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ABSTRACT

This study was initiated both to follow up an earlier investigation and to gather additional descriptive data regarding the relationship between the Prereading Skills Program and the Word Attack area of the "Wisconsin Design." Four Wisconsin schools participated. In this study, kindergarten students who had completed one year of instruction in the Prereading Skills Program were tested on six level-A and two level-B "Wisconsin Design" word attack skills. Test results indicated that students mastering all prereading skills could not be considered to have mastered level-A word attack skills. Students who mastered the three prereading visual skills mastered the "Wisconsin Design" word attack visual skills about 90 percent of the time; however, students who mastered the prereading sound skills mastered the "Wisconsin Design" sound skills only about 65 percent of the time. (Author)

Technical Report No. 342

PREREADING/WORD ATTACK FIT STUDY

by Robert Chester

Report from the Project on Conditions of
School Learning and Instructional Strategies

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I

INTRODUCTION

Data on the "fit" between the Prereading Skills Program and the Word Attack area of the Wisconsin Design were collected and analyzed in conjunction with the 1971-72 Prereading Skills Program field test. Results from the analysis, reported in Technical Memo QV-1-73, indicated a .76 probability that students who mastered at least four of the Prereading skills would test out of the Level A Word Attack skills. The data also revealed a probability of .88 that students who mastered all three Prereading visual skills would master the three Level A Word Attack visual skills. The probability was .56 that students mastering the two Prereading sound skills would also master the Level A Word Attack sound skills, but there was only a probability of .08 that they would master the two Level B Word Attack skills.

The present investigation was initiated both as a follow-up study to the earlier effort and to gather additional descriptive data regarding the relationship between the Prereading Skills Program and the Word Attack area of the Wisconsin Design.

II.

PROCEDURES

SUBJECTS

The population for this study consisted of kindergarten students enrolled in the Prereading Skills Program at the following selected schools: Bowler and McKinley Elementary Schools in Appleton, Wisconsin; Todd Elementary in Beloit, Wisconsin; and Wilson Elementary in Janesville, Wisconsin. The schools participated in the study on a volunteer basis. All were using the Prereading Skills Program in their kindergartens and the Word Attack area of the Wisconsin Design in their first grades.

INSTRUMENTS

Prereading Skills Program

The Prereading Skills Program consisted of instruction and mastery testing for five skills. Three of these skills were designated as visual skills: attending to letter order, attending to letter orientation, and attending to word detail. The two remaining prereading skills were designated as sound skills: sound matching and sound blending. Each of the five skills was taught separately, followed by an individually administered mastery test. Consequently, some students may have received instruction in and developed mastery of only two or three skills by the end of the year, while others who learned more readily and required less instructional time may have mastered all five skills.

Wisconsin Design: Word Attack

Only the mastery tests from the Word Attack program, six tests from Level A and two from Level B, were utilized in this study. For purposes of analysis, three Level A skills--shapes, letters and numbers, and words and phrases--were designated as visual skills. The other three Level A skills--rhyming words, rhyming phrases, and initial consonants--were designated as sound skills. The two Level B skills--initial sounds and final sounds--were included in the battery because it was felt that they were related to the Prereading Skills Program.

METHOD

In May 1973, the battery of Word Attack tests described above was given to all students who had completed one year of instruction in the Prereading Skills Program in the four participating schools. Teachers administered the Word Attack tests in a group setting. During the year, students had been tested individually on each Prereading skill after they had completed instruction in that skill. Mastery scores of students' performances were then recorded. Test data from the four schools were sent for analysis to the Wisconsin Research and Development Center for Cognitive Learning.

ANALYSIS

Table 1 reports the number of students mastering skills in the Prereading Skills and Word Attack programs. It also reports the percentage of each school's total population that mastered specific numbers of skills. For example, the table shows that 86 percent of the Todd Elementary population and 40 percent of the Wilson Elementary population mastered all five Prereading skills. The last column in the table reports the averages across schools.

Even a brief review of Table 1 reveals that few comparisons of performance can be made because of the range and disparity in scores. In addition, although the table indicates the total number of skills mastered, it does not identify those skills. What the table probably does represent are the individual differences in pacing and instructional emphasis among the four schools. With regard to the Word Attack masters in particular, the data seem to reflect instances in which the Prereading skills were instructed through methods and activities that could be more readily applied to Word Attack skills. This may partially account for the fact that 58 percent of the students mastered five or more Word Attack skills even though they had not been given instruction in the Word Attack program.

Table 2 provides an opportunity for a more stringent analysis of the data regarding those portions of the Prereading and Word Attack programs that are directly comparable. For example, although 44 percent of the total population mastered all five Prereading skills (52 percent if Bowler Elementary, which neither taught nor tested Prereading skill 5, is excluded), only 27 percent of the population mastered all Level A Word Attack skills and only 15 percent mastered the Level B skills. This surface comparison suggests dissonance between the two programs. However, further examination of the data reveals that 76 percent of the population mastered all three Prereading visual skills (attending to letter order, attending to letter orientation, attending to word detail) and 66 percent mastered the Word Attack visual skills (shapes, letters and numbers, words and phrases). In addition, 56 percent of the students mastered all of both the Prereading visual skills and the Word Attack visual skills. This suggests, at least concerning visual skills, that the differences between the two programs are not as great as the first comparison might imply.

Unfortunately, the compatibility of the two programs is attenuated by the students' poor performance on the Word Attack sound skills. Only 29 percent of the students mastered all Level A Word Attack sound skills (rhyming words, rhyming phrases, initial consonants) and only 22 percent mastered the Level B sound skills (initial sounds, final sounds). Conversely,

TABLE 1

NUMBERS AND PERCENTAGES OF STUDENTS MASTERING PREREADING AND WORD ATTACK SKILLS, WITHIN AND ACROSS SCHOOLS

Total No. of Skills Mastered	McKinley		Wilson		Bowler		Todd		Across Schools	
	No.	%	No.	%	No.	%	No.	%	No.	%
0 PR Skills	3	2	7	8.6	0	0	1	2.4	11	3
1 PR Skill	4	2.7	5	6.2	0	0	1	2.4	10	3
2 PR Skills	9	6	10	12.3	0	0	1	2.4	20	6
3 PR Skills	16	10.7	12	14.8	6	13.6	0	0	34	11
4 PR Skills	45	30	15	18.5	38	86.4	3	7.1	101	32
5 PR Skills	73	49	32	39.5	0	0	36	85.7	141	44
0 WA Skills	3	2	6	7.4	0	0	2	4.8	11	3
1 WA Skill	2	1.3	9	11.1	2	4.5	0	0	13	4
2 WA Skills	10	6.7	6	7.4	3	6.8	5	11.9	24	8
3 WA Skills	23	15.3	9	11.1	5	11.4	5	11.9	42	13
4 WA Skills	16	10.6	14	17.3	4	9.1	8	19.1	42	13
5 WA Skills	23	15.3	14	17.3	10	22.7	5	11.9	52	16
6 WA Skills	22	14.7	6	7.4	5	11.4	9	21.4	42	13
7 WA Skills	22	14.7	8	9.9	8	18.2	6	14.3	44	14
8 WA Skills	29	19.3	9	11.1	7	15.9	2	4.8	47	15

TABLE 2

MASTERY DATA BY SCHOOL AND ACROSS SCHOOLS EXPRESSED AS PERCENTAGES

	Schools				
	Wilson	McKinley	Todd	Bowler	Across Schools
Total population by school	81	150	42	44	
% population mastering all 5 Prereading skills	.40	.49	.86	.00	.44 .52 *
% population mastering all Design Level A tests	.17	.38	.10	.27	.27
% population mastering all Design Level A & B tests	.11	.19	.05	.16	.15
% population mastering Prereading visual skills	.58	.76	.93	.91	.76
% population mastering all Design visual skills	.60	.69	.57	.73	.66
% population mastering both Prereading and Design visual skills	.44	.59	.57	.68	.56
% population mastering all Prereading sound skills	.47	.55	.88	.00	.50 .58 *
% population mastering all Design Level A sound skills	.16	.41	.10	.30	.29
% population mastering both Prereading and Design Level A sound skills	.15	.25	.10	.00	.17
% population mastering Design Level B sound skills	.16	.23	.21	.32	.22
% population mastering both Prereading and Design Level B sound skills	.14	.20	.21	.00	.16

* Excluding Bowler population

50 percent of the total population (58 percent if Bowler is omitted) mastered both Prereading sound skills (sound matching, sound blending).

Possibly the most revealing comparison between the two sound programs is that which indicates that only 17 percent of the students mastered all of both Prereading and Level A Word Attack sound skills, and only 16 percent mastered all of both Prereading and Level B sound skills. This appears to suggest that little of the instruction in Prereading sound skills is applicable to the Word Attack sound skills being tested. In addition, since fewer students in both programs achieved mastery of the sound skills, these skills are probably more difficult than visual skills for kindergarten children.

A word of caution should be interjected here concerning the interpretation of the across-schools percentage scores in column 5 of Table 2. The fact that 76 percent of the total population mastered all Prereading visual skills must not obscure the other data indicating that 91 percent of the Bowler students mastered the skills while only 58 percent of the Wilson population achieved mastery. In addition, more than four times as many students at McKinley as at Todd mastered all Level A Word Attack sound skills. Differences between schools in pacing and instructional emphasis obviously have a major impact on mastery scores for the various skills in both programs.

One further analysis is relevant to this study. Table 3 reports the mastery of specific Word Attack skills by students who mastered all five Prereading skills. For comparative purposes, Table 3 also reports the percentage of the total population mastering all five Prereading skills and each Word Attack skill. It was found that 128 students, or 91 percent of the students who mastered the five Prereading skills, also mastered Word Attack skill 3 (shapes). These students, however, represent only 40 percent of the total population. Nevertheless, 91 percent of the students who mastered all Prereading skills also mastered all Word Attack visual skills. The fact that only 65 percent of those students mastering the five Prereading skills also mastered the Word Attack Level A sound skills and only 43 percent mastered the Level B sound skills again implies that the sound skills are more difficult.

TABLE 3

MASTERY IN SPECIFIC WORD ATTACK SKILLS OF STUDENTS WHO MASTERED ALL PREREADING SKILLS

Word Attack Skill	Students Mastering all 5 Prereading Skills		
	No.	%	% of [illegible] Population
[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	40
[illegible]	[illegible]	[illegible]	43
[illegible]	[illegible]	[illegible]	38
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

III

DISCUSSION

For a numb[redacted]easons, it is difficult to draw conclusions from studies such as this one. For example, although we know which Prereading skills were taught, we do not know how they were taught. The different emphasis put on skills and the different instructional techniques and activities may in part account for the wide disparity in scores both within schools and across schools. Although the Prereading visual skills proved to be less difficult than the sound skills (discounting possible differences within instructional programs), it is hard to understand why the difference in performance was 21 percent at McKinley and only 5 percent at Todd. If we speculate on differences in instructional emphasis and technique, these might help to account for other incongruent data, such as the finding that 35 percent more of the students at Todd than at Wilson mastered all Prereading visual skills.

Overall, only 56 percent of the population mastered both the Prereading and Word Attack visual skills. However, it is worth noting that 91 percent of the students who mastered all five Prereading skills also mastered the three Level A Word Attack visual skills. This is not surprising in light of the earlier study indicating a probability of .88 that students who mastered all Prereading visual skills would also master Word Attack visual skills. Similarly, the finding was anticipated that 65 percent of the students mastering all Prereading skills would also master the Level A Word Attack sound skills, since the earlier study reported a probability of .56 that students mastering Prereading sound skills would also master Level A Word Attack sound skills.

On the basis of this study, it appears that students who have mastered the Prereading visual skills have also mastered the visual skills measured by the Level A Word Attack tests. This assumption seems reasonable and should prove true 90 percent of the time. However, the same assumption cannot be made with regard to the Prereading and Word Attack sound skills. Teachers making this latter assumption would be in error more than one-third of the time.

In summary, the results of this study do not support the conjecture that students who have mastered all Prereading skills are able to master all Level A Word Attack skills. The results do suggest, however, that students mastering the Prereading visual skills will probably also master the Word Attack visual skills. The data also lead to speculation that instructional techniques and emphasis play an important role in determining how much of the information from the Prereading program may be applicable to the Word Attack skills.

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