

SEX OF TEACHER AND STUDENT READING ACHIEVEMENT¹

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Previous research has demonstrated that boys' reading performance is worse than girls' during the elementary years and it has been hypothesized that boys would benefit from instruction by a male teacher. The present research investigated, in two experiments, the effects of sex of teacher on fifth-grade-student reading achievement. Results indicated superior reading performance by girls. There was no significant effect of sex of teacher on male or female reading performance. It is suggested that further studies experimentally vary elements of classroom environment relevant to sex-role standards rather than assume these elements to be correlated with sex of teacher.

Research with American elementary school children has consistently found that boys lag behind girls in reading performance. Standardized achievement tests taken during the early elementary years typically indicate significant sex differences favoring girls (Gates, 1961; Stroud & Lindquist, 1942), and surveys of remedial reading programs generally find that approximately 70% of remedial reading referrals are boys (Blom, 1971). One explanation of boys' inferior reading focuses on the interaction between sex-role standards and school culture. It has been suggested that there is a conflict between appropriate male sex-role behavior and the behavioral expectations of schools (Grambs & Waetjen, 1966; Kagan, 1964). Boys, taught by parents to be assertive and autonomous, are confronted with a school situation that reinforces obedience and passivity. It is argued that these school qualities are more congruent with a traditional female than a traditional male sex role with the result that boys are less likely to be successful in school environments.

One study that provides evidence that

school is perceived as "feminine" was carried out by Kagan (1964). He paired nonsense symbols with female-related and male-related objects. After children learned the meaning of each of the symbols, they were shown pictures of school-related items such as a book, blackboard, teacher, etc. and were asked to name each picture with one of the nonsense syllables. Results indicated that boys and girls more often applied the female than male nonsense syllable to school-related objects. Stein and Smithells (1969) obtained similar results in a more recent study.

One variable that has been suggested to account for the "feminization" of schools is the predominance of female teachers (Austin, Clark, & Fitchett, 1971; Ayres, 1909; Sears & Feldman, 1966). A National Education Association (1966) survey indicated that 86% of elementary teachers are female, and the percentage of females is even higher in the early elementary years in which reading is taught. It has been argued that increasing the number of male teachers would "masculinize" school culture, thereby overcoming the reading problems of boys (e.g., Austin et al., 1971; Grambs & Waetjen, 1966; Peltier, 1968).

Despite the prevalence of this viewpoint it has not been adequately tested. Shindling and Pedersen (1970) found evidence of higher reading achievement of boys with male versus female fourth-grade teachers; however, a number of problems cast doubt

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on the validity of the findings. The teacher sample (four male and four female teachers) was selected by the school district curriculum supervisor, the sample size was small, and the reading difference between boys with male and with female teachers was significant only when reading subtest scores were pooled. A more elaborate and better controlled study by Clapp (1967) examined the reading achievement of boys and girls with 19 male and 30 female fifth-grade teachers. No evidence was found of superior reading due to instruction by a male teacher.

The present research was conducted to explore, further, possible effects of sex of teacher on student reading performance. Achievement test data were gathered to assess the impact of fifth-grade teacher sex on male and female reading performance. This grade level was chosen since it afforded the largest possible sample of male teachers at the earliest possible grade level. Two experiments were conducted; in both, fifth-grade achievement test data served as a pretest measure and sixth-grade data served as a posttest measure. In order to examine possible biases in the assignment of students to male and female teachers, pretest data are presented first. Next, gain scores between fifth and sixth grade are presented to analyze for growth in reading as a function of sex of teacher.

EXPERIMENT I

Method

Sample. Subjects were drawn from a single mid-western school district. Of 34 elementary schools in 1968, 10 had a male teacher in the fifth grade. Achievement test data from students of these teachers were gathered. For comparison purposes, data were gathered for students who had female teachers at the same grade level in the same schools where the males taught. The total sample consisted of 534 students.

Measure. The Iowa Test of Basic Skills reading comprehension score served as a pretest measure. This test had been administered by the school district to students in September 1968. The same test, administered by the school district in September 1969, served as a posttest measure.

Results

Inspection of the pretest reading data, expressed in grade-equivalent scores (see

TABLE 1
READING COMPREHENSION EXPRESSED AS GRADE
EQUIVALENT SCORES, EXPERIMENT I

Sex of student	Sex of teacher							
	Pretest				Gain			
	Male		Female		Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Boy	5.12	1.52	4.90	1.45	.71	.94	.91	.85
Girl	5.62	1.34	5.36	1.33	.89	.89	.84	.84

Table 1), reveals the familiar pattern of superior reading among females. The average difference between boys and girls in reading comprehension is nearly one-half of a grade-equivalent score. This difference is statistically significant ($F = 14.57$, $df = 1/530$, $p < .01$). Also indicated is a difference in reading scores of students assigned to male versus female teachers. Among boys and girls there was a tendency to assign higher achieving students to male teachers. This difference approached but did not reach statistical significance at the .05 level ($F = 3.79$, $df = 1/530$, $p < .10$). The interaction of sex of student and sex of assigned teacher was not significant.

Gain scores between the fifth- and sixth-grade individual achievement test results are presented in Table 1. Boys and girls did not significantly differ in amount of gain ($F = .44$, $df = 1/530$). There was no difference in the gain made by students with male versus female teachers ($F = 1.02$, $df = 1/530$). Finally, the interaction of sex of teacher and sex of the student was not significant ($F = 2.55$, $df = 1/530$). Instruction by a male or female teacher did not affect the reading performance of boys and girls.

Change scores like those used in the preceding analysis tend to be unreliable (Lord, 1963; Stake, 1971). Accordingly, the pretest and posttest data were analyzed in two additional ways. First, a repeated-measures analysis of variance was performed with the factors teacher sex, student sex, and year of testing. No significant interactions among these factors were found. Second, an analysis of covariance was performed

using the sixth-grade score as the dependent measure and the fifth-grade score as the covariate. No interaction between teacher sex and student sex was found. Thus, regardless of the method of analysis, results indicate no significant difference between males and females in their effectiveness in teaching boys and girls to read.

EXPERIMENT II

Method

To determine the stability of these findings a second study was conducted on the effects of sex of teacher on student reading. Achievement data were analyzed from the same school system one year later. Reading scores from 1969 and 1970 served as pretest and posttest measures. An increase in the number of fifth-grade male teachers in the school system to 13 resulted in a larger student sample size ($N = 712$). Otherwise the second study was a replication of the first.

Results

Pretest data of reading comprehension (see Table 2) indicate superior reading achievement among girls ($F = 18.28$, $df = 1/708$, $p < .01$). As in Experiment I there was a trend toward the assignment of higher achieving students to male teachers, but the difference was not significant ($F = 2.19$, $df = 1/708$). This assignment difference was greater for female than male students; however, the resulting Sex of Teacher \times Sex of Student interaction was not significant at the .05 level ($F = 3.30$, $df = 1/708$, $p < .10$).

Table 2 presents gain scores in reading comprehension as a function of sex of teacher. Boys and girls did not differ in

achievement gain ($F = .18$, $df = 1/708$). Nor did students improve more with a male or female teacher ($F = .33$, $df = 1/708$). Finally, the Sex of Teacher \times Sex of Student interaction was not significant ($F = 2.12$, $df = 1/708$).

These data were also analyzed using repeated-measures and analysis of covariance procedures. Neither analysis indicated a significant interaction between sex of student and teacher. Thus this study, like the previous one, did not indicate greater effectiveness of male teachers with boys.

DISCUSSION

Results from the present research demonstrate once again relatively poor reading achievement among boys. In both studies, large and statistically significant sex differences were found. There was no evidence in either experiment, however, that sex of teacher was a significant factor in student reading performance. These results cast doubt on the validity of the hypothesis that increasing the representation of elementary male teachers would result in an improvement of boys' reading.

Before discarding the hypothesis, however, one limitation of the present research deserves consideration. It is possible that instruction by a male teacher in the fifth grade provided a weak test of the hypothesis that sex of teacher influences student reading. In so far as reading skills are typically emphasized and developed during the first few years of schooling, an earlier intervention of male teachers may be more powerful. Research is needed on the effects of instruction by a male or female teacher on kindergarten or first-grade children.

Although a stronger test of the hypothesis would be valuable, there is reason to believe that an earlier intervention per se would have little effect on reading. Norms regarding appropriate teacher behaviors may lead male and female teachers to have similar styles. Do males and females differ in their choice of reading materials, physical organization of the classroom, or mode of presentation of material? If they do not differ in their instructional procedures, then educational outcomes probably will not differ.

TABLE 2
READING COMPREHENSION EXPRESSED AS GRADE EQUIVALENT SCORES, EXPERIMENT II

Sex of student	Sex of teacher							
	Pretest				Gain			
	Male		Female		Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Boy	4.93	1.45	4.96	1.40	.98	.90	.86	1.11
Girl	5.60	1.45	5.23	1.44	.86	1.01	.96	.88

This suggests that employing more male teachers without altering the educational environment is unlikely to be effective with boys. Further research should vary selected features of the classroom environment thought to be relevant to the performance of girls and boys rather than assume these variables to be correlated with sex of teacher. For example, one variable that may be relevant to the poor reading performance of boys is the interest value of reading content. Asher and Markell (1973) found that boys achieved higher reading comprehension scores on high-interest material. A related variable is the sex appropriateness of the academic task. Stein, Pohly, and Mueller (1971) found that boys worked longer, achieved more, and expected more success on tasks identified as "boys' tasks." Increasing the interest level and sex appropriateness of reading materials for boys should be effective whether the teacher is male or female.

A secondary finding of the present research also deserves further examination. Male teachers in both studies were assigned higher achieving students. In neither study did this effect reach significance. However, the direction was consistent with an earlier report of significantly higher pretest reading scores of students assigned to male teachers (Clapp, 1967). It has been observed that having "bright" students is a status variable among teachers (Havighurst & Neugarten, 1957). Perhaps during the assignment of students to teachers the male teacher is given favor by his principal. Although the majority of elementary teachers are female, elementary principals are typically male (National Education Association, 1966).

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