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FALSE PREREQUISITES IN LEARNING TO READ

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Reading management systems, designed to facilitate planning and monitoring of individualized instruction, are based on the concept of prerequisite skills. For this investigation specific skills from the word-attack component of the *Wisconsin Design for Reading Skill Development* have been selected in order to investigate whether these skills are indeed prerequisite skills for competence in reading. If these skills are prerequisite skills, one should not find competent readers who lack them. (It is important to caution, however, that even if competent readers have certain skills, these skills are not necessarily prerequisite to reading competence. It is possible that competent readers acquired these skills after or as a concomitant to learning to read.)

Review of the Literature

Some of the tests on the *Wisconsin Design—Word Attack* (level C) are: Consonants and Their Variant Sounds, Two Vowels Together, and Final Vowel. Some of the tests at the D level are: Three Letter Consonant Blends, Syllabication, and Accent. The testing procedure for word attack skills makes extensive use of nonsense words or syllables.

The literature dealing with a specific skill such as consonants and their variant sounds or three letter consonant blends is sparse, but investigations regarding the teaching of grapheme-phoneme correspondences or the teaching of phonics are relevant. Research is generally supportive of the view that the teaching of grapheme-phoneme correspondences is valuable (Bishop, 1964; Chall, 1967; Diack, 1965; Gibson, Pick, & Osser, 1963; Mathews, 1966; Nevins, 1973; Samuels & Jeffrey, 1966; Towner & Dykstra, 1974). By extension, it can be concluded that the literature is generally supportive of the teaching of consonants and their variant sounds and of the teaching of three letter consonant blends.

In regard to the two vowels together generalization and the final vowel generalization, studies on the utility of phonic generalizations (Bailey, 1967; Clymer, 1963; Emans, 1967) should be considered. For the two vowels together generalization, the per cent of utility reported was as follows: Bailey, 76%; Clymer, 74%; Emans, 33%. The findings of the utility studies suggest that the two vowels together generalization should not be taught, and that the teaching of the final vowel generalization should be questioned.

The literature on syllabication generally supports the view that the teaching of syllabication (i.e., rules for dividing between syllables) is not valuable. The teaching of syllabication has been questioned by Glass

(1967); Groff (1968); Shuy (1968); and Wardhaugh (1966). Wardhaugh (1966) stated that exercises which insist that students decide where syllables really begin and end cannot be justified on linguistic grounds, although he pointed out that exercises which require students to say how many syllables a word has may have some value.

The teaching of accenting has a little support in the literature (Winkley, 1965), but this evidence is far too scant to suggest that the skill to recognize and place accent marks is essential for reading competence.

In regard to the use of nonsense words or syllables on tests of word-attack skills, investigations have shown that some children who could pronounce real words still had difficulty pronouncing nonsense words (Vellutino, Steger, & Kandel, 1972; Walmsley, 1975). These findings suggest that the scores on tests employing nonsense words should be interpreted with caution.

The question of false prerequisites in the teaching of reading has been investigated by McNeill (1974), who found the following skills to be false prerequisites: selecting words with affixes, distinguishing meaning of homographs, selecting similar sounds of r-controlled vowels, and possibly, selecting pairs of consonant variables. McNeill suggested that since his investigation treated only 15 of the “skills which a consensus regards as essential . . . it is likely that many more non-essentials are being taught in skill development programs” (p. 426).

Investigated in this paper is the validity of skills other than those treated by McNeill (1974).

Method 1

Sample. The sample consisted of 25 eighth-grade students who had scored at or above the 50th percentile on a standardized reading achievement test. These students attended an inner-city school located in an area of low socioeconomic level in Lancaster, a small city in southern Pennsylvania. The racial composition of the sample was mixed. Sample selection was done by the school principal, and all of the subjects were enrolled in a foreign language class, either Spanish or French.

Procedure. The students were tested by this investigator on five components of the *Wisconsin Design for Reading Skill Development—Word Attack*, levels C (approximately second grade level) and D (approximately third grade level). In this order, the students were administered the following tests: Three Letter Consonant Blends, Two Vowels Together, Final Vowel, Accent, and Syllabication. Tests were administered according to directions given in the manual.

The Three Letter Consonant Blends Test uses the following procedure: (1) The student is shown four combinations of letters, e.g., *sce*, *spr*, *scr*, and *scl*. (2) The test administrator pronounces twice a nonsense word like *screp*, which must be pronounced to rhyme with the real word *pep*. (3) The student selects the combination of letters that correspond to the first three letters in the nonsense word.

The two Vowels Together Test uses two procedures. For the first procedure: (1) The student is shown a nonsense word as *moav*. (2) The test

administrator pronounces *moav* to rhyme with the real word *save*. (3) The student then decides whether the nonsense word is pronounced “as the rule says it should be pronounced.” For the second procedure: (1) The student is shown a real word such as *because*. (2) The test administrator pronounces a word that may or may not be the word *because*. (3) The student decides whether the word was pronounced correctly.

The Final Vowel Test also uses two procedures. For the first procedure: (1) The student is shown a nonsense word like *vo*. (2) The test administrator pronounces the nonsense word to rhyme with the real word *to*. (3) The student then decides whether the nonsense word was pronounced as the rule says it should be pronounced. For the second procedure: (1) The student is shown a real word such as *go*. (2) The test administrator pronounces a word that may or may not be the word *go*. (3) The student then decides whether the word was pronounced correctly.

For the Accent Test, students were shown a word which was accented in two or three different ways (but only one way was correct), e.g., *bum' ble bee*, *bum ble' bee*, *bum ble bee'*. The students were directed to select the alternative they thought was right.

For the Syllabication Test students were shown a word which was syllabicated in several different ways (but only one way was correct). The students were directed to select the alternative they thought was right.

Results on the Three Letter Consonant Blends Test, all the students passed the criterion of 80%, with the mean score being 90%. This finding does not contradict the view that skill with three letter consonant blends is prerequisite to reading competence. (It should be remembered that the literature generally supports the teaching of grapheme-phoneme correspondences, and by extension, the teaching of three letter consonant blends.)

On the Two Vowels Together Test, all but one of the students passed the criterion of 80%; even though the directions for this test were somewhat misleading. This finding does not contradict the view that skill with the two vowels together generalization is prerequisite to reading competence. (It should be remembered, however, that the utility of phonic generalization studies suggest that this generalization should not be taught.)

On the Final Vowel Test, 60% of the students failed to meet the criterion of 80%, the mean being 74%. Furthermore, if the last third of the test, which uses real words, were omitted, 72% of the students would have failed to make the criterion passing score. In analyzing the data on the Final Vowel Test, it became apparent that most of the students made responses keyed as incorrect as a result of their experiences with real words. For example, many of the students decided that pronouncing *vo* to rhyme with the real word *to* was correct; yet, according to the answer key, that pronunciation was incorrect. These data provide some evidence that skill with the final vowel generalization, at least as tested by the *Wisconsin Design*, is not prerequisite to reading competence. (It should be remembered that the utility of phonic generalization studies suggest that the teaching of the final vowel generalization should be questioned.)

On the Accent Test, a surprising 68% of the students failed to meet the criterion of 80%, the mean score being 61%. These data suggest that skill in selecting correctly-accented words is not prerequisite to reading competence. (It should be remembered that the literature in this area is scant.)

On the Syllabication Test, all but one of the students passed the criterion of 80%, the mean score being 89%. These data do not contradict the view that skill in syllabication is prerequisite to reading competence. (However, the literature suggests that the teaching of syllabication [i.e., rules for dividing between syllables] is not of value.)

Method II

Sample. Two school districts that have been using the *Wisconsin Design for Reading Skill Development—Word Attack Skills* participated in a survey of the subskills in the Wisconsin model. Completed survey forms were received from 8 third-grade teachers, 7 fourth-grade teachers, and 6 fifth-grade teachers, a total of 21 teachers.

Procedure. Teachers were asked a number of questions about the children in their class who are competent readers (i.e., those children who would be able to score at approximately the 70th percentile or better on a standardized reading test). Eight subtests from levels C and D of the Word Attack Component of the *Wisconsin Design* were listed, and teachers were asked what per cent of their competent readers could pass each subtest. (See appendix for further details.)

Results. In Table I are reported the results of the survey of the 21 teachers regarding the ability of their competent readers to pass certain level C Word Attack Tests on the *Wisconsin Design*. Since level C skills are approximately second grade level skills, then third-, fourth-, and fifth-grade competent readers should have mastered these skills. Given testing error, one might expect 90-95% of these students to pass tests of level C skills. Considering the fact that a number of the teachers stated that their estimates were approximate, perhaps 85% would be an acceptable average for each grade level. Then, using an 85% criterion, too many third-graders, (but not fourth- or fifth-graders), failed the following tests: Long Vowel Sounds, Two Vowels, and Final Vowel. These data give a little support to the view that these skills may not be prerequisite to reading competence.

In Table 2 are reported the results of the survey of the 21 teachers regarding the ability of their competent readers to pass certain level D Word Attack Tests on the *Wisconsin Design*. Since level D skills are approximately third-grade level skills, then most of the third-grade, and all of the fourth-, and fifth-grade competent readers should have mastered these skills. Perhaps a criterion of 80% might be used for the third grade, and a criterion of 85% for fourth and fifth grades. Then, on the Three Letter Consonant Blends Test, the averages for all three grades were acceptable. On the Syllabication Test, the fifth-grade average was acceptable, but the third- and fourth-grade averages were not. On the Accent Test, none of the averages were acceptable. These data thus give some support to the view

that skill with three letter consonant blends may be prerequisite to reading competence. These data also contradict the view that skill in dividing words into syllables and in selecting correctly-accented words probably are prerequisite to reading competence.

Concluding Remarks

This paper presented evidence that at least some of the skills listed in the *Wisconsin Design for Reading Skill Development—Word Attack Skills* are probably not prerequisite skills for reading competence. Specifically, both the data from the study with eighth-graders and the survey of teachers suggest that skill with the final vowel generalization and with selecting correctly-accented words are not prerequisite skills. Additionally, the survey results provide a little evidence that some other skills may not be prerequisite to reading competence, namely the skills assessed by the following tests: Long Vowel Sounds, Two Vowels Together, and Silent Letters. The data from this investigation do not contradict the view that skill with consonants and their variant sounds and with three letter consonant blends may be prerequisite to reading competence.

The purpose of this paper has been to investigate the validity of the assumption that prerequisite skills to reading competence have been identified. Conclusions drawn here concern the Wisconsin model but probably will generalize to most other management systems. Since management systems have already been published and disseminated and are not likely to be extensively revised in the near future, school districts employing such systems will need to make some decisions regarding the validity of the various components. This paper offers some evidence to aid school districts to make some of these decisions.

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APPENDIX

SURVEY ON THE SUB-SKILLS OF THE:

WISCONSIN DESIGN FOR READING SKILL DEVELOPMENT

WORD ATTACK SKILLS - LEVELS C AND D

Name: _____ School: _____

Grade(s) You Teach: _____
 (If you are not a teacher, please indicate your title. _____)

Did you use the Wisconsin Design for Reading Skill Development last year? yes no _____

When answering the following questions, please consider ONLY those children who are competent readers. (Children classified as competent readers should be able to score at approximately the 70th percentile or better on a standardized reading test).

What % of the competent readers in your class could pass the following sub-test?

- | | | | | | | |
|--|-------------------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| (1) Level C-Test 2 Consonants and Their Variant Sounds | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (2) Level C-Test 4 Long Vowel Sounds | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (3) Level C-Test 10 Two Vowels Together | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (4) Level C-Test 11 Final Vowel | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (5) Level D-Test 2 Three Letter Consonant Blends | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (6) Level D-Test 3 Silent Letters | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (7) Level D-Test 4 Syllabication | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |
| (8) Level D-Test 5 Accent | fewer than 75% <u> </u> | 75-84% <u> </u> | 85-89% <u> </u> | 90-94% <u> </u> | 95-97% <u> </u> | 98-100% <u> </u> |

Would you like the results of this survey sent to you? yes no _____

USE REVERSE SIDE OF PAPER FOR ADDITIONAL COMMENTS.

Table 1

Results of Survey of 21 Teachers Regarding the Ability of Their Competent Readers to Pass Certain C-Level Word Attack Tests on the Wisconsin Design

| *Per Cent of Students Who Could Pass Test | Grade Taught by Teacher | | | |
|--|-------------------------|-----------|-----------|-------------------------|
| | 3 (n = 8) | 4 (n = 7) | 5 (n = 6) | |
| Consonants and Their Variant Sounds | | | | |
| **Less than 75% | 0 | 0 | 0 | 3rd-grade average=86.8% |
| 75-84% | 3 | 0 | 0 | |
| 85-89% | 2 | 3 | 3 | 4th-grade average=91.4% |
| 90-94% | 2 | 2 | 0 | |
| 95-97% | 1 | 1 | 3 | 5th-grade average=91.5% |
| 98-100% | 0 | 1 | 0 | |
| Long Vowel Sounds | | | | |
| Less than 75% | 1 | 0 | 0 | 3rd-grade average=83.1% |
| 75-84% | 4 | 0 | 0 | |
| 85-89% | 1 | 1 | 3 | 4th-grade average=93.4% |
| 90-94% | 1 | 3 | 0 | |
| 95-97% | 1 | 2 | 3 | 5th-grade average=91.5% |
| 98-100% | 0 | 1 | 0 | |
| Two Vowels Together | | | | |
| Less than 75% | 1 | 0 | 0 | 3rd-grade average=83.5% |
| 75-84% | 3 | 0 | 0 | |
| 85-89% | 2 | 1 | 0 | 4th-grade average=92.9% |
| 90-94% | 2 | 4 | 3 | |
| 95-97% | 0 | 1 | 3 | 5th-grade average=94.0% |
| 98-100% | 0 | 1 | 0 | |
| Final Vowel | | | | |
| Less than 75% | 2 | 0 | 0 | 3rd-grade average=82.3% |
| 75-84% | 2 | 1 | 0 | |
| 85-89% | 2 | 0 | 0 | 4th-grade average=91.9% |
| 90-94% | 2 | 4 | 3 | |
| 95-97% | 0 | 1 | 2 | 5th-grade average=94.5% |
| 98-100% | 0 | 1 | 1 | |

*There were 2 third-, 3 fourth-, and 2 fifth-grade teachers who stated that their estimates were approximate.

**In averaging the scores, the category "Less than 75%" counted as 70%.

Table 2

Results of Survey of 21 Teachers Regarding the Ability of Their Competent Readers to Pass Certain D-Level Word Attack Tests on the Wisconsin Design

| *Per Cent of Students Who Could Pass Test | Grade Taught by Teacher | | | |
|--|-------------------------|-----------|-----------|-------------------------|
| | 3 (n = 8) | 4 (n = 7) | 5 (n = 6) | |
| Three Letter Consonant Blends | | | | |
| **Less than 75% | 0 | 0 | 0 | 3rd-grade average=87.3% |
| 75-84% | 3 | 0 | 0 | |
| 85-89% | 2 | 1 | 3 | 4th-grade average=94.6% |
| 90-94% | 1 | 1 | 0 | |
| 95-97% | 2 | 4 | 3 | 5th-grade average=91.5% |
| 98-100% | 0 | 1 | 0 | |
| Silent Letters | | | | |
| Less than 75% | 3 | 0 | 0 | 3rd-grade average=78.6% |
| 75-84% | 3 | 0 | 0 | |
| 85-89% | 1 | 4 | 3 | 4th-grade average=89.7% |
| 90-94% | 1 | 2 | 1 | |
| 95-97% | 0 | 1 | 1 | 5th-grade average=91.3% |
| 98-100% | 0 | 0 | 1 | |
| Syllabication | | | | |
| Less than 75% | 5 | 4 | 0 | 3rd-grade average=74.6% |
| 75-84% | 2 | 2 | 2 | |
| 85-89% | 1 | 0 | 1 | 4th-grade average=76.6% |
| 90-94% | 0 | 0 | 2 | |
| 95-97% | 0 | 1 | 0 | 5th-grade average=88.3% |
| 98-100% | 0 | 0 | 1 | |
| Accent | | | | |
| Less than 75% | 5 | 5 | 1 | 3rd-grade average=73.8% |
| 75-84% | 3 | 1 | 1 | |
| 85-89% | 0 | 0 | 3 | 4th-grade average=74.6% |
| 90-94% | 0 | 1 | 1 | |
| 95-97% | 0 | 0 | 0 | 5th-grade average=83.8% |
| 98-100% | 0 | 0 | 0 | |

*There were 2 third-, 3 fourth-, and 2 fifth-grade teachers who stated that their estimates were approximate.

**In averaging the scores, the category "Less than 75%" counted as 70%.