974).

The practical problem then becomes how to raise expectations for academic success among students with a history of prior failures without resorting to sham feedback that would be unacceptable in applied settings. One strategy is to design educational experiences in which there is a high probability of success for all students. After a number of success experiences the student should raise his self-expectation, and the early contrived successes should then lead to later successes on more difficult material. Some students, however, might lack the motivation or self-confidence to succeed on even the initial tasks or they may perceive them as such artificial tasks that they would not generalize success expectancies to obviously more difficult material. A possible strategy to employ with these students would be to induce success expectancies vicariously. Bandura (1969) implies that vicarious learning can often be substituted where direct learning is impossible or impractical. Students, then, may be able to vicariously learn to expect success by observation of a successful

peer. In this context it is obviously of critical importance that the model be perceived as a true peer; a student would be unlikely to change his expectations for success on an academic task by simply observing the success of a teacher or a student he viewed as having skills different from his own. This view is consistent with social comparison theory (Festinger, 1954) which suggests that persons select reference models perceived to be similar in ability, but reject models who are too different from themselves. In modeling studies, this social comparsion process has been demonstrated to influence a variety of actual observer behaviors including patterns of self-reward (Bandura and Whalen, 1966) and task perseverance (Berger, 1971). While similarity between model and observer could be assessed over a number of relevant dimensions, race is a particularly important one since it is an instantly recognizable social category system that is spontaneously used by many students (Katz, 1968).

The current experiment was designed to assess whether the expected and actual performance of black and white students on an academic task would be differentially affected by the race of the successful models observed. Since males and females might not be equally influenced by the modeling effects, separate analyses were planned for males and females of each race. The null hypotheses tested were that within each of the four groups (black males, black females, white males, and white females) students who observe black students as the most successful expect to, and actually do, receive the same scores as students who observe white students as the most successful. There were, then, four planned comparisons on each dependent variable (expected score and actual score).

Method

Subjects

The subjects were all of the available fifth grade students from two grade schools, one school from each of two mid-sized central Virginia cities. The schools were selected because of the approximately equal racial balance in each school. The total sample consisted of 80 black males (BM), 88 black females (BF), 57 white males (WM), and 49 white females (WF), for a total of 274 subjects. Three oriental subjects were excluded from the analysis.

Video Tapes

Twelve fifth grade students (3 BM, 3 BF, 3 WM, and 3 WF) from a different school system were used as the models. These students were video taped in an actual classroom with a thirty-four year old white female with five years of teaching experience acting as their teacher. On the video tape the teacher first passes out the test booklets and then says:

This is a test of your ability to learn about something you have never studied before. You will have three minutes to study a short paragraph, then you will hand the paragraph in and answer twenty questions about a make believe country which you read about in the paragraph. Since all the questions are about the make believe country in that paragraph, how well you do on the test doesn't have anything to do with what you really know about geography.

The tape then shows the students reading the paragraphs and then passing them in and answering the questions. By just viewing the tape it is not possible to read any of the words in the paragraph or on the test. The tape was shortened by cutting out a few minutes while the students were reading and answering the questions.

Following a blank screen of about four seconds the picture returns showing the teacher finishing marking the papers. She then stands and says:

Now that I've finished grading these tests I can tell you how you all have done. The average of your whole group was ten right. Some of you got four right and two of you got eighteen right. Jim and Ruth, you got eighteen right. Come on up and get your papers. Nice work, Jim, very good Ruth.

The camera follows Jim and Ruth as they go get their papers and return to their seats, then the scene fades out. In this tape both Jim and Ruth were white students. A second video tape was made by copying the initial portions of the first tape, but substituting an ending in which Jim and Ruth are both black students.

Procedures

The video monitor was set up in a screened off area in the back of an empty classroom. Students were brought in one at a time and told that they would be viewing a T.V. picture of a group of children working on the same test that they were about to take, and that everything they needed to know about the test would be explained on the T.V. They were then randomly assigned to view either the first or the second tape. Immediately after the tape was over the experimenter asked the student how many questions he thought he could get right on the test. The student then took the test.

Results

Separate 2 (sex) x 2 (race) x 2 (video tape) analyses of variance were computed on the expected scores (number the student stated he thought he would get right) and on the actual scores in order to determine the appropriate error terms for the planned comparisons.

Table 1 indicates the relevant information for each planned comparison. Black males who viewed the video tape in which two black students were most successful stated higher expected scores than black males who viewed the tape in which two white students were successful

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Insert Table 1 about here

($F = 4.81$, $df = 1/266$, $p < .05$). Furthermore, their actual scores on the test were higher ($F = 4.43$, $df = 1/266$, $p < .05$). None of the other comparisons was significant.

Discussion

Both the expected and actual scores of black males are differentially affected by the race of peer models seen succeeding on an academic task. More generally, the results suggest that personal prior success is not necessary to raise expectations and performance, simply observing the success of a person perceived as a true peer is sufficient. The current experiment, then, extends previous findings on the facilitating effect of directly experienced success (Feather, 1968; Bridgeman, 1974) to also include vicariously experienced success, and further confirms the importance of social comparison theory (Festinger, 1954) in making predictions about observers' behavior.

From a practical point of view, the results suggest that a teacher in a racially mixed classroom may improve the performance of some of the black males in her class by commenting favorably on the good performances of their black peers, but that the consistent reinforcement of only white students might not have the same facilitating effe

Studies of the effects of desegregation on the academic performance of black students have yielded equivocal results, especially where they have failed to consider the quality of the interracial contact (Katz, 1968). Detailed analyses of the Coleman Report data suggest that the greatest facilitating effects of racial mixing occur in schools that are truly integrated (interracial acceptance and friendships) rather than merely desegregated (Pettigrew, 1968). The current experiment suggests a possible interpretation of these findings. In totally segregated schools there might be a general lack of academically highly successful models, and in schools that are merely desegregated black students would be unlikely to form higher expectations for their own performance from observing white students perceived as considerably different from themselves. But in a truly integrated school successful student models would be available, and their race would be much less important as a basis for social comparison. Of course, the effects of such social comparisons on modeled expectancies are only a small part of the variety of complex influences of desegregation on performance.

The results also imply that, at least from a modeling point of view, the "stratified heterogeneous grouping" suggested by Findley (1973) might be beneficial. In Findley's grouping scheme classes are constructed so that each class contains a greater spread of abilities than would normally be found in a homogeneously grouped class, but not as wide a spread as in randomly assigned classes. Thus, in each class relatively bright and successful models would be available, but the range of ability would be sufficiently limited that these students could still be perceived as true peers by the less able students. In order for the desirable modeling effects to occur there must be successful students present, and these successful students must be recognized as true peers by the other students.

A variety of factors may have contributed to the failure to observe a significant effect on either expected or actual scores in any of the other three groups. For example, black females, as opposed to black males, may be less likely to use race as an important dimension in assessing degree of similarity. Or the particular black female model used in this experiment, because of some aspect of her dress or grooming unrecognized by the experimenter, might not have been perceived as a true peer by a number of the black female subjects. White students may have been less affected because, unlike some of the blacks, they approached the task with the assumption that members of their race could succeed, regardless of how the models on the tape performed. It must also be noted, however, that the statistical tests were less powerful for the white students because of the smaller sample sizes available.

Further research is clearly needed to clarify the sex differences and to investigate what dimensions of model and observer similarity in addition to race might be important in vicariously learning success expectations. Studies comparing the strength of the modeling effect in desegregated and integrated schools would also be helpful. The current experiment was limited to the positive aspects of viewing success, and further study is needed to investigate the possibly very damaging experience of viewing the failure of a true peer.

Table 1
Cell N's, Means, Standard Deviations, and F-Ratios for the Four Planned Comparisons on Both Dependent Variables

Group	Race of Successful Model	N	Expected Score $\bar{X}$	S.D.	F^+	Actual Score $\bar{X}$	S.D.	F^+
Black Males	Black	38	15.00	4.4	4.81*	11.63	3.3	4.43*
	White	42	12.86	4.0		10.14	2.9	
Black Females	Black	43	14.74	4.3	<1	10.95	3.2	<1
	White	45	14.02	4.2		10.33	3.2	
White Males	Black	29	14.03	4.2	1.14	10.17	3.3	3.75
	White	28	12.82	4.6		11.82	3.5	
White Females	Black	24	13.21	4.0	<1	11.58	3.9	<1
	White	25	12.44	5.0		11.00	2.3	

$^+$F's are for planned comparisons with df=1/266. Mean square error for expected scores = 18.81; Mean square error for actual scores = 10.34.
*$p < .05$

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