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GRADUATE COLLEGE

DEVELOPMENT AND STANDARDIZATION OF PARALLEL FORMS OF A SYLLABICATION SKILLS TEST

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LYNNA GEIS

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1975

DEVELOPMENT AND STANDARDIZATION OF PARALLEL FORMS

OF A SYLLABICATION SKILLS TEST

APPROVED BY

Robert L. Curry

Mary Clare Petty

O. J. Rupeper

Sam Shepherd

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TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS iv

LIST OF TABLES vii

Chapter

I. INTRODUCTION 1

Need for the Study 1
Statement of the Problem 4
Purpose of the Study 5
Operational Definitions 5
Related Literature 7

II. PROCEDURES AND RESULTS OF THE STUDY 12

Test Specifications 12
Procedures 12
Construction of the Tests 12
Pilot Study One 16
Pilot Study Two 20
Final Standardization and Results 24

III. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 32

Summary 32
Conclusions 33
Recommendations for Further Study 34

APPENDIX A 35

APPENDIX B 37

APPENDIX C 41

APPENDIX D 44

APPENDIX E 57

TABLE OF CONTENTS (Continued)

Page

APPENDIX F 59

BIBLIOGRAPHY 64

LIST OF TABLES

Table		Page
1	Concurrent Validity Coefficients of Syllabication Skills Test.	17
2	Alternate Form (Immediate) Reliability Coefficients of Syllabication Skills Test. . .	18
3	Internal Reliability Coefficients of Syllabication Skills Tests	18
4	Means, Standard Deviations and Standard Error of Measurements for Pilot Study One. . .	19
5	Concurrent Validity Coefficients of Syllabication Skills Tests	21
6	Alternate Form (Immediate) Reliability Coefficients of Syllabication Skills Tests . .	21
7	Internal Reliability Coefficients of Syllabication Skills Tests	22
8	Means, Standard Deviations and Standard Error of Measurements for Pilot Study Two.	22
9	Correlation Coefficients for A, A-1, B, B-1, C and C-1	24
10	Number of Test Items By Generalization	26
11	Concurrent Validity Coefficients of Syllabication Skills Test	28
12	Alternate Form (Immediate) Reliability Coefficients of Syllabication Skills Test. . .	28
13	Internal Reliability Coefficients of Syllabication Skills Tests.	29
14	Means, Standard Deviations and Standard Error of Measurements of the Final Syllabication Skills Tests	29

LIST OF TABLES (Continued)

Table		Page
15	Difficulty Index and Correlation of Test Items	30
16	Applicability of Syllabication Generalizations	36
17	Participating Institutions by Type and and Location	58
18	Generalizations Applicable by Test Items (Form A)	60
19	Generalizations Applicable by Test Items (Form B)	62

DEVELOPMENT AND STANDARDIZATION OF PARALLEL FORMS OF A SYLLABICATION SKILLS TEST

CHAPTER I

INTRODUCTION

Need for the Study

The ability to read is one of the most universal and useful skills which an individual may acquire. The ability to read is requisite to successful accomplishment in practically all areas of life, and many persons, otherwise capable, are unsuccessful and frustrated because they failed to learn to read adequately and efficiently. The ability to read is (1) an aid in meeting one's daily needs, (2) a tool of citizenship, (3) a pursuit for leisure time, (4) a tool to one's vocation, (5) a source of spiritual refreshment, and (6) an aid to enrichment of experience.[1]

The mastery of the skills that leads to recognition and to the meaning of words should not be left to chance or

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[1]Lillian Gray, Teaching Children to Read, 3rd ed. rev. (New York: Ronald Press Company, 1963), p. 4.

haphazard practice. Instruction in word recognition involves the use of context clues, phonics analysis, the dictionary, and structural analysis. "Objectives of word skills programs are twofold: to build a sight vocabulary and enable children to apply as many word skills as they need in order to identify unknown words efficiently."[1]

Structural clues aid in the pronunciation and understanding the meaning of words. Root words, affixes, accents and syllabication provide ways of breaking down unknown words. Heilman proposed three purposes for syllabication: "(1) pronouncing words not instantly recognized as sight words, (2) arriving at correct spelling of many words, and (3) breaking words at the end of a line of writing."[2]

Wallen, who used the term "structural signals" and explained that structural word attack utilizes two types of structural signals, roots and affixes, stressed the importance of meaning as related to structural analysis. He wrote, "The most important single characteristic of structural signals is that they contribute to the meaning of words."[3] Schnepf and Meyer attested to the importance of

---

[1]Robert Karlin, Teaching Elementary Reading: Principles and Strategies (New York: Harcourt Brace Jovanovich, Inc., 1971), pp. 142-143.

[2]Arthur W. Heilman, Phonics in Proper Perspective, 2nd ed. (Columbus: Charles E. Merrill Publishing Co., 1968), p. 77.

[3]Carl J. Wallen, Word Attack Skills in Reading (Columbus: Charles E. Merrill Publishing Company, 1969), p. 72.

combined techniques for word recognition. They wrote, "All programs must eventually include structural analysis and some use of content clues."[1] Spache considered syllabication functions as an aid to word recognition by helping the pupil break words into smaller units, pronounce these, blend, and thus recognize words in his auditory vocabulary. Syllabication helps pupils in spelling and writing. Most normal readers, as they mature in reading in intermediate and upper elementary grades, become increasingly dependent upon their knowledge of syllables and less upon letter phonics.[2]

The importance associated with the development of word analysis skills by college students who are prospective teachers was demonstrated in a research study reported by Austin and others, which indicated that:

> . . . many prospective teachers themselves do not know these techniques. Many of the current generation of college students were taught to read by methods which did not include structural and phonetic analysis and thus have never been exposed to them. If they are able to use a variety of approaches in their teaching, they should know the basic elements of these ways of unlocking words. Therefore, it is recommended: that college instructors take greater responsibility in making certain that their students have mastered the principles of phonetic and structural analysis.[3]

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[1]Virginia Schnepf and Odessa Meyer, Improving Your Reading Program (New York: The Macmillan Company, 1971), p. 117.

[2]George D. Spache and Evelyn B. Spache, Reading in the Elementary School (Boston: Allyn and Bacon, 1969), p. 410.

[3]Mary C. Austin and others, The Torch Lighters (Cambridge, Mass.: Harvard University Press, 1961), p. 146.

Not only are many prospective teachers deficient in ability to apply word analysis skills, but a conference of reading experts reported that, ". . . many teachers have become masters neither of the components (constituent parts) of reading instruction nor of the teaching of those components."[1] They further stated that:

> Teaching phonics and structural analysis calls for teachers who have mastered the fundamentals of these skills and who know how to teach them to children. For teachers who do not meet these criteria, schools should provide in-service training. So far as their students are concerned, teacher education institutions should make certain their prospective reading teachers do master these fundamentals.[2]

"The primary reason for emphasizing teachers proficiency in the application of the word analysis skills is to insure that they can provide adequate instruction for others."[3]

Statement of the Problem

The problem was to develop and standardize parallel forms of a criterion-referenced syllabication skills test composed of multiple-choice type items. These tests were designed to evaluate the individual proficiency of college students and in-service teachers.

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[1]Conference of Reading Experts, Learning to Read, A Report Prepared by a Conference of Reading Experts (Princeton, N.J.: Educational Testing Service, 1962), p. 4.

[2]Ibid., pp. 8-9.

[3]Robert L. Curry and Toby W. Rigby, Reading Independence Through Word Analysis (Columbus: Charles E. Merrill Publications, 1969), p. 3.

Purpose of the Study

Traditionally tests of syllabication skills have consisted of lists of words given to the student, with instructions for the student to re-write the words by breaking the words into the separate syllabic parts. This type of test was then scored by hand, requiring a great amount of time if a large number of students were involved. The tests that were developed in this study were tests of syllabication skills which consisted of multiple-choice type responses which can be scored either by hand or by machine if this service is available. Anastasi stated:

> Among the chief advantage of objective items are ease, rapidity, and objectivity of scoring. Multiple choice items have proved to be the most widely applicable. They are also easier to score than certain other forms, and reduce the chances of correct guessing by presenting several alternative responses.[1]

Due to the importance of syllabication as a part of the basic skills instruction in the preparation of teachers of reading, accurate measurement is vital to assess their achievement in this area of instruction. This study focused on the development of an instrument to achieve this goal.

Operational Definitions

1. "A criterion-referenced test is one that is deliberately constructed to yield measurements that are directly

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[1]Anne Anastasi, Psychological Testing, 3rd ed. (New York: The Macmillan Company, 1968), p. 162.

interpretable in terms of specified performance standards."[1]

2. Distracters are misleads.[2]

3. The multiple-choice form consists of the item and two or more responses to the question.[3]

4. Options are the distracters together with the correct answer.[4]

5. "Parallel tests have equal means, equal variance, and equal intercorrelations with one other."[5]

6. Structural analysis is the process by which a reader deals with root words and their inflected and derived forms. This includes variant endings, compound words, prefixes, suffixes, contractions, and syllabication.[6]

7. Syllabication is the ability to break words into syllables.[7]

8. "Syllable: A combination of several letters to form one sound which formulates a word or a part of a word."[8]

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[1]Robert L. Thorndike, ed., Educational Measurement, 2nd ed. (Washington, D.C.: American Council on Education, 1971), p. 653.

[2]Ibid., p. 94. [3]Ibid., p. 94. [4]Ibid., p. 94.

[5]J. P. Guilford, Psychometric Methods, 2nd ed. (New York: McGraw-Hill Book Company, 1954), p. 374.

[6]Guy L. Bond and Eva Bond Wagner, Teaching the Child to Read (New York: The Macmillan Company, 1966), p. 161.

[7]Heilman, Phonics in Proper Perspective, p. 77.

[8]Curry and Rigby, Reading Independence Through Word Analysis, p. 3.

9. Standardized tests are instruments which ". . . provide methods of obtaining samples of behavior under uniform procedures. By a uniform procedure we mean that the same fixed set of questions is administered with the same set of directions and timing constraints, and that the scoring procedure is carefully delineated and uniform. However, . . . some inventories (instruments) . . . do not have norms but are ordinarily considered as standardized."[1]

Related Literature

Implicit in most of the recommendations for teaching syllabication principles as a word recognition skill is the assumption that the student who can apply these principles will become a more efficient reader. Limited research has been conducted to determine if there is a significant relationship between syllabication skills and reading proficiency. Dawson wrote that ". . . almost all of the pertinent articles published by the International Reading Association have dealt directly with phonics, to the neglect of structural analysis and contextual clues."[2] However, many reading authorities have written of the necessity of the acquisition of these skills for students to become mature readers. This section will include both research and other literature not based on research techniques.

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[1]William A. Mehrens and Irvin J. Lehmann, Measurement and Evaluation in Education and Psychology (New York: Holt, Rinehart and Winston, Inc., 1973), p. 376.

[2]Mildred A. Dawson, comp., Teaching Word Recognition Skills (Newark, Del.: International Reading Association, 1971), p. iii.

There is some disagreement among reading experts as to specific methodology for developing proficient readers, "but the value of phonetic and structural analysis skills in developing reading proficiency is unquestionable."[1] Bond and Wagner wrote that one advantage of syllabication over other of the more detailed methods of word analysis is that it breaks the word into relatively large elements. A second advantage is that often these parts are well-known smaller words and will lead to the reinforcement of dependence upon the technique of known words within larger words. A third advantage is that syllabication teaches the system that is employed in the most usable book of all for word recognition and word pronunciation, the dictionary.[2]

Harris emphasized that for students who have trouble with blending single phonemes together the blending of syllables to make a spoken word is frequently much easier. Harris wrote that syllabication is employed in spelling as well as in reading.[3] Karlin stressed that the student who can divide a word into syllables before he attempts to apply phonics is likely to recognize the word. He wrote "that it is more efficient to recognize the pronunciation of a syllable than to analyze words letter by letter and then

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[1]Curry and Rigby, Reading Independence Through Word Analysis, p. iii.

[2]Bond and Wagner, Teaching the Child to Read, pp. 159-160.

[3]Albert J. Harris, How To Increase Reading Ability, 5th ed. (New York: David McKay Company, Inc., 1970), p. 337.

combine the sounds."[1] Burmeister attested to the use of syllabication generalizations for secondary students. She said, "Among the most useful phonic generalizations for secondary students to know are those that relate to syllabication."[2]

Schell wrote that the correct approach to teaching structural analysis is to teach syllabication as an integral part of phonics. He suggested that this approach would rectify inaccurate instruction and lead to a more precise understanding of how structural analysis aided in unlocking unrecognized words.[3]

Burmeister compared the findings of studies reported by Oaks, Clymer, Fry, Bailey, Emans, Burmeister and Winkley in which the usefulness of phonic structural analysis, and

---

[1]Robert Karlin, Teaching Reading in High School, 2nd ed. (New York: The Bobbs-Merrill Company, Inc., 1972), p. 138.

[2]Lou E. Burmeister, Reading Strategies for Secondary School Teachers (Reading, Mass.: Addison-Wesley Publishing Company, Inc., 1974), p. 136.

[3]Leo M. Schell, "Teaching Structural Analysis," The Reading Teacher 21 (November 1967): 133-37.

accent generalizations had been investigated.[1] Each of the generalizations stated and examined by any one of the investigators was listed. Using a "utility level" concept for evaluation, she determined generalizations which had limited utility value and those which according to the results of the studies had broad application. From her comparison of the seven studies, she concluded, in relation to structural syllabication, "These generalizations take precedence over phonic syllabication generalizations:

1. Divide between a prefix and a root.
2. Divide between two roots.
3. Usually divide between a root and a suffix."[2]

More recent studies have established the applicability of phonics and syllabication generalizations to selected vocabularies in various subject matter areas.

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[1]Lou E. Burmeister, "Usefulness of Phonic Generalizations," The Reading Teacher 21 (January 1968): 349-56; Ruth E. Oaks, "A Study of the Vowel Situations in a Primary Vocabulary," Education 71 (May 1952): 604-17; Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher 16 (January 1963): 252-58; E. A. Fry, "A Frequency Approach to Phonics," Elementary English 41 (November 1964): 759-65; Mildred Hart Bailey, "The Utility of Phonic Generalizations in Grades One Through Six," The Reading Teacher 20 (February 1967): 413-18; Robert Emans, "The Usefulness of Phonic Generalizations Above the Primary Level," The Reading Teacher 20 (February 1967): 419-25; Lou E. Burmeister, "An Analysis of the Inductive and Deductive Group Approaches to Teaching Selected Word Analysis Generalizations to Disabled Readers in Eighth and Ninth Grade," (unpublished doctoral dissertation, University of Wisconsin, 1966), and Carol K. Winkley, "Utilization of Accent Generalizations in Identifying Unknown Multisyllable Words," (unpublished doctoral dissertation, University of Chicago, 1965).

[2]Lou E. Burmeister, "Usefulness of Phonic Generalizations," The Reading Teacher 21 (January 1968): 349-56.

Davis tested the applicability to a composite of spelling words; Ferguson to the vocabulary of elementary mathematics texts; Jernigan to the vocabularies of books used in social studies.[1] Most significant to this study was the research conducted by Wood in which she determined the applicability of the syllabication generalizations used in the present study (appendix A).[2]

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[1]Lillie Smith Davis, "The Applicability of Phonic Generalizations to Selected Spelling Programs," (unpublished doctoral dissertation, University of Oklahoma, 1969); Loree H. Ferguson, "The Applicability of Specific Phonic Generalizations to Elementary Mathematics Textbooks," (unpublished doctoral dissertation, University of Oklahoma, 1970); Mary Jernigan, "The Utility of Specific Generalizations to Vocabularies in Science Textbooks," (unpublished doctoral dissertation, University of Oklahoma, 1969) and Elizabeth Pendergraft King, "The Utility of Phonic Generalizations in Social Studies Programs," (unpublished doctoral dissertation, University of Oklahoma, 1970).

[2]Ruby P. Wood, "The Applicability of Selected Structural Analysis Generalizations to Instructional Readings," (unpublished doctoral dissertation, University of Oklahoma, 1973).

CHAPTER II

PROCEDURES AND RESULTS OF THE STUDY

Test Specifications

Syllabication skills, as measured by the tests constructed, consisted of the ability of the students to choose the correct multiple-choice response. These tests were administered to university and college students enrolled in a basic reading skills course in teacher education programs. The tests were administered after completion of instruction in syllabication skills and were designed for administration in one class period. The resulting scores were used for evaluating total achievement by individual students in mastery of syllabication skills.

Procedures

Construction of the Tests

Structural analysis generalizations included in the tests were selected by applicability of usage in vocabulary used in grades one through six in five series of basal

readers (appendix A).[1] Three subject-matter experts in the field of reading were consulted for verification of the value of the nine generalizations (appendix B).

The test items were constructed of words that tested these nine generalizations:

1. A single consonant usually goes with the vowel which follows when that consonant appears between two vowels.

2. A single consonant appearing between two vowels usually goes with the preceding vowel if that vowel is short and within an accented syllable.

3. No syllabic division should be made between consonants that constitute a consonant blend or consonant digraph.

4. The syllabic division of two consonants, which are neither blend nor digraph, and which appear between two vowels, usually comes between the two consonants.

5. Prefixes usually form separate syllables.

6. Suffixes usually form separate syllables.

7. The suffix -ed, if immediately preceded by the letter d or t, forms a separate syllable. The suffix -ed combines with other letters to form one syllable if not preceded by d or t.

8. A word ending in le, when the le is preceded by a consonant, forms a final syllable with that consonant and the le. (Note: le stands alone as the final syllable when preceded by ck.)

9. A syllable division is made between words which form a compound.[2]

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[1] Ibid.

[2] Curry and Rigby, Reading Independence Through Word Analysis, pp. 21-65.

Four forms of the one hundred item test were constructed. Two pilot studies were conducted for analysis and revision of the tests. The final multiple-choice item tests were designed for administration in one class period. Mastery of these skills was determined by a proficiency score of eighty-five or above.

Content validity involved essentially the systematic examination of the content of the tests to determine whether they covered a representative sample of the behavior domain that was measured. Content validity was built into the tests from the outset by choosing items to test the nine structural analysis principles. Concurrent validity was evaluated by giving tests intended as a substitute for a less convenient procedure, and comparing the performance of the test directly with the test that is less convenient.

Forms B-1 and C-1 consist of the identical items as B and C respectively, but the student was asked to syllabicate each word by dividing it into its syllabic parts. Forms B-1 and C-1 were traditional forms of syllabication tests, and are less convenient than forms B and C. Concurrent validity was evaluated by using B, multiple-choice form, and B-1, traditional testing form. Pearson correlation coefficients of students' scores were computed on the two tests. The same procedure was used for test C and C-1.

Forms B and C, multiple-choice tests, were written as parallel forms to test parallel form (immediate) reliability. The multiple-choice test items were constructed with

four options given for each item. The options consisted of one correct response and three distracters.

The Kuder-Richardson internal consistency formula number twenty (KR 20) was used to compute the reliability estimate on all forms. This gave an indication of the extent to which individuals showed stability of performance.

Means, standard deviations and standard errors of measurement were reported on all forms for the purpose of determining whether the tests were parallel in these respects. Also, for purposes of reporting and future revisions of the test, the difficulty index of each item was computed and the point-biserial correlation by forms was reported.

Directions were written to be given to the course instructors for administration of the tests (appendix C). The order of presentation of the four forms was rotated, one-fourth of the students taking each test at one time. This procedure was used to control for test-retest practice effects and other extraneous variables such as fatigue or boredom with the tests.

The second stage of the test development involved a trial administration of the test to ascertain exactly how the test functions in actual use and to estimate the validity and reliability. The trial administration served to make analysis and revision of items, and provided a check on time limits and on the procedures of administration.

Pilot Study One

The tests were administered to eighty-three students enrolled in teacher education courses in basic reading skills for the 1974 summer term. Students were tested from two institutions--The University of Oklahoma and East Central State University.

Content validity was verified by examination of the tests by the same judges in the field of reading (appendix B). Frequency and distribution of generalizations by test item revealed that these items were weighted in total number of times tested. Generalization one showed a slightly higher total of appearances due to the prevalence of this generalization in many other vocabulary words that were tested for other generalizations. Generalizations five and six were tested more often due to the great number of prefixes and suffixes to be tested. From past experience with traditional tests, generalization nine has been shown to be easily mastered by students so was tested less frequently. Generalizations two, three, four, seven and eight were given nearly equivalent weights. Examination of the frequency and distributions of items showed that nearly equivalent weights were achieved in all test forms, with the exception of generalization three. Generalization three appeared more often in forms B and B-1 than in C and C-1.

Pearson correlation coefficients for evaluation of concurrent validity (see table 1) yielded significant correlations at the .001 level for forms B and B-1 (.897), B-1

and C (.811), B and C-1 (.660) and C and C-1 (.627). Pearson correlation coefficients for evaluation of parallel form (immediate) reliability (see table 2) yielded significant correlations at the .001 level for forms B and C (.805); B-1 and C-1 (.682). Kuder-Richardson twenty coefficients for evaluation of internal reliability (see table 3) yielded significant correlations at the .001 level of B (.90), B-1 (.93), C (.86) and C-1 (.91). Means, standard deviations and the standard error of measurements are reported in table 4.

TABLE 1

CONCURRENT VALIDITY COEFFICIENTS OF SYLLABICATION SKILLS TEST

Test Forms	No. of Cases	Test Forms B-1	Test Forms C	Test Forms C-1
B	83	.897*		.660*
B-1	83		.811*	
C	83			.627*

*Significant at .001 level

TABLE 2

ALTERNATE FORM (IMMEDIATE) RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TEST

Test Forms	Test Forms C	Test Forms C-1
B	.805*	
B-1		.682*

*Significant at .001 level

TABLE 3

INTERNAL RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TESTS

Test Forms	Reliability Coefficients
B	.90*
B-1	.93*
C	.86*
C-1	.91*

*Significant at .001 level

TABLE 4

MEANS, STANDARD DEVIATIONS AND STANDARD ERROR OF MEASUREMENTS FOR PILOT STUDY ONE

Test Forms	Means	S.E. Meas.	S.D.
B	85.1	3.2	10.0
B-1	82.9	3.3	12.2
C	84.5	3.2	8.5
C-1	84.7	3.2	10.7

The pilot study indicated that both content validity and validity as evaluated by judges met the requirements for the domain to be tested in the test specifications. Concurrent validity correlations and reliability correlations were highly significant. The concurrent validities indicated that multiple-choice type testing could be a valid measurement for testing syllabication skills as a substitute for the less convenient traditional testing. The data collected in pilot study one were used for item revision.

The test items changed were those which had negative point bi-serial correlations and had syllabic divisions within the word that were exceptions to other generalizations. Three items were changed on forms B and B-1 and twelve items were changed on forms C and C-1.

Pilot Study Two

The tests were administered to 158 students enrolled in teacher education courses in basic reading skills for the 1974 Fall term. Students were tested from the University of Oklahoma, East Central Oklahoma State Univeristy and Oklahoma Christian College.

Content validity was verified by three judges in the field of reading as reported in Pilot Study One. Pearson correlation coefficients for evaluation of concurrent validity (see table 5) yielded significant correlations at the .001 level for forms B and B-1 (.794), B-1 and C (.825), B and C-1 (.811), and C and C-1 (.885). Pearson correlation coefficients for evaluation of parallel form (immediate) reliability (see table 6) yielded significant correlations at the .001 level for forms B and C (.817) and B-1 and C-1 (.837). Kuder-Richardson twenty coefficients for evaluation of internal reliability (see table 7) yielded significant correlations at the .001 level of B (.89), B-1 (.87), C (.88) and C-1 (.88). Means, standard deviations and the standard error of measurements are reported in table 8.

TABLE 5

CONCURRENT VALIDITY COEFFICIENTS OF SYLLABICATION SKILLS TESTS

Test Forms	No. of Cases	Test Forms		
		B-1	C	C-1
B	158	.794*		.811*
B-1	158		.825*	
C	158			.885*

*Significant at .001 level

TABLE 6

ALTERNATE FORM (IMMEDIATE) RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TESTS

Test Forms	C	C-1
B	.817*	
B-1		.837*

*Significant at .001 level

TABLE 7

INTERNAL RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TESTS

Test Forms	Reliability Coefficients
B	.89*
B-1	.87*
C	.87*
C-1	.88*

*Significant at .001 level

TABLE 8

MEANS, STANDARD DEVIATIONS AND STANDARD ERROR OF MEASUREMENTS FOR PILOT STUDY TWO

Test Forms	Means	S.E. Meas.	S.D.
B	87.3	3.0	8.9
B-1	87.2	3.0	8.3
C	87.4	3.0	8.8
C-1	88.1	3.1	8.9

This pilot study indicated that concurrent validity and reliability correlations were highly significant. The concurrent validity coefficients indicated that multiple-choice type testing could be a valid measurement for testing syllabication skills.

Pilot Study Two indicated that the test revisions served to improve the consistency of reliability, validity and internal reliability coefficients and at the same time maintain highly significant correlations. The revised tests showed more consistency in means, standard deviations and standard errors of measurement.

Additional forms of the test, A and A-1, were constructed at the same time B, B-1, C and C-1 were developed. Forms A and A-1 were administered to seventy-nine of the students in Pilot Study Two to determine correlations of validity and reliability of this test and to determine an item analysis. Since correlations of reliability and validity were highly significant at the .001 level, items could be used from forms A and A-1 for revisions in tests B, B-1, C and C-1. Pearson correlation coefficients are reported in table 9.

TABLE 9

CORRELATION COEFFICIENTS FOR A, A-1, B, B-1 AND C-1

Test Forms	Test Forms				
	A-1	B	B-1	C	C-1
A	.833	.786	.786	.788	.788
A-1		.798	.743	.717	.771
B			.824	.750	.737
B-1				.798	.789
C					.853

Final Standardization and Results

An item analysis and point bi-serial correlations of test items did not warrant a revision after Pilot Study Two in the test forms used for the final standardization. Pilot Study Two test forms B, B-1, C and C-1 were changed to final test forms A, A-1, B and B-1 respectively. Forms A, A-1, B and B-1 of the Syllabication Skills Test used in the final standardization are presented in appendix D.

A purposeful non-random sampling procedure was used for selecting the subjects included in the study. Subjects

used in the study were enrolled in undergraduate reading courses in teacher education programs. Fourteen public and private colleges and universities were selected to represent a cross-sectional sampling throughout the United States (appendix E). Tests were administered to students in twenty-seven classes in these institutions.

A total of 807 students participated in the study; however, sixty-seven students did not complete all forms of the test. The final number of observations used for analysis of the data consisted of 740 students who completed all test forms. Representation of students by ethnic groups included: 62 Blacks; 674 Whites; 1 American-Indian; and, 3 Mexican-Americans.

Directions (appendix C) were given to the class instructors for uniform procedures in the administration of the final test forms. Tests were administered in the Spring of 1975 after students had received instruction in syllabication generalizations.

Content validity was judged by frequency and distribution of generalizations by test item. Results revealed that the tests measured the domain set forth in the test specifications (appendix F). Total number of items testing each generalization are shown in table 10.

TABLE 10

NUMBER OF TEST ITEMS BY GENERALIZATION

Generalization	Test Forms	
	A	B
1	16	19
2	12	15
3	14	10
4	21	20
5	31	31
6	21	20
7	13	12
8	12	12
9	8	8

Examination of the frequency and distributions of items showed that nearly equivalent weights were achieved in both test forms. Generalization five was tested more often due to the great number of prefixes; whereas, generalization nine was tested less frequently in that traditional tests have shown that this generalization was easily mastered. Three judges attested to the value of these syllabication

generalizations to the field of reading and to the content measured by the Syllabication Skills Tests (appendix B).

Pearson correlation coefficients for evaluation of concurrent validity (see table 11) yielded significant correlations at the .001 level for forms A and A-1 (.859), A and B-1 (.823), A-1 and B (.857) and B and B-1 (.873). Pearson correlation coefficients for evaluation of parallel form (immediate) reliability (see table 12) yielded significant correlations at the .001 level for forms A and B (.843); A-1 and B-1 (.866). Kuder-Richardson twenty coefficients for evaluation of internal reliability (see table 13) yielded significant correlations at the .001 level of A (.87), A-1 (.92), B (.88) and B-1 (.94). Means, standard deviations and the standard error of measurements are reported in table 14. The difficulty index and correlation of test items are shown in table 15.

Corrections for attenuation of the correlation coefficients were not employed in that they were considered to be unnecessary and perhaps inappropriate because of the levels of significance attained. Mehrens and Lehmann supported this position when they wrote:

> . . . they are certainly subject to misinterpretation. Naive users may easily be led by these corrections into believing that a test is a better predictor than is warranted. In general, we are opposed to such statistical manipulations being reported in a test manual. If they are reported, however, the uncorrected validity coefficient must also be reported, and the manual should caution the user with regard to the interpretation of the statistic.[1]

---

[1]Mehrens and Lehmann, Measurement and Evaluation in Education and Psychology, p. 129.

TABLE 11

CONCURRENT VALIDITY COEFFICIENTS OF SYLLABICATION SKILLS TEST

Test Forms	No. of Cases	Test Forms A-1	Test Forms B	Test Forms B-1
A	740	.859*		.823*
A-1	740		.857*	
B	740			.873*

*Significant at .001 level

TABLE 12

ALTERNATE FORM (IMMEDIATE) RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TEST

Test Forms	Test Forms B	Test Forms B-1
A	.843*	
A-1		.866*

*Significant at the .001 level

TABLE 13

INTERNAL RELIABILITY COEFFICIENTS OF SYLLABICATION SKILLS TESTS

Test Forms	Reliability Coefficients*
A	.87*
A-1	.92*
B	.88*
B-1	.94*

*Significant at .001 level

TABLE 14

MEANS, STANDARD DEVIATIONS AND STANDARD ERROR OF MEASUREMENTS OF THE FINAL SYLLABICATION SKILLS TESTS

Test Forms	Means	S.E. Meas.	S.D.
A	81.2	3.4	9.8
A-1	80.7	3.6	10.2
B	80.6	3.5	10.0
B-1	82.1	3.6	10.1

TABLE 15

DIFFICULTY INDEX AND CORRELATION OF TEST ITEMS

Test Item	Form A		Form B		Test Item	Form A		Form B	
	DI*	C**	DI*	C**		DI*	C**	DI*	C**
1	.99	.00	.98	.13	51	.94	.24	.95	.26
2	.82	.18	.90	.18	52	.98	.18	.98	.12
3	.89	.02	.91	.12	53	.90	.24	.50	.43
4	.64	.55	.65	.51	54	.79	.33	.80	.30
5	.91	.25	.70	.12	55	.99	.11	.99	.12
6	.68	.47	.93	.19	56	.91	.30	.99	.03
7	.91	.20	.65	.44	57	.81	.27	.88	.23
8	.97	.11	.96	.18	58	.92	.29	.70	.42
9	.96	.26	.96	.19	59	.69	.38	.79	.31
10	.80	.34	.84	.28	60	.92	.32	.49	.31
11	.88	.20	.92	.20	61	.58	.51	.74	.41
12	.99	.13	.97	.17	62	.70	.26	.68	.21
13	.69	.14	.80	.36	63	.95	.12	.83	.12
14	.57	.36	.79	.31	64	.99	.17	.99	.17
15	.89	.08	.92	.21	65	.97	.19	.98	.16
16	.94	.18	.97	.04	66	.82	.41	.82	.42
17	.82	.09	.86	.31	67	.42	.22	.58	.18
18	.92	.15	.97	.14	68	.69	.21	.72	.10
19	.43	.46	.75	.45	69	.50	.53	.56	.53
20	.99	.11	.99	.07	70	.71	.20	.89	.11
21	.97	.11	.91	.18	71	.88	.11	.86	.15
22	.75	.42	.74	.40	72	.51	.18	.75	.06
23	.64	.58	.64	.54	73	.94	.26	.80	.32
24	.93	.16	.85	.11	74	.46	.44	.53	.40
25	.85	.20	.78	.35	75	.67	.49	.75	.45
26	.39	.40	.52	.44	76	.96	.16	.98	.19
27	.90	.13	.96	.06	77	.98	.20	.87	.32
28	.83	.35	.68	.18	78	.91	.30	.95	.33
29	.91	.19	.92	.32	79	1.00	.10	.99	.17
30	.58	.24	.49	.22	80	.64	.40	.66	.46
31	.86	.30	.85	.23	81	.69	.47	.66	.52
32	.88	.24	.78	.29	82	.66	.48	.59	.53
33	.67	.22	.98	.21	83	.86	.26	.94	.16
34	.58	.39	.70	.34	84	.75	.41	.68	.41
35	.98	.11	.98	.26	85	.67	.43	.62	.47
36	.94	.20	.30	.24	86	.93	.13	.92	.09
37	.94	.23	.80	.23	87	.95	.12	.97	.14
38	.96	.16	.88	.16	88	.87	.13	.87	.19
39	.62	.53	.74	.45	89	.63	.28	.77	.19
40	.79	.03	.82	-.01	90	.99	.15	.99	.16
41	.90	.04	.86	.20	91	.73	.14	.75	.09
42	.84	.25	.86	.21	92	.81	.26	.74	.42
43	.95	.05	.99	.17	93	.53	.40	.57	.46
44	.74	.42	.82	.42	94	.77	.41	.49	.52
45	.65	.35	.64	.23	95	.95	.21	.87	.20
46	.99	.11	.99	.17	96	.92	.29	.91	.28
47	.93	.25	.99	.27	97	.99	.18	.98	.20
48	.96	.19	.94	.24	98	.94	.29	.61	.52
49	.68	.26	.57	.12	99	.58	.48	.94	.26
50	.64	.57	.64	.53	100	.97	.07	.86	.32

*Difficulty Index
**Point Bi-serial Correlation

The analysis of the data obtained on the standardization of the Syllabication Skills Tests (Forms A and B) indicated that these were valid and reliable instruments. Multiple-choice type items measured the ability of students to apply the skills required to syllabicate words.

CHAPTER III

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was designed to develop and standardize parallel forms of a criterion-referenced syllabication skills test. The test items were of a multiple-choice type. Tests were administered to college students enrolled in basic reading courses.

Two pilot studies were conducted previous to the final standardization for purposes of refining the final test forms. Analysis of the data in the first pilot study resulted in the changing of several test items which showed a negative correlation with other items on the tests. Analysis of the data of pilot study two showed validity and reliability coefficients significant at the .001 level and that item correlations were improved.

No changes were made in the test items for the final administration of the tests. Twenty-seven classes in fourteen public and church affiliated colleges and universities participated in the study. The tests were administered to

807 students. Sixty-seven students did not complete all four forms of the tests. The final statistical analysis of data included a sample of 740 students. The validity and reliability coefficients and the item analysis data indicated that the domain was effectively tested through the use of a more convenient measuring instrument-tests composed of multiple-choice type items.

Conclusions

Conclusions from the examination of the results of the data analysis obtained in the study were:

1. A valid and reliable measuring instrument was developed as an efficient manner for determining college students' abilities to apply syllabication skills.

2. Form A or B of the Syllabication Skills Test can be administered within the time limits of one college class period (approximately 40 minutes).

3. The arbitrary criterion level of eighty-five percent accuracy was logical in that the means of the tests were very similar to the established criterion level.

4. Judges in the field of reading considered the tests to be of educational value in the preparation of teachers.

5. Parallel forms of the Syllabication Skills Test were developed.

Recommendations for Further Study

The following recommendations for additional research have evolved from the present study:

1. Local and national norms should be established for students in teacher education programs which indicate performance in relation to other students at the same level.

2. An analysis of the items (words) on the tests be made and a method for diagnosing deficiencies related to each syllabication generalization tested be devised for use as a diagnostic pre-test.

3. Syllabication skills tests should be devised, or if applicable, these tests should be normed for students in grades seven through twelve. Application of the technique devised for determining specific deficiencies should be applied to the current tests or the newly constructed tests for students of these grade levels.

4. Similarly devised tests should be constructed and standardized for determining proficiency and diagnostic information in the application of the phonic generalizations.

5. A study should be conducted to determine if there are significant correlations between syllabication skills and vocabulary, comprehension, gender and grade level of students as correlated with a standardized reading achievement test.

6. A study should be conducted to determine if there are significant differences between the syllabication skills of above-average and below-average readers.

APPENDIX A

SUMMARY TABLE OF APPLICABILITY OF GENERALIZATIONS

TABLE 16

Applicability of Syllabication Generalizations

	Generalizations	Per Cent of Applicability
1.	A single consonant usually goes with the vowel which follows when that consonant appears between two vowels.	62
2.	A single consonant appearing between two vowels usually goes with the preceding vowel if that vowel is short and within an accented syllable.	100
3.	No syllabic division should be made between consonants that constitute a consonant blend or consonant digraph.	93
4.	The syllabic division of two consonants, which are neither blend nor diagraph, and which appear between two vowels, usually comes between the two consonants.	96
5.	Prefixes usually form separate syllables.	100
6.	Suffixes usually form separate syllables.	61
7.	The suffix -ed, if immediately preceded by the letter d or t, forms a separate syllable. The suffix -ed combines with other letters to form one syllable if not preceded by d or t.	100
8.	A word ending in le, when the le is preceded by a consonant, forms a final syllable with that consonant and the le. (Note: le stands alone as the final syllable when preceded by ck.)	98
9.	A syllable division is made between words which form a compound.	100

APPENDIX B

STATEMENTS OF VERIFICATION OF VALIDITY

BY SUBJECT-MATTER EXPERTS

MOORE PUBLIC SCHOOLS

400 North Broadway
Moore, Oklahoma
73160

Leon Bewley, Ph. D.
Dir. of Fed. Programs and Reading

September 15, 1975

Mrs. Lynna Geis
College of Education
University of Oklahoma
Norman, Oklahoma 73069

Dear Mrs. Geis:

I have analyzed the four forms of the SYLLABICATION SKILLS TEST and in my judgment each covers the content of the domain being measured. Also, in my professional judgment, the value of these syllabication generalizations is inestimable to the field of reading.

Sincerely,

Leon Bewley

Wesley Leon Bewley, Ph. D.

September 8, 1975

Lynna Geis
College of Education
University of Oklahoma
Norman, Oklahoma

Dear Ms. Geis:

I have analyzed the four forms of the SYLLABICATION SKILLS TEST and am satisfied that each covers the content of the domain being measured. Also, in my professional judgment, which is based on an accumulation of empirical data, the value of these syllabication generalizations is inestimable to the field of reading.

Sincerely,

Coker J. Denton

Coker J. Denton
Professor of Education
Northeastern State College
Tahlequah, Oklahoma

OSCAR ROSE JUNIOR COLLEGE 6420 Southeast 15th • Midwest City, Oklahoma 73110

Office of Veterans Affairs

September 11, 1975

Lynna Geis
College of Education
University of Oklahoma
820 Van Vleet Oval
Norman, Oklahoma 73069

Dear Ms. Geis:

After carefully surveying the four forms of the Syllabication Skills Test, I am convinced that the content of the field is covered. Also, in my judgment, the value of these syllabication generalizations is pertinent to the field of reading.

Sincerely,

F. Robert Poole

F. Robert Poole, Ph.D.
Director,
Office of Veterans Affairs

FRP:cm

APPENDIX C

DIRECTIONS FOR ADMINISTRATION OF TEST FORMS

DIRECTIONS FOR ADMINISTERING TESTS ON SYLLABICATION SKILLS

There are four forms (one-hundred items each) of the tests (Form A, A-1, B, and B-1). Forms A and B are comprised of multiple-choice type items and Forms A-1 and B-1 are comprised of words which each student must re-write by syllables. Each student is to take all forms (Form A, A-1, B, B-1).

For administration, the class should be divided into four groups. The administration of these tests must then be alternated in this manner.

Group I - Form A, A-1, B and B-1.

Group II - Form A-1, B, B-1, and A.

Group III - Form B, B-1, A and A-1.

Group IV - Form B-1, A, A-1, and B.

On the answer sheet for Forms A and B please have students give name, date, school, sex, instructor, form of test under name of test and identification number (use social security numbers if institutional ID numbers are not available). Also, answer sheets must be completed with a Number 2 pencil. On Forms A-1 and B-1, have the student provide the information requested.

Please return all tests (including unused tests) and answer sheets in the self-addressed stamped envelope. The students' scores will be forwarded to you as quickly as possible.

The following information is essential to describe the sample population. By observation, please enter the number of students in each ethnic group.

Black_____ White_____ Indian_____

Oriental_____ Other_____

Thank you for your assistance in making this study possible.

APPENDIX D

SYLLABICATION SKILLS TESTS

Syllabication Skills Test

Form A

Do Not Write on Test Booklet

Directions: Complete the following information on the answer sheet:

1. Name.
2. Sex.
3. Date of testing.
4. Name of institution.
5. Name of Instructor.
6. Form of test (in space provided for "Name of Test").
7. Identification Number (use social security number if institutional ID numbers are not available). Blacken spaces to indicate ID number.

Use #2 Pencil

1. pathway	1) pat-hway	2) path-wa-y	3) path-way	4) pa-thway
2. tricycle	1) tri-cy-cle	2) tric-ycle	3) tri-cyc-le	4) tric-y-cle
3. cadet	1) cade-t	2) ca-de-t	3) ca-det	4) cad-et
4. freckle	1) frec-kle	2) freck-le	3) freckl-e	4) fre-ckle
5. abstention	1) ab-stent-ion	2) abs-tent-ion	3) ab-sten-tion	4) abs-ten-tion
6. cricket	1) crick-et	2) cric-ket	3) cri-cket	4) cricket
7. loaded	1) loa-ded	2) lo-ad-ed	3) lo-a-ded	4) load-ed
8. hydrogen	1) hyd-rog-en	2) hy-dro-gen	3) hyd-ro-gen	4) hy-drog-en
9. collect	1) coll-ect	2) collect	3) col-lect	4) co-llect
10. tenable	1) ten-ab-le	2) ten-a-ble	3) ten-able	4) te-na-ble
11. objection	1) ob-ject-ion	2) obj-ec-tion	3) ob-je-ction	4) ob-jec-tion
12. discontent	1) dis-con-tent	2) di-scon-tent	3) dis-cont-ent	4) di-scont-ent
13. intangible	1) in-tang-ib-le	2) in-tan-gi-ble	3) int-an-gi-ble	4) in-tang-i-ble
14. psychology	1) psy-cho-lo-gy	2) psy-chol-og-y	3) psy-chol-o-gy	4) psyc-hol-o-gy
15. privacy	1) priv-ac-y	2) pri-va-cy	3) pri-vac-y	4) priv-a-cy
16. lectern	1) lect-ern	2) le-ctern	3) lectern	4) lec-tern
17. unimportant	1) un-im-por-tant	2) u-nim-por-tant	3) un-im-port-ant	4) u-nim-port-ant
18. cobra	1) cobr-a	2) co-bra	3) co-br-a	4) cob-ra
19. profit	1) pro-fit	2) profit	3) prof-it	4) pr-of-it
20. flapjack	1) flap-jack	2) flapj-ack	3) fla-pjack	4) flapjack
21. expulsion	1) ex-puls-ion	2) ex-pul-sion	3) exp-ul-sion	4) exp-uls-ion
22. teacher	1) tea-cher	2) teac-her	3) teach-er	4) te-ac-her
23. buckle	1) bu-ckle	2) buc-kle	3) buckl-e	4) buck-le
24. tomato	1) tom-a-to	2) to-ma-to	3) to-mat-o	4) tom-at-o
25. paradox	1) par-a-dox	2) pa-ra-dox	3) pa-rad-ox	4) par-ad-ox
26. neglected	1) neg-lect-ed	2) ne-glec-ted	3) neg-lec-ted	4) ne-glect-ed
27. octant	1) o-ct-ant	2) octant	3) oc-tant	4) oct-ant
28. mechanic	1) me-chan-ic	2) me-cha-nic	3) mec-han-ic	4) mec-ha-nic
29. huckster	1) hucks-ter	2) huckst-er	3) huc-kster	4) huck-ster
30. rubicund	1) rub-i-cund	2) ru-bi-cund	3) ru-bic-und	4) rub-ic-und
31. illusion	1) ill-u-sion	2) il-lus-ion	3) il-lu-sion	4) ill-us-ion
32. bally	1) ball-y	2) ba-lly	3) bally	4) bal-ly
33. destroy	1) de-stroy	2) dest-roy	3) des-troy	4) de-stro-y
34. recited	1) re-ci-ted	2) rec-i-ted	3) re-cit-ed	4) rec-it-ed
35. poorhouse	1) poor-hous-e	2) poor-house	3) po-or-house	4) poor-hou-se

36. cantonment	1) cant-on-ment	2) can-tonn-ent	3) can-ton-ment	4) can-to-nment
37. assemble	1) ass-em-ble	2) as-sem-ble	3) a-ssemb-le	4) as-semb-le
38. silent	1) si-lent	2) sile-nt	3) sil-ent	4) silent
39. bigot	1) bigot	2) big-ot	3) big-o-t	4) bi-got
40. preventive	1) pre-vent-ive	2) prev-en-tive	3) pre-ven-tive	4) prev-ent-ive
41. dolphin	1) dolph-in	2) dolp-hin	3) do-lphin	4) dol-phin
42. possessive	1) pos-ses-sive	2) poss-es-sive	3) poss-ess-ive	4) pos-sess-ive
43. merchant	1) me-rchant	2) mer-chant	3) merc-hant	4) merch-ant
44. obtained	1) ob-tain-ed	2) ob-tai-ned	3) ob-ta-in-ed	4) ob-tained
45. deducted	1) de-duct-ed	2) de-duc-ted	3) ded-uc-ted	4) ded-uct-ed
46. shipmate	1) shi-pmate	2) ship-ma-te	3) ship-mate	4) ship-mat-e
47. contrite	1) con-tri-te	2) con-trite	3) cont-rite	4) cont-ri-te
48. degree	1) de-gree	2) degr-ee	3) deg-ree	4) degree
49. notary	1) no-tar-y	2) no-ta-ry	3) not-a-ry	4) not-ar-y
50. prickle	1) pric-kle	2) pri-ckle	3) prick-le	4) prickl-e
51. vessel	1) ves-sel	2) vess-el	3) ve-ssel	4) vesse-l
52. circumspect	1) circ-um-spect	2) cir-cum-spect	3) circum-spect	4) cir-cums-pect
53. awkwardly	1) awk-war-dly	2) aw-kwar-dly	3) aw-kward-ly	4) awk-ward-ly
54. chronicle	1) chro-nic-le	2) chron-i-cle	3) chron-ic-le	4) chro-ni-cle
55. footstep	1) foot-step	2) foots-tep	3) foo-tstep	4) fo-ot-step
56. replenish	1) re-ple-nish	2) re-plen-ish	3) rep-len-ish	4) rep-le-nish
57. microphone	1) mic-ro-phone	2) mic-rop-hone	3) mi-cro-phone	4) mi-crop-hone
58. volume	1) vo-lu-me	2) vo-lume	3) vol-u-me	4) vol-ume
59. offended	1) of-fen-ded	2) of-fend-ed	3) off-end-ed	4) off-en-ded
60. italicized	1) it-al-i-cized	2) it-al-i-ciz-ed	3) i-ta-lic-iz-ed	4) i-tal-i-cized
61. bishop	1) bish-op	2) bis-hop	3) bi-shop	4) bishop
62. serious	1) ser-ious	2) ser-io-us	3) se-rio-us	4) se-ri-ous
63. mental	1) ment-al	2) me-ntal	3) men-tal	4) menta-l
64. bookmark	1) bo-ok-mark	2) boo-kmark	3) bo-okmark	4) book-mark
65. intervene	1) in-ter-ve-ne	2) in-ter-vene	3) int-er-vene	4) in-terv-ene
66. inspired	1) in-spi-red	2) ins-pir-ed	3) in-spired	4) ins-pired
67. ruminant	1) ru-mi-nant	2) ru-min-ant	3) rum-i-nant	4) rum-in-ant
68. sarcasm	1) sa-rcasm	2) sarc-asm	3) sar-casm	4) sar-ca-sm
69. dragon	1) drag-o-n	2) drag-on	3) dragon	4) dra-gon
70. caboodle	1) cab-ood-le	2) ca-bood-le	3) cab-oo-dle	4) ca-boo-dle

71. gadded	1) ga-dded	2) gadd-ed	3) gad-ded	4) gadde-d
72. maturity	1) mat-ur-i-ty	2) ma-tu-ri-ty	3) mat-u-ri-ty	4) ma-tur-it-y
73. consummate	1) cons-um-mate	2) con-sum-ma-te	3) con-summ-ate	4) con-sum-mate
74. pathetic	1) pa-thet-ic	2) pat-het-ic	3) pa-the-tic	4) pat-he-tic
75. debit	1) de-bit	2) debit	3) deb-it	4) debi-t
76. fervent	1) fe-rvent	2) ferv-ent	3) fervent	4) fer-vent
77. sixteen	1) six-teen	2) si-xteen	3) sixt-een	4) six-te-en
78. transmutation	1) tran-sum-ta-tion	2) trans-mu-tat-ion	3) trans-mu-ta-tion	4) trans-mut-at-ion
79. dewdrop	1) dewd-rop	2) dew-drop	3) de-w-drop	4) dew-dr-op
80. pinned	1) pinn-ed	2) pin-ned	3) pi-nned	4) pinned
81. cockle	1) cock-le	2) cockl-e	3) co-ckle	4) coc-kle
82. lemon	1) le-mon	2) lemon	3) lem-on	4) lemo-n
83. sanity	1) sa-ni-ty	2) san-i-ty	3) san-it-y	4) sa-nit-y
84. butcher	1) but-cher	2) bu-tcher	3) butc-her	4) butch-er
85. pumped	1) pum-ped	2) pump-ed	3) pumped	4) pu-mped
86. indistinct	1) ind-is-tinct	2) in-dis-tinct	3) ind-ist-inct	4) in-dist-inct
87. seldom	1) seld-om	2) se-ldom	3) seldom	4) sel-dom
88. emitted	1) em-it-ted	2) em-i-tted	3) e-mit-ted	4) e-mitt-ed
89. beholden	1) be-hol-den	2) beh-old-en	3) beh-ol-den	4) be-hold-en
90. sideways	1) sid-e-ways	2) si-de-ways	3) side-ways	4) sid-ew-ays
91. descent	1) de-scent	2) desc-ent	3) des-cent	4) descent
92. divisible	1) di-vis-ib-le	2) div-is-i-ble	3) di-vis-i-ble	4) div-is-ib-le
93. inflated	1) in-fla-ted	2) in-flat-ed	3) inf-la-ted	4) inf-lat-ed
94. honor	1) ho-nor	2) honor	3) hono-r	4) hon-or
95. forerunner	1) fore-run-ner	2) fore-runn-er	3) forer-un-ner	4) forer-unn-er
96. bunny	1) bunny	2) bu-nny	3) bun-ny	4) bunn-y
97. restlessness	1) res-tless-ness	2) restl-ess-ness	3) re-stless-ness	4) rest-less-ness
98. puzzle	1) pu-zzle	2) puz-zle	3) puzz-le	4) puzzl-e
99. rather	1) rat-her	2) rath-er	3) rather	4) ra-ther
100. underwear	1) un-der-wear	2) und-er-wear	3) und-er-we-ar	4) un-der-we-ar

Syllabication Skills Test

FORM A-1

Name_____ I.D._____

School_____

DIRECTIONS: Re-write the words by syllables. (Example: fa-ga-ceous)

1. pathway _____
2. tricycle _____
3. cadet _____
4. freckle _____
5. abstention _____
6. cricket _____
7. loaded _____
8. hydrogen _____
9. collect _____
10. tenable _____
11. objection _____
12. discontent _____
13. intangible _____
14. psychology _____
15. privacy _____
16. lectern _____
17. unimportant _____
18. cobra _____
19. profit _____
20. flapjack _____
21. expulsion _____
22. teacher _____
23. buckle _____
24. tomato _____
25. paradox _____
26. neglected _____
27. octant _____
28. mechanic _____
29. huckster _____
30. rebicund _____
31. illusion _____
32. belly _____
33. destroy _____
34. recited _____
35. poorhouse _____
36. cantonment _____
37. assemble _____
38. silent _____
39. bigot _____
40. preventive _____
41. dolphin _____
42. possessive _____
43. merchant _____
44. obtained _____
45. deducted _____
46. shipmate _____
47. contrite _____
48. degree _____
49. notary _____
50. prickle _____

51. vessel _____
52. circumspect _____
53. awkwardly _____
54. chronicle _____
55. footstep _____
56. replenish _____
57. microphone _____
58. volume _____
59. offended _____
60. italicized _____
61. bishop _____
62. serious _____
63. mental _____
64. bookmark _____
65. intervene _____
66. inspired _____
67. ruminant _____
68. sarcasm _____
69. dragon _____
70. caboodle _____
71. gadded _____
72. maturity _____
73. consummate _____
74. pathetic _____
75. debit _____
76. fervent _____
77. sixteen _____
78. transmutation _____
79. dewdrop _____
80. pinned _____
81. cockle _____
82. lemon _____
83. sanity _____
84. butcher _____
85. pumped _____
86. indistinct _____
87. seldom _____
88. emitted _____
89. beholden _____
90. sideways _____
91. descent _____
92. divisible _____
93. inflated _____
94. honor _____
95. forerunner _____
96. bunny _____
97. restlessness _____
98. puzzle _____
99. rather _____
100. underwear _____

Syllabication Skills Test

Form B

Do Not Write on Test Booklet

Directions: Complete the following information on the answer sheet:

1. Name.
2. Sex.
3. Date of testing.
4. Name of institution.
5. Name of Instructor.
6. Form of test (in space provided for "Name of Test").
7. Identification Number (use social security number if institutional ID numbers are not available). Blacken spaces to indicate ID number.

Use #2 Pencil

1. flashlight	1) flas-hli-ght	2) flash-li-ght	3) flash-light	4) fla-shl-ight
2. recycle	1) re-cy-cle	2) rec-ycle	3) re-cyc-le	4) rec-y-cle
3. lagoon	1) lag-o-on	2) la-go-on	3) la-goon	4) lag-oon
4. grackle	1) grac-kle	2) grack-le	3) gra-ckle	4) grackl-e
5. ablution	1) ab-lut-ion	2) a-blu-tion	3) ab-lu-tion	4) a-blut-ion
6. crochet	1) cro-chet	2) croc-het	3) crochet	4) croch-et
7. involved	1) inv-olved	2) in-volved	3) in-vol-ved	4) in-volv-ed
8. hydrofoil	1) hyd-rof-oil	2) hy-drof-oil	3) hy-dro-foil	4) hyd-ro-foil
9. furrow	1) furrow	2) furr-ow	3) fu-rrow	4) fur-row
10. workable	1) wor-ka-ble	2) work-a-ble	3) wor-kab-le	4) work-able
11. detection	1) de-tect-ion	2) det-ec-tion	3) de-tec-tion	4) det-ect-ion
12. dislocate	1) dis-lo-cate	2) di-slo-cate	3) dis-loc-ate	4) dis-lo-ca-te
13. infallible	1) in-fall-i-ble	2) inf-al-lib-le	3) in-fal-li-ble	4) in-fal-lib-le
14. telephone	1) tel-eph-one	2) tel-e-phone	3) te-le-phone	4) tele-phone
15. torpedo	1) torp-ed-o	2) torp-e-do	3) tor-pe-do	4) tor-ped-o
16. mildew	1) mil-dew	2) mildew	3) mild-ew	4) mi-ldew
17. unpopular	1) un-po-pu-lar	2) un-pop-ul-ar	3) un-pop-u-lar	4) un-po-pul-ar
18. decree	1) dec-ree	2) de-cree	3) decr-ee	4) decree
19. cherub	1) ch-er-ub	2) che-rub	3) cherub	4) cher-ub
20. backbone	1) back-bone	2) back-bon-e	3) bac-kbo-ne	4) ba-ck-bone
21. extinction	1) ex-tinct-ion	2) ex-tinc-tion	3) ext-inc-tion	4) ext-inct-ion
22. bleacher	1) bleac-her	2) ble-ach-er	3) bleach-er	4) blea-cher
23. pickle	1) pic-kle	2) pi-ckle	3) pickl-e	4) pick-le
24. crucifix	1) cruc-i-fix	2) cru-ci-fix	3) cru-cif-ix	4) cruc-if-ix
25. catalog	1) cat-a-log	2) cat-al-og	3) ca-tal-og	4) ca-ta-log
26. connected	1) conn-ec-ted	2) con-nec-ted	3) conn-ect-ed	4) con-nect-ed
27. victim	1) vict-im	2) vi-ctim	3) vic-tim	4) vi-ct-im
28. archive	1) ar-chive	2) arc-hive	3) arch-ive	4) ar-chi-ve
29. chicken	1) chi-cken	2) ch-ick-en	3) chicke-n	4) chick-en
30. lunacy	1) lun-a-cy	2) lu-nac-y	3) lu-na-cy	4) lun-ac-y
31. seclusion	1) se-clu-sion	2) sec-lu-sion	3) se-clus-ion	4) sec-lus-ion
32. jello	1) jell-o	2) je-llo	3) jello	4) jel-lo
33. obstruct	1) obst-ruct	2) ob-struct	3) obstr-uct	4) obs-truct
34. affected	1) af-fect-ed	2) aff-ect-ed	3) af-fec-ted	4) aff-ec-ted
35. roadway	1) ro-ad-way	2) road-way	3) roa-dway	4) ro-a-dwa-y

36. consensus	1) cons-en-sus	2) con-sens-us	3) con-sen-sus	4) cons-ens-us
37. cuticle	1) cut-i-cle	2) cu-ti-cle	3) cut-ic-le	4) cu-tic-le
38. prudent	1) prud-ent	2) pru-de-nt	3) prudent	4) pru-dent
39. limit	1) limit	2) lim-it	3) li-mit	4) lim-i-t
40. protective	1) pro-tec-tive	2) prot-ec-tive	3) pro-tect-ive	4) prot-ect-ive
41. camphor	1) camp-hor	2) camph-or	3) ca-mp-hor	4) cam-phor
42. exclusive	1) ex-clus-ive	2) exc-lu-sive	3) ex-clu-sive	4) exc-lus-ive
43. enchantment	1) ench-ant-ment	2) en-chant-ment	3) en-chan-tment	4) enc-hant-ment
44. devised	1) de-vis-ed	2) dev-i-sed	3) de-vised	4) dev-is-ed
45. confided	1) con-fid-ed	2) conf-id-ed	3) con-fi-ded	4) conf-i-ded
46. dogcart	1) dog-ca-rt	2) dog-car-t	3) dog-cart	4) do-g-cart
47. betray	1) bet-ray	2) betr-ay	3) be-tra-y	4) be-tray
48. agree	1) agree	2) a-gree	3) ag-ree	4) ag-re-e
49. musical	1) mus-i-cal	2) mus-ic-al	3) mu-sic-al	4) mu-si-cal
50. sickle	1) si-ckle	2) sic-kle	3) sick-le	4) sickl-e
51. flannel	1) flan-nel	2) flann-el	3) fla-nnel	4) fl-an-nel
52. circumstance	1) cir-cums-tance	2) cir-cum-stance	3) circ-um-stance	4) circ-ums-tance
53. rapidly	1) rap-idl-y	2) rap-i-dly	3) ra-pid-ly	4) rap-id-ly
54. monocle	1) mon-oc-le	2) mon-o-cle	3) mo-no-cle	4) mo-noc-le
55. doorstep	1) door-step	2) do-or-step	3) do-ors-tep	4) door-st-ep
56. reproduce	1) rep-ro-duce	2) re-pro-duce	3) re-prod-uce	4) rep-rod-uce
57. microwave	1) mic-ro-wave	2) mi-crow-ave	3) mic-row-ave	4) mi-cro-wave
58. lizard	1) li-zard	2) liz-ard	3) liz-a-rd	4) li-za-rd
59. shrouded	1) shroud-ed	2) shro-ud-ed	3) shr-oud-ed	4) shrou-ded
60. original	1) or-ig-i-nal	2) o-ri-gi-nal	3) or-ig-in-al	4) o-rig-i-nal
61. bethel	1) bet-hel	2) beth-el	3) bethel	4) be-thel
62. delirious	1) del-ir-i-ous	2) de-lir-i-ous	3) de-li-ri-ous	4) del-ir-ious
63. kernel	1) kern-el	2) ke-rn-el	3) ker-nel	4) ker-ne-l
64. shipload	1) shi-plo-ad	2) ship-lo-ad	3) sh-ip-load	4) ship-load
65. interfere	1) int-er-fere	2) in-ter-fere	3) in-ter-fer-e	4) int-erf-ere
66. engraved	1) eng-raved	2) eng-rav-ed	3) en-grav-ed	4) en-graved
67. jubilant	1) jub-i-lant	2) ju-bi-lant	3) jub-il-ant	4) ju-bil-ant
68. garnish	1) garn-ish	2) gar-ni-sh	3) garn-i-sh	4) gar-nish
69. wagon	1) wa-gon	2) wa-go-n	3) wag-on	4) wag-o-n
70. corpuscle	1) cor-pus-cle	2) corp-us-cle	3) cor-pusc-le	4) corp-usc-le

71. budded	1) budd-ed	2) bu-dded	3) bud-de-d	4) bud-ded
72. saliva	1) sal-i-va	2) sa-li-va	3) sa-liv-a	4) sal-iv-a
73. constellate	1) cons-tel-late	2) con-stell-ate	3) cons-tell-ate	4) con-stel-late
74. athletic	1) ath-let-ic	2) ath-le-tic	3) a-thle-tic	4) athle-tic
75. tropic	1) tro-pic	2) tr-op-ic	3) tro-pi-c	4) trop-ic
76. falcon	1) falc-on	2) fa-lcon	3) fal-con	4) fa-lc-on
77. seventeen	1) sev-en-teen	2) sev-ent-een	3) seven-teen	4) sev-en-te-en
78. translocation	1) tran-slo-ca-tion	2) trans-loc-a-tion	3) trans-lo-ca-tion	4) tran-sloc-a-tion
79. upstart	1) ups-tart	2) up-start	3) upst-art	4) up-sta-rt
80. canned	1) can-ned	2) cann-ed	3) canned	4) ca-nned
81. brickle	1) brick-le	2) brickl-e	3) bri-ckle	4) bric-kle
82. digit	1) di-git	2) di-gi-t	3) dig-it	4) dig-i-t
83. utility	1) ut-il-it-y	2) u-til-i-ty	3) u-til-it-y	4) ut-il-i-ty
84. rancher	1) ran-cher	2) ran-ch-er	3) ra-nch-er	4) ranch-er
85. dabbed	1) dab-bed	2) dabb-ed	3) dabbed	4) da-bbed
86. indicate	1) in-di-cate	2) ind-i-cate	3) in-dic-ate	4) ind-ic-ate
87. parlay	1) pa-rlay	2) parlay	3) parl-ay	4) par-lay
88. admitted	1) adm-it-ted	2) ad-mit-ted	3) ad-mitt-ed	4) adm-itt-ed
89. belabor	1) bel-a-bor	2) be-lab-or	3) bel-ab-or	4) be-la-bor
90. calfskin	1) calfs-kin	2) cal-fsk-in	3) calf-skin	4) calf-sk-in
91. descend	1) de-scend	2) des-cend	3) desc-end	4) de-sce-nd
92. credible	1) cre-di-ble	2) cred-i-ble	3) cred-ib-le	4) cre-dib-le
93. objected	1) obj-ect-ed	2) ob-jec-ted	3) obj-ec-ted	4) ob-ject-ed
94. legend	1) le-gend	2) leg-end	3) le-ge-nd	4) legend
95. forbidding	1) for-bid-ding	2) forb-id-ding	3) for-bidd-ing	4) forb-idd-ing
96. funny	1) funny	2) funn-y	3) fun-ny	4) fu-nny
97. truthfulness	1) truth-fuln-ess	2) tru-thful-ness	3) tru-thfu-lness	4) truth-ful-ness
98. fathom	1) fa-thom	2) fath-om	3) fat-hom	4) fa-tho-m
99. muffle	1) muf-fle	2) muff-le	3) mu-ffle	4) muffl-e
100. underwrite	1) under-write	2) und-er-write	3) un-der-wri-te	4) un-der-write

Syllabication Skills Test

FORM B-1

Name_____ I.D._____

School_____

DIRECTIONS: Re-write the words by syllables (Example: fa-ga-ceous)

1. flashlight _____
2. recycle _____
3. lagoon _____
4. grackle _____
5. ablution _____
6. crochet _____
7. involved _____
8. hydrofoil _____
9. furrow _____
10. workable _____
11. detection _____
12. dislocate _____
13. infallible _____
14. telephone _____
15. torpedo _____
16. mildew _____
17. unpopular _____
18. decree _____
19. cherub _____
20. backbone _____
21. extinction _____
22. bleacher _____
23. pickle _____
24. crucifix _____
25. catalog _____
26. connected _____
27. victim _____
28. archive _____
29. chicken _____
30. lunacy _____
31. seclusion _____
32. jello _____
33. obstruct _____
34. affected _____
35. roadway _____
36. consensus _____
37. cuticle _____
38. prudent _____
39. limit _____
40. protective _____
41. camphor _____
42. exclusive _____
43. enchantment _____
44. devised _____
45. confided _____
46. dogcart _____
47. betray _____
48. agree _____
49. musical _____
50. sickle _____

51. flannel _____
52. circumstance _____
53. rapidly _____
54. monocle _____
55. doorstep _____
56. reproduce _____
57. microwave _____
58. lizard _____
59. shrouded _____
60. original _____
61. bethel _____
62. delirious _____
63. kernel _____
64. shipload _____
65. interfere _____
66. engraved _____
67. jubilant _____
68. garnish _____
69. wagon _____
70. corpuscle _____
71. budded _____
72. saliva _____
73. constellate _____
74. athletic _____
75. tropic _____
76. falcon _____
77. seventeen _____
78. translocation _____
79. upstart _____
80. canned _____
81. brickle _____
82. digit _____
83. utility _____
84. rancher _____
85. dabbed _____
86. indicate _____
87. parlay _____
88. admitted _____
89. belabor _____
90. calfskin _____
91. descend _____
92. credible _____
93. objected _____
94. legend _____
95. forbidding _____
96. funny _____
97. truthfulness _____
98. fathom _____
99. muffle _____
100. underwrite _____

APPENDIX E

PARTICIPATING INSTITUTIONS BY TYPE AND LOCATION

TABLE 17

PARTICIPATING INSTITUTIONS BY TYPE AND LOCATION

Institution	Type	Location
Dana College	Lutheran	Nebraska
East Central State College	State	Oklahoma
East Texas State University	State	Texas
Eastern Montana University	State	Montana
Florida State University	State	Florida
Mississippi State University	State	Mississippi
Northern Kentucky University	State	Kentucky
Oklahoma Christian College	Church of Christ	Oklahoma
Oregon State University	State	Oregon
Rutgers University	State	New Jersey
University of Arizona	State	Arizona
University of Oklahoma	State	Oklahoma
University of South Carolina	State	South Carolina
Western Michigan University	State	Michigan

APPENDIX F

DISTRIBUTION AND FREQUENCY OF GENERALIZATIONS BY TEST ITEM

TABLE 18

GENERALIZATIONS APPLICABLE BY TEST ITEMS (FORM A)

Test Item	Generalization								
	1	2	3	4	5	6	7	8	9
1									1
2					1			1	
3	1								
4								1	
5					1	1			
6			1						
7							1		
8	1		1						
9				1					
10						1		1	
11					1	1			
12				1	1				
13				1	1			1	
14	1	1	1						
15	1								
16				1					
17					1	1			
18			1						
19		1							
20									1
21					1	1			
22						1			
23								1	
24	1								
25	1	1							
26			1				1		
27				1					
28			1			1			
29			1						
30	1								
31					1	1			
32				1					
33					1				
34					1		1		
35									1
36				1		1			
37					1			1	
38	1								
39		1							
40					1	1			
41			1						
42				1		1			
43			1						
44					1		1		
45					1		1		
46									1
47					1				
48			1						
49	1								
50								1	

TABLE 18 (Continued)

Test Item	Generalization								
	1	2	3	4	5	6	7	8	9
51				1					
52				1	1				
53					1	1			
54		1						1	
55									1
56					1	1			
57			1		1				
58		1							
59					1		1		
60	2	1					1		
61			1						
62	1					1			
63				1					
64									1
65				1	1				
66					1		1		
67	1								
68				1					
69		1							
70	1							1	
71							1		
72	1					1			
73				1	1				
74			1			1			
75		1							
76				1					
77				1					
78	1				1	1			
79									1
80							1		
81								1	
82		1							
83		1				1			
84						1			
85							1		
86				1	1				
87				1					
88					1		1		
89					1	1			
90									1
91					1				
92					1			1	
93					1		1		
94		1							
95				1	1				
96				1					
97						1			
98								1	
99			1						
100				1					

TABLE 19

GENERALIZATIONS APPLICABLE BY TEST ITEMS (FORM B)

Test Item	Generalization								
	1	2	3	4	5	6	7	8	9
1									1
2					1			1	
3	1								
4								1	
5					1	1			
6			1						
7					1		1		
8			1		1				
9				1					
10						1		1	
11					1	1			
12	1				1				
13				1	1			1	
14		1			1				
15	1			1					
16				1					
17	1	1							
18			1						
19		1							
20									1
21					1	1			
22						1			
23								1	
24	1								
25	1	1							
26				1			1		
27				1					
28			1						
29			1						
30	1					1			
31					1	1			
32				1					
33					1				
34					1		1		
35									1
36				1	1				
37	1							1	
38	1								
39		1							
40					1	1			
41			1						
42					1	1			
43					1	1			
44					1		1		
45					1		1		
46									1
47					1				
48			1						
49	1					1			
50								1	

TABLE 19 (Continued)

Test Item	Generalization								
	1	2	3	4	5	6	7	8	9
51				1					
52				1	1				
53		1				1			
54		1						1	
55									1
56	1				1				
57			1		1				
58		1							
59							1		
60	1	1							
61			1						
62	1	1				1			
63				1					
64									1
65				1	1				
66					1		1		
67	1								
68				1					
69		1							
70				1				1	
71							1		
72	1								
73				1	1				
74						1			
75						1			
76				1					
77		1				1			
78	1				1				
79									1
80							1		
81								1	
82		1							
83	1					1			
84						1			
85							1		
86	1				1				
87				1					
88					1		1		
89	1				1				
90									1
91					1				
92		1						1	
93					1		1		
94		1							
95				1		1			
96				1					
97						1			
98			1						
99								1	
100				1					

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