A comparison was made of the effectiveness of two direct methods of vocabulary instruction with college freshmen in compulsory remedial reading classes. The two methods tested were a programed approach, "PDL Word Clues," and a more conventional approach using the dictionary with lessons patterned after the format used by H. C. Hardwick in "Words Are Important." During the 10-week study two teachers, each teaching both methods, provided similar amounts of vocabulary instruction to both the experimental (N=44) and control (N=46) groups. Results showed no significant differences between the two methods in promoting vocabulary growth among the students with above-average, average, or below-average abstract intelligence. It was suggested that a teacher might wish to consider factors such as student interest and class morale in deciding which method to use. Tables and references are included. (WH)
VOCABULARY IMPROVEMENT METHODS - COLLEGE LEVEL

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Purpose of the Study

The purpose of this study was to compare the effectiveness of two direct methods of vocabulary instruction with college freshmen in compulsory remedial reading classes. The two methods tested were a programed approach, EDL Word Clues (Taylor, et al., 1961), and a more conventional approach using the dictionary with lessons patterned after the format used by H. C. Hardwick in Words Are Important (1963).

Need for the Study

Vocabulary development has become the major target for programed materials in reading (Carner, 1964, p. 141). Yet, a review of the research done during the past 10 years revealed no studies dealing specifically with the effectiveness of programed instruction on vocabulary development in college remedial reading classes. This study contributes to the research in this area by comparing the effectiveness of a programed approach with a more conventional dictionary approach and by comparing the effectiveness of the two approaches with students who differ in sex and level of abstract intelligence.

The Approaches

In the programed approach (experimental group), the EDL materials were assigned on the instructional level of the students as indicated by scores
made on the Vocabulary Section of the California Reading Test, Advanced, Form W, the pre-test measure of vocabulary development (Tiegs and Clark, 1957). Most often, during each instructional session, one lesson was taught. Students followed the directions of the authors of EDL Word Clues in progressing through the materials. In addition, students wrote an original composition or sentences using the words studied.

Students taught vocabulary with lessons patterned after Hardwick's method (control group) studied the same words at each instructional level that were studied by the experimental group. Each lesson studied by this group consisted of three sections in which students (1) used a dictionary to study word meanings, (2) completed an exercise sheet using words studied, and (3) wrote compositions or sentences using as many of the words studied as possible.

The Subjects

The 90 students used in this study were freshmen enrolled in compulsory remedial reading classes at a Kentucky senior college. There were 46 students in the control group and 44 students in the experimental group. Standardized tests given at the beginning of the study revealed that 46 of the 90 students were below average in abstract intelligence, as measured by the Lorge-Thorndike Intelligence Test, Non-Verbal Battery, Level 5 (Lorge and Thorndike, 1957), and that all students were below average in initial level of vocabulary development, as measured by Form W of the California Reading Test, Advanced. Statistical analysis of the data revealed no significant differences between the two treatment groups on either level of abstract intelligence or beginning level of vocabulary development. According to student responses to an information sheet, both groups were similar in terms of age, educational
level of parents, types of occupation of parents, and size of communities in which the students lived.

**Procedures**

Classes met twice weekly in small groups of approximately 9 students each. During the 10 week study, two teachers, each teaching both methods, provided similar amounts of vocabulary instruction to both the experimental and control groups.

An experimental pre-test and post-test research design was utilized which, in combination with the selection procedures used, controlled for the potential sources of internal invalidity (Van Dalen, 1966, pp. 275-279).

A total of 15 comparisons of post-test vocabulary score means was made. The 3 major comparisons were concerned with the effectiveness of the 2 approaches (1) with total treatment groups, (2) with students average or above average in abstract intelligence (90 or above), and (3) with students below average in abstract intelligence (89 or below). The 12 remaining comparisons introduced the variable of sex in each of the major comparisons, both within and between treatments. The post-test vocabulary scores were obtained from the California Reading Test, Advanced, Form X (Tiegs and Clark, 1957).

Two statistical tests were used to analyze the data obtained from this study - (1) the t test of significance between independent means when there was no significant difference between comparison groups on pre-test vocabulary scores or on level of abstract intelligence and (2) analysis of covariance when there was a significant difference on either of these two variables.
Limitations

1. Only the two methods described earlier in this report were tested. Other types of programmed materials and other conventional approaches might have yielded different results.

2. The conclusions drawn were limited to the population tests and to similar populations since no attempt was made for a universal sampling of the college population.

Conclusions

The following conclusions were drawn relative to the effectiveness of the two direct methods of vocabulary instruction tested in this study:

1. There was no significant difference between the two methods in promoting vocabulary growth in college remedial reading classes as measured by the criterion instrument used (see Table 1). Neither was there any significant difference when the variable of sex was introduced in this comparison either within treatments or between treatments.

2. There was no significant difference between the two methods in promoting vocabulary growth in college remedial reading classes for subjects who ranked average or above average in abstract intelligence as measured by the criterion instrument used (see Table 2). Neither was there any significant difference when the variable of sex was introduced in this comparison either within or between treatments.

3. There was no significant difference between the two methods in promoting vocabulary growth in college remedial reading classes for subjects who ranked below average in abstract intelligence as measured by the criterion instrument used (see Table 3). Neither was there any significant difference when the variable of sex was introduced in this comparison either within or between treatments.
Discussion

The results of this study indicated that one method was as effective as the other in promoting vocabulary growth as measured by the criterion instrument used; therefore, in choosing between the two methods, a teacher might wish to consider other factors, such as interest, or class morale. To arrive at some estimate of the degree of interest the materials had for the subjects, an interest questionnaire, similar to the one used by Goldberg and Dawson (1964) was administered at the end of the instructional program. The data obtained from this questionnaire seemed to indicate that subjects had similar degrees of interest in the materials used and that class morale was generally high. It would seem, then, that neither method could be rejected on the basis of interest.

Although there were mean gains in each comparison made ranging from three months to one year and four months, all students did not gain. In fact, 13 of the control students and 11 of the experimental students failed to register gains. These students were fairly evenly distributed in terms of method used, sex, and level of abstract intelligence. Speculations relative to this point were:

1. Enough time may not have elapsed in order that students might be able to deal with the reciprocal effects of the words studied, with bases and affixes, and with the multiplicity of possible combinations of their use. A follow-up study over a longer period of time was recommended.

2. Standardized tests may not be the most valid method of measuring vocabulary growth at the college level since the universe from which the test items are drawn represents a great number of possible terms. It is difficult in an instructional program to adequately sample this universe at the college level. Perhaps, observation of pupil methods of word attack and pupil attitudes toward word study are as meaningful a measure of the outcomes of vocabulary training as are standardized tests.
Selected References

Carner, R. L. Programed learning and college reading - the state of the art. In J. Figurel (Ed.), Improvement of Reading Through Classroom Practice. Newark, Del.: International Reading Association, 1964, 9, 140-142.


TABLE 1
Post-Test Comparison of Control and Experimental Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Variance</th>
<th>df</th>
<th>t ratio</th>
</tr>
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<tr>
<td>Control</td>
<td>46</td>
<td>9.83</td>
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TABLE 2
Post-Test Comparison of Above Average Subjects

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<th>t ratio</th>
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<td>3.15</td>
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TABLE 3
Post-Test Comparison of Below Average Subjects

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