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ABSTRACT

The purpose of this investigation was to determine the effect on first-grade reading achievement of completing a program designed to teach the names of the letters of the alphabet before beginning formal reading instruction. Information was sought on the differential effect of this program on either boys or girls of different levels of intelligence, initial letter-name knowledge, and reading readiness. In addition, information was sought on the degree of relationship among the variables measured in the investigation. Selected for the sample were 424 first graders in 24 classrooms. Twelve of the classrooms were assigned to control treatment, a program which stressed listening activities. The other 12 classrooms were split between two experimental treatments using two published programs selected as being representative of two prevailing approaches to teaching letter names. Instruction in letter names resulted in superior letter-name knowledge for the experimental groups but not in greater vocabulary or comprehension reading achievement than that exhibited by the control groups. No significant differences were found between the achievement of boys and girls. References are included. (Author/NH)

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THE EFFECT OF TRAINING IN LETTER NAMES ON SUCCESS IN BEGINNING READING FOR CHILDREN OF DIFFERING ABILITIES

Statement of the Problem

The purpose of this investigation was to determine the effect on first grade reading achievement of completing a program designed to teach the names of the letters of the alphabet before beginning formal reading instruction. Information was sought on the differential effect of this program on either boys or girls of different levels of intelligence, initial letter name knowledge, and reading readiness. In addition, information was sought on the degree of relationship among the variables measured in this investigation.

Significance of the Study

There is ample research evidence reported in the literature to indicate that there is a substantial positive relationship between early letter name knowledge and later success in learning to read. Studies by Smith (1928), Wilson (1938-1942), Olson (1958), and Barrett (1966), among others, have demonstrated this positive relationship. The Cooperative Research Project national first grade studies found correlations between .52 and .60 between their measures of letter name knowledge and reading achievement.

Interpretations of this correlation vary. On the one hand, Barrett (1966, p. 464) who found a correlation of .59, cautiously makes the following statement:

> However, the strong showing of recognition of letters should not only be attributed to the apparent fact that better beginning readers could recognize more letters than poor readers, but also to the possibility that this ability may be a reflection of a rich experience with a variety of written materials which enable children to learn to recognize letters. Thus, it should not be inferred from this study that teaching children to recognize letters by name will necessarily ensure success in beginning reading. (Barrett, 1966, p. 464)

On the other hand, Chall concludes after her review of the literature, which included only one experimental study, that, "knowing the names of the letters before learning to read helps a child in the beginning stages of learning to read, whether he learns from an approach emphasizing code or meaning." (Chall, 1967, p. 149-150)

Summary of Design and Procedures

In order to answer the questions posed by this investigation, a sample of 424 first grade pupils in 24 classrooms was selected. Their readiness for reading was evaluated by the Murphy-Durrell Reading Readiness Analysis, the Lorge-Thorndike Intelligence Tests, and an informal test of letter name knowledge. Reading achievement at the end of the first semester of first grade was measured by the Gates-MacGinitie Reading Tests of Vocabulary and Comprehension. Other factors considered were chronological age, and the number of days absent.

Two published programs, selected as being representative of two prevailing approaches to teaching letter names, were designated the experimental treatments. A program which stressed listening activities

was designed as a control treatment. Six of the first grade classrooms were randomly assigned to each of the experimental treatments and twelve to the control treatment. Each treatment program was taught for 15 minutes each day for three weeks before formal reading instruction was begun. Letter name knowledge was measured before and after treatment, and reading achievement was measured at the end of the first semester of first grade.

The data were analyzed to obtain information concerning five major aspects of the study. Information was sought to determine: 1) the degree of relationship among the various measures employed, 2) whether or not boys and girls differed significantly in readiness for reading and/or in reading achievement at the end of the first semester of first grade, 3) whether or not the treatments had a differential effect on the letter name knowledge of the subjects, 4) whether or not the treatments had a differential effect on the reading achievement of the subjects at the end of the first semester of first grade, and 5) whether or not the treatments interacted with the child's sex and/or level of intelligence, letter name knowledge, or reading readiness to have a differential effect on his reading achievement.

Analysis of the relationships among the sixteen variables measured in this investigation was performed using the Pearson product-moment correlation. A correlation matrix was constructed to show intercorrelations among independent variables, dependent variables, and the correlations between each pair of independent and dependent variables. For all other aspects of the investigation, analysis of variance was used.

Findings

The findings of the investigation with respect to the five major aspects listed above may be summarized in the following manner:

Analysis of the Degree of Relationship Among the Variables Measured

The correlation matrix constructed, Table 1, demonstrates the following relationships:

1) The various measures of letter name knowledge showed the highest intercorrelations ranging from .79 to .98.

2) Chronological age and attendance showed virtually no relationship with any of the measures of reading readiness or reading achievement.

3) The best predictors of vocabulary reading achievement were: a) Murphy-Durrell Reading Readiness Analysis total score, r = .72, b) Kindergarten total letter name knowledge, r = .65, d) Kindergarten upper case letter name knowledge, r = .63, and e) Murphy Durrell Letters Test, r = .61.

4) The best predictors, among the independent variables, of reading comprehension achievement were: a) Murphy-Durrell Reading Readiness Analysis total score, r = .62, b) Kindergarten lower case letter name knowledge, r = .59, c) Kindergarten total letter name knowledge, r = .57, d) Murphy-Durrell Learning Rate Test, r = .54, and e) Kindergarten upper case letter name knowledge, r = .53.

Analysis of Homogeneity in Readiness Among the Treatment Groups

No significant differences were found among the treatment groups in their mean performance on any of the eleven independent variables

TABLE 1

COEFFICIENTS OF CORRELATION FOR THE VARIABLES

Variable		X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	Y_1	Y_2	Y_3	Y_4	Y_5
X_1	(C.A.)	1.00														
X_2	(I.Q.)	.13	1.00													
X_3	(K-Upper-case)	.03	.22	1.00												
X_4	(K-Lower-case)	.05	.26	.94	1.00											
X_5	(K-Total Let.)	.04	.25	.99	.98	1.00										
X_6	(M-D Phonemes)	.04	.28	.43	.46	.45	1.00									
X_7	(M-D Letters)	.01	.23	.86	.83	.86	.44	1.00								
X_8	(M-D Lrng Rate)	.04	.26	.50	.53	.52	.43	.50	1.00							
X_9	(M-D Total)	.03	.31	.79	.79	.80	.77	.88	.70	1.00						
X_{10}	(Absent/Train.)	-.08	-.03	.03	.02	.03	.02	.02	.00	.00	1.00					
X_{11}	(Absent/1st S.)	-.05	-.01	.03	.04	.03	.08	.06	-.06	.04	.43	1.00				
Y_1	(PT-Upper-case)	.01	.24	.85	.79	.83	.40	.88	.41	.78	-.02	.07	1.00			
Y_2	(PT-Lower-case)	.04	.26	.86	.84	.86	.43	.87	.45	.80	-.02	.07	.94	1.00		
Y_3	(PT-Total)	.03	.26	.86	.83	.86	.42	.88	.43	.79	-.02	.08	.98	.98	1.00	
Y_4	(G-M Vocab.)	.03	.33	.63	.66	.65	.58	.61	.53	.72	.05	.05	.60	.65	.62	1.00
Y_5	(G-M Comp.)	.05	.31	.53	.59	.57	.49	.50	.54	.62	.06	.03	.45	.52	.49	.79	1.00

under any of the blocking conditions.

When blocked on reading readiness, a significant interaction effect between treatment and block was found on the Murphy-Durrell Learning Rate Test.

Analysis of Homogeneity in Post Treatment Letter Name Knowledge Among The Treatment Groups

Significant differences favoring the experimental groups were found on all three post treatment measures of letter name knowledge.

When the groups were blocked on initial letter name knowledge, a significant interaction of treatment and blocks was found on all post treatment measures of letter name knowledge. Further analysis of these interactions suggests that their significance can be attributed to the superior performance of the lower levels in the experimental programs.

Analysis of Homogeneity in Readiness and Achievement Between Sexes

This aspect of the analysis resulted in the finding that, with the particular instruments employed in this investigation, the mean performance of boys and girls in general did not differ under any of the blocking conditions. The three exceptions to this generality are noted below:

1) Boys were significantly superior in mean intelligence raw score when blocked on either letter name knowledge or readiness level.

2) Girls were significantly superior to boys on the Murphy-Durrell Letters Test when blocked on intelligence.

3) Girls were significantly superior to boys on the Murphy-Durrell Reading Readiness Analysis, total score, when blocked on intelligence.

Analysis of Homogeneity in Reading Achievement of the Three Treatment Groups Blocked on Intelligence

No significant differences were found among the three treatment groups on the measures of reading achievement used in this study. No significant interactions were found in this phase of the study.

Analysis of Homogeneity in Reading Achievement of the Three Treatment Groups Blocked on Pretreatment Letter Name Knowledge

No significant differences among the three treatment groups on the measures of reading achievement were found. No significant interactions were found in this phase of the study.

Analysis of Homogeneity in Reading Achievement of the Three Treatment Groups Blocked on Reading Readiness

No significant differences on the measures of reading achievement were found among the three treatment groups. No significant interactions were found.

Conclusions

A number of conclusions can be drawn as a result of this investigation:

1) The degree of relationship between the various readiness

measures employed in this investigation and success in beginning reading ranged from the correlation coefficient of .31 between the Lorge-Thorndike Intelligence Tests raw score and the Gates-MacGinitie Reading Comprehension raw score to the correlation coefficient of .72 between the Murphy-Durrell Reading Readiness Analysis total raw score and the Gates-MacGinitie Vocabulary Reading test.

The best predictor of both vocabulary and comprehension reading achievement at the end of the first semester of first grade was the total score on the Murphy-Durrell Reading Readiness Analysis. This total score is the sum of the number of items correct on the Phonemes Test, The Letters Test, and the Learning Rate Test.

The kindergarten measure of lower case letter name knowledge followed closely as the second best predictor on both measures of reading achievement.

2) The boys and girls in this sample did not differ significantly in either vocabulary or comprehension at the end of the first semester of first grade. They were also similar with respect to letter name knowledge before and after treatment, performance on the Murphy-Durrell subtests of Letters and Learning Rate, chronological age, and attendance. However, the boys in this sample had a significantly higher mean raw score on the Lorge-Thorndike Intelligence Tests, while girls in this sample had significantly higher mean scores on the Murphy-Durrell Letters Test and the Murphy-Durrell total test.

3) Instruction in letter names as provided the two experimental groups during the three week training period resulted in superior letter name knowledge for the two experimental groups. One letter name training program was not superior to the other, but training in letter names is

superior to the control program when the desired result is increased letter name knowledge.

4) Instruction in letter names, as provided the two experimental groups during the three week training period did not result in vocabulary or comprehension reading achievement different from that of the control group at the end of the first semester of first grade. This was true for both boys and girls at any of the four levels of intelligence, initial letter name knowledge, or reading readiness.

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