DOCUMENT RESUME

ED 033 000 RE 001 877

By-Stanchfield, Jo M.

Differences in Learning Patterns of Boys and Girls.

Pub Date May 69

Note-16p.; Paper presented at the International Reading Association conference, Kansas City, Mo., Apr. 30-May 3, 1969.

EDRS Price MF-$0.25 HC-$0.90

Descriptors-*Beginning Reading, Grade 1, *Grouping (Instructional Purposes), *Learning Characteristics, Learning Motivation, Reading Ability, Reading Achievement, Reading Development, Reading Interests, *Reading Materials, Reading Readiness, *Sex Differences

A 6-year research project which investigated sex differences in beginning reading in the Los Angeles City Schools is reported. In 1962-63 approximately 550 first-grade children were taught reading in sex-segregated groups. It was found that boys grouped together did not gain significantly more than those in heterogeneous sex groups and that girls' overall achievement was significantly better than boys'. Teachers observed the following eight basic areas of differences in the learning patterns of boys and girls: personality style, activity levels, verbal facility, auditory discrimination, listening skills, attention span, goals and motivations, and interests. In 1963-64 and 1964-65, an experimental reader written to capture boys' interests was compared with the state adopted basal series as to the effects on boys' reading achievement; significant differences favored the experimental group. During 1965-67 a set of basal readers for grades 1 through 3 containing adventurous stories geared to the interests of boys was developed and tested with significant results. Materials for reading readiness and basal readers for grades 4 through 6 are currently being developed and tested. References are included. (CM)

Dr. Jo M. Stanchfield
Professor of Education
Occidental College
1600 Campus Road
Los Angeles, Calif. 90041

DIFFERENCES IN LEARNING PATTERNS OF BOYS AND GIRLS

The teaching of reading is a major concern of educators today. The statistics from many schools indicate that boys have more difficulty than girls in learning to read. In fact, large school systems report that, at the upper elementary level, the boys make up 75% to 80% of all reading disability. Enrollment figures from reading clinics show that boys compose over 85% of the students in classes for reading improvement.

PAST RESEARCH

Because the poor reading achievement of many elementary-school boys has been of growing concern to educators, there have been many studies designed to investigate this disparity in the reading ability of boys and girls. As early as the 1930s, Charles St. John tested approximately one thousand pupils in grades one through four and found no significant

sex differences in measured intelligence. Nevertheless, he reported that girls markedly excelled boys in reading in the first four grades, and that boys showed 7% more nonpromotions than girls. (9)

Wilson, Burke, and Fleming made a three-year study of the Horace Mann School in New York City. They found no differences in mental tests among boys and girls in the first grade. Yet in reading at the second grade level "the average of chances was 88 in 100 that the girls would be superior." (11)

During the 1940s, one of the largest research projects on sex differences in school achievement was conducted by Stroud and Lindquist with 50,000 pupils in more than 300 schools in Iowa. With the Iowa Every-Pupil Basic Skills Test, students in grades three through eight were tested on reading comprehension, vocabulary, word-study skills, basic language skills, and arithmetic skills. The researchers stated that "girls have maintained a consistent, and on the whole, significant superiority over boys in the subjects tested, save arithmetic, where small insignificant differences favor boys. (10)

In the area of beginning reading, Sister Mary Nila tested 300 first graders on a number of individual and group tests during the first weeks of school in 1952. As a result of these tests, she determined that the boys as a group and the girls as group were equally ready to read. These children were tested at the end of the school year for reading achievement. By that time the girls significantly exceeded the boys in both reading growth and achievements. (4)

In May, 1961, in the Elementary School Journal, Arthur Gates published his findings about sex differences in reading ability. He analyzed the reading test scores of 6,646 boys and 6,468 girls in grades

two through eight. The participants in the study were approximately typical in intelligence, scholastic aptitude, and other pertinent factors. The results showed that the scores of the girls were significantiy higher than those of the boys at all grade levels. Gates felt that the poorer showing by the boys on the tests indicated an environmental rather than a hereditary explanation. Perhaps more girls than boys experienced life situations in which there were greater opportunities, incentives, and respect for reading. Because of different role conceptions in our culture, the boys may have failed to be motivated by a feeling of the importance of the reading act. Perhaps, too, they were less interested in the school routines and materials of instruction than were the girls.

In this same vein, Powell reported that boys in our society are taught to view feminine pursuits with disdain and many boys perceive reading in a similar manner. Then reading becomes inappropriate for them. "Our cultural heritage encourages boys to seek out roles which exemplify that mythical 'All-American Boy'--and that role does not emphasize reading in the idealized model."(5)

In considering factors which affect success in reading, Helen M. Robinson stated that there is strong evidence, supported by research, of sex differences in reading achievement in the elementary school. She, like others, questioned the causes of this disparity in reading ability. According to Robinson, "At present it is not clear whether just being a girl gives a child a better chance for early reading success or whether something inherent in the school situation or the social setting militates against the progress of boys."(7)

CURRENT RESEARCH

Homogeneous Sex Groupings in Beginning Reading

In the school year 1962-63 the research being reported in this article investigated the problem of whether the achievement of boys in beginning reading would be affected by a grouping procedure in which the groups were composed entirely of boys. Approximately 550 children in the first grades in the Los Angeles City Schools were taught reading in sex-segregated groups. The schools chosen provided a cross section of socio-economic levels, ranging from lower-class to upper-middle class. Eight pairs of first-grade classes were used. In one member of each of the eight pairs, the composition of the classes was arranged so that three-fourths of the boys were enrolled in one class with one-fourth of the girls. The alternate member of the pair contained three-fourths of the girls and the remaining one-fourth of the boys.

The reading lessons for these classes were arranged in the following way: One reading period was scheduled in the morning between 9:00 and 10:00, and one in the afternoon between 2:00 and 3:00. In four of the classes containing a majority of boys (from a total of eight classes), the teachers taught reading to groups of all boys in the morning and to mixed boy-girl groups in the afternoon. In the remaining four classes, the teachers taught reading to groups of all boys in the afternoon and to mixed boy-girl groups in the morning. This same procedure was carried out in the classes containing a majority of girls.

At the beginning of the school year, the children in the study were given the Harsch and Soberg Survey Test of Primary Reading Development, Form A. An intelligence quotient was determined for each child through

the use of the Detroit Beginning Primary Test. Further, the teachers collected reading readiness data with a readiness checklist, and home and family background information with a sociological data sheet. An alternate form of the Harsch and Soberg Test was administered in June at the end of the second semester.

With the data from these tests, an analysis of variance was done for each of the post-test scores and the total post-test with no significant "F" ratios to be found in reading achievement at the end of the first grade. The difference between the total post-test scores and the pre-test scores (reading growth) was treated with an analysis of variance, and again no significant results were found. These statistical analyses of reading achievement and of reading growth did not show that boys taught alone gained significantly more in achievement or in growth than did the boys taught in heterogeneous sex groupings.

As a group, the girls achieved significantly more than the boys on the post-test. The mean for the girls was 55.9, and that of the boys, 49.2. This showed a significant difference of 6.7 in the reading achievement of the girls.

Moreover, the girls demonstrated significantly greater reading growth than the boys (growth being measured as the difference between the pre-test and the post-test scores). The means for the girls on the pre-test was 23 and for the boys 20.7, a difference of 2.3. The means on the post-test were 55.9 for the girls and 49.2 for the boys, a difference of 6.7. It appeared that during this first year of learning to read the gap between the boys and girls had widened considerably. The analysis of the data demonstrated conclusively that the girls not only

achieve more by the end of the first year, but that girls actually have a greater growth in reading during this highly important first grade.

Although the main effect of the research showed that boys did not learn to read better in sex-segregated groups, the teachers readily admitted in a series of individual interviews that they had found basic areas of difference in the learning patterns of boys and girls. These differences from teacher observations in all-boy and all-girl groups were summarized in eight areas.

Personality Style

In observing boys in the research classes, teachers identified four areas of difference in the personalities of boys and girls which have implications for the teaching-learning process.

Boys were found to be more aggressive and less conforming in the school situation. This comparison of agressive behavior of the boys versus the conforming, "nice" behavioral responses of girls was underscored by Kohlberg(2) who suggested that "niceness" is a very important value to school-age girls, connoting nonaggression, interpersonal conformity, restraint, and nurturance or helpfulness. Because aggression has been considered a major component of "badness" by many teachers, it was not surprising that Pauline Sears and David Feldman(8) in the National Elementary Principal reported that boys received significantly more disapproval or blame than girls. Further, teachers criticizing a boy were more likely to use a harsh or angry tone, while criticisms of girls were generally conveyed in a normal tone.

Boys appeared to have a lower frustration level for boredom than girls and were less able to attend and tolerate the monotony of regular classroom routines. When the boys were bored, they became discipline

problems. In groups of all boys, teachers reported that they had to "keep on their toes" to make the lessons varied and exciting in order to capture and hold the imagination of the boys.

In the terminology of Riesman, (6) teachers stated that boys tended to be more "inner-directed" than "other-directed." Boys were more concerned with learning to read to find out something they wanted to know or to do something which interested them. Girls, on the other hand, were desirous of learning to read to please the teacher, their parents, other relatives, or friends.

The fourth area of observed personality difference was that of the ability to adapt easily and quickly to new situations. Teachers referred to this behavior as part of an "adaptive syndrone." They discovered that boys demonstrated more difficulty than girls in coping with changes in the learning process and adapting to new stimuli. Girls adjusted with greater ease, speed, and flexibility to a great variety of new situations. Teachers hypothesized that because of this difference, boys might prefer stories in a series with the security that comes from characters that are known and enjoyed.

Activity Levels

The teachers, when describing their teaching in groups of all boys, made such statements as these: "Boys are so overwhelmingly active, so frighteningly energetic, so tremendously vigorous, so utterly strenuous, so terribly physical." "It's so hard for a six-year-old boy to keep himself occupied with reading a book." "Boys tend to wiggle, twist, push, turn, shove, and in general bother each other instead of reading."

"Boys are more 'twitchy' than girls." "Girls are so quiet and controlled--they can sit quietly and read a book." "Girls are easier to teach-- so ladylike and easy to handle." The differences in the activity levels and behavior patterns of six-year-old boys and girls were very evident to the teachers in the study. Teachers found that boys needed much behavioral involvement in learning and many specific physical responses in an active learning environment.

Verbal Facility

The teachers in the all-boy groups were amazed to find out that boys verbalized so poorly, speaking in incomplete and fragmentary sentences. The boys were not as fluent as the girls; they had more difficulty in speaking clearly and easily. The teachers reported that having the girls present in the class had given them the erroneous impression that the boys were speaking and participating as much as the girls.

Auditory Discrimination

The boys' inadequacies in articulation, enunciation, and pronunciation led to greater learning difficulties in phonetic analysis skills. Teachers reported that the boys had much more trouble than the girls in making auditory discriminations and hearing common phonetic elements. Many times it would take the boys eight or ten lessons to learn and recognize sounds that the girls could identify in three.

Listening Skills

In this area, the teachers declared that the boys were not as good "listeners" as girls. Boys appeared not to listen as intently and carefully as girls. This might perhaps be related to the greater difficulty the boys evidenced in hearing all the sounds and in making fine

discriminations. All of the teachers stated that the boys listened more effectively when they were keenly interested. They also tended to listen more intently when the teacher utilized more than one of the five senses.

Attention Span

The attention span of boys, in general, was found by the teachers to be shorter than that of the girls. The majority of the teachers expressed the viewpoint that the attention span of the boys varied between 12 and 15 minutes, while the girls could attend for 20 to 25 munutes. However, several teachers qualified this viewpoint with the statement that "It depends on the activity. Boys can pay attention for a long time if they're doing something active and dynamic, either mental or physical."

Goals and Motivations

The teachers in the research stated that the girls were easier to teach than the boys because the girls were eager to please the teacher, their parents, or some other adult figure. They were more quickly motivated by praise to work hard and do their best at a given task. Some of the teachers said that the boys could be more enthusiastic, more curious, and more tenacious than the girls in trying to solve a problem or learn something in which they were interested. Generally, the boys in the study were less anxious to please the teacher, less motivated to develop good work habits, less desirous of assuming responsibility, and less self-motivated in learning to read. Perhaps, as suggested by Gates in a study mentioned previously, the role concept of the boy in the culture has had less goal-direction for the reading act than for the girl and more motivation for physical involvement and activity.

In the area of attitudes and goals of boys about school, Patricia Minuchin--after working in a project at the Bank Street College of Education--declared that "boys were more resistant and negative about school and education, less concerned about achievement. Girls were more concerned with achievement and recognition, more positively identified with school, more apt to find the entire experience of school life comfortable, pleasant, and meaningful."(3)

Interests

The teachers of the all-boy groups contended that they found it difficult to interest boys in subject matter that did not have the appeal of the unusual and the dynamic. The instructor had to be really "on his toes" to utilize the boys' demand for action and excitement. Teachers of the all-girl groups reported the ease with which they could hold the interest of girls in a variety of subjects. This view has been supported by the interest studies of Lazar, Terman and Lima, Rankin, Thorndike, Norvell, and Stanchfield. These studies have shown that boys have special interests and do not like the so-called "girlish" books, but that the girls not only like their own special books, but also all of the so-called "boys" books.

CONTINUING EXPERIMENTATIONS

Materials of instruction

The second year of the study, designed to analyze the factors which affect boys' achievement in beginning reading, covered the school year 1963-64. This research was concerned with materials of instruction used to teach beginning reading, e.g. preprimers, primers, and first grade

readers. Materials especially written to capture boys' interest and attention were used with the experimental groups of boys and girls to note the effect on boys' reading achievement. The eight teachers in the experimental groups used a series of readers about an atomic submarine and the exciting adventures of a sailor named Jack, his pet parrot, Bluebell, and his friend Eddy, a little boy of six. The control groups used the basal series adopted as state texts in California.

The design for the research project was similar to the one described for the preceding year. To lessen the bias of the teacher factor, each teacher taught an experimental and a control group. This necessitated two reading periods a day, one in the morning between 9:00 and 10:00, and one in the afternoon between 2:00 and 3:00. To decrease the bias of the time factor, one-half of the experimental groups and one-half of the control groups were taught in the morning periods; and the remaining halves of the groups were instructed in reading in the afternoon.

As in the research project in the preceding year, the children in the study were given the Harsch and Soberg Survey Test of Primary Reading Development in September. The Detroit Beginning Primary Test was used to determine an I.Q. score for each child. The teachers also collected reading readiness data and sociological background information. An alternate form of Harsch and Soberg Test was given in June at the end of the school year to ascertain the reading achievement of the children and the reading growth, the difference between the pre-test and the post-test.

The statistical analysis of the data revealed that the boys in the experimental group achieved more in reading than the boys in the

control groups, but not significantly so. The mean for the experimental boys was 57.00 and the mean for the control boys was 54.6. The second analysis showed idential results with the growth scores. The mean for the experimental boys was 28.9; and for the control boys 21.5. The means were again in the expected direction but not significant.

Individual interviews with the teachers in the research indicated that the teachers enjoyed using the experimental readers which proved to be of high interest to boys, but that they considered them too difficult for beginning reading because of the rapid introduction of new words and the lack of sufficient repetition of the words. (The pre-primers, primers, and first grade readers had been specifically written for remedial instruction in the middle grades.) The teachers reported that they needed a variety of reading materials to supplement the boy-interest-oriented series and give added practice and reinforcement to the printed word. As a result of the teachers' suggestions, a workshop was conducted in the summer of 1964 to develop specific instructional materials for the third year of the research--1964-65.

CONTINUING RESEARCH

Use of a Variety of Materials of Instruction

The third year of research, 1964-65, continued to analyze the factors which affect boys' achievement in beginning reading. The study involved eight elementary schools, fourteen teachers, and approximately 500 children in the Los Angeles City Schools. As in the two previous years, these schools covered a broad range of socio-economic levels from

high middle class to lower class populations. The teachers continued to use a series of readers about an atomic submarine called the Shark and the exciting adventures of a sailor named Jack. In addition to the regular reading books, a variety of materials developed in the summer workshop in 1964 were added to the instructional program. These materials include the following items:

a. Prereading instructional aids to develop speaking and listening skills, such as flannel-board stories and puppets to develop specific speech sounds.

b. Individual flannel-boards and blackboards with appropriate follow-up material to involve children in active participation in speech and listening situations and to develop alphabetic sound-symbol correspondences.

c. Daily follow-up practice material, which the children use independently, to emphasize and give practice in the reading skills taught in the directed reading lesson with the readers.

d. Listening tapes for each story in the reading books with appropriate follow-up practice material, to give opportunity for rereading the stories in the reader as an independent activity and to develop skill in listening and following directions.

e. Colored slides with picture and context used by the teacher in a directed reading lesson or independently by the children, to give practice in the basic words in different stories and to vary the stimulus of the printed word.

f. Study prints, paralleling activities in the readers, to enable the teacher to develop the vocabulary of the readers in an auditory situation and to provide incentives for children to dictate their own stories in a reading-through-writing approach.

g. Short stories and "rewrites," using the basic vocabulary of the readers in new situations, to allow the child to read and illustrate.

RESULTS OF RESEARCH

During the school years 1965-67, the writer, in cooperation with teachers and principals in the public schools developed a set of basal readers, grades one through three, with teacher's manuals, and tested them in the Los Angeles City Schools with significant results. The most significant findings were: In every case--whether compared by ethnic grouping or by sex--the experimental groups using the new readers achieved more than the control groups using the state texts. The means for the experimental group were 48.89; and for the control 43.37; and that the boys in the experimental group (as well as the girls) scored higher than either boys or girls of the control group.

These readers contain imaginative, lively, adventurous stories geared to the interests of boys. The stories began in the fiftieth State, Hawaii, and proceeded to Alaska, the forty-ninth State. The books for grades two and three contain adventures in our national parks and monuments and give children a picture of the variety of terrain,

geological formations, and wild life from the West Coast through the Mid-West to the East Coast.

The names of the books for the first grade include Exploring Lands in the Sea, Book One, Book Two, Book Three, Book Four; and Exploring Lands in the North. The second and third-grade books are titled Exploring Forests and Mountains, Exploring Natural Wonders, Exploring Along Lakes and Rivers, and Exploring Lands Near the Ocean. These books are published by Century Consultants in Chicago. Manuscripts for the basal readers for grades 4, 5, and 6 are in process, and include lively, exciting adventures in Europe and Africa.

The teacher's manuals for the books contain a basic, sequential development of both comprehension skills and word analysis skills. The specific lesson plan for each story in the readers is interleafed with the pages of the book for greater ease and efficiency in use by the teacher. A comprehension skill and a word analysis skill are developed for each lesson with follow-up pupil practice materials. These materials, which reinforce the skills taught in the lesson, are designed to be done independently by the children.

Currently, reading readiness materials, developed in a sequential, structured program with aids for the teacher, are being tested in an experimental research program with approximately 1,600 kindergarten children in Southern California. In the series of readers, listening tapes are being prepared for each story in the books with appropriate follow-up exercises to be done independently by the children. Study prints, film strips, and reading games are being developed to be used with the readers as added reinforcers for the child who has difficulty in learning to read.

REFERENCES

1. Gates, Arthur J. "Sex Differences in Reading Ability," Elementary School Journal. 61:431-4, May, 1961.

2. Kohlberg, Lawrence. "A Cognitive-Developmental Analysis of Children's Sex-Role Concepts and Attitudes," The Development of Sex Differences, edited by Eleanor E. Macooby. Stanford University Press, Stanford, California, 1966. pp. 82-172.

3. Minuchin, Patricia P. "Sex Differences in Children: Research Findings in an Educational Context," The National Elementary Principal. November, 1966, pp. 45-48.

4. Nila, Sister Mary. "Foundations of a Successful Reading Program," Education. LXXIII, 1953, pp. 543-55.

5. Powell, William. "The Nature of Individual Differences," Perspectives in Reading: Organizing for Individual Differences. International Reading Association, 1967, pp. 1-17.

6. Riesman, David. The Lonely Crowd. Newhaven: Yale University Press, 1950, pp. 55-82.

7. Robinson, Helen M. "Factors Which Affect Success in Reading," Elementary School Journal. Iv, 1955, 266-69.

8. Sears, Pauline S. and Feldman, David H. "Teacher Interactions," The National Elementary Principal. November, 1966, pp. 30-35.

9. St. John, Charles. "The Maladjustment of Boys in Certain Elementary Grades," Educational Administration and Supervision. XVIII, 1932, pp. 659-72.

10. Stroud, J.B. and Lindquist, E.F. "Sex Differences in Achievement in the Elementary and Secondary Schools," Journal of Educational Psychology. XXXIII, 1942, pp. 657-67.

11. Wilson, Frank T; Burke, Agnes; and Fleming, C.E. "Sex Differences in Beginning Reading in a Progressive School," Journal of Educational Research. XXXII, 1939, pp. 570-82.