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ABSTRACT

This study grew out of an objective of the Upper Cumberland Reading Project, funded under Title III of the Elementary and Secondary Education Act and serving 13 Appalachian counties of Tennessee. The objectives called for development of a diagnostic test especially suited to the needs of rural mountain children to be used by teachers as an aid to grouping pupils for reading instruction. The lexical cloze technique was applied to selection judged representative of the language and experiences of children in grades 1 through 12. Pupils participating in a longitudinal evaluation of the effectiveness of other Title III teaching techniques at two demonstration schools were administered Language Experience Approach (LEA) cloze tests in March 1973, and again in March 1974. Raw scores on the locally-made instrument were compared with those of the same pupils on reading related subtests of the Stanford Achievement Test, given in 1973. It was concluded that the LEA instrument had potential as a quickly administered, easily scored test of comprehension--based on the pupils' own idioms and experiences--for use by teachers in forming instructional groups. (WR)

A LONGITUDINAL STUDY OF THE EFFECTIVENESS OF THE LANGUAGE EXPERIENCE APPROACH COMBINED WITH A FORM OF THE CLOZE PROCEDURE AS A MEANS OF PREDICTING READING PERFORMANCE AMONG RURAL APPALACHIAN PUPILS

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ABSTRACT

This study grew out of an objective of the Upper Cumberland Reading Project, funded under Title III of the Elementary and Secondary Education Act and serving 13 Appalachian counties of Tennessee. The objective called for development of a diagnostic test especially suited to the needs of rural mountain children to be used by teachers as an aid in grouping pupils for reading instruction.

Itinerant teachers on the project staff gathered samples of the writings of Upper Cumberland children, produced as part of language experience approach activities. Selections judged representative of the language and experiences of children in grades 1_2 through 9 were chosen for inclusion in a test booklet. To them was applied the lexical cloze, multiple choice format. In this variation of the cloze technique, all nouns, main verbs, and adjectives are identified; every fifth word in these categories then is deleted and replaced in a story by a blank; and the five deleted words are paired with distractor words of the same parts of speech and inserted into the story after the line containing every fifth deletion.

Pupils participating in a longitudinal evaluation of the effectiveness of other Title III teaching techniques at two demonstration schools took the LEA-cloze tests in March, 1973, and again in March, 1974. Raw scores on the locally-made instrument were compared with those of the same pupils on reading related subtests of the Stanford Achievement Test, given in May, 1973. The Pearson Product Moment Correlation was used in analyzing data from the two tests. Positive correlations significant at the .05 level were derived during both years of the study for pupils receiving the same pre-test treatment. Association was stronger each year for pupils in the lower elementary grades than for those in the upper elementary grades.

It was concluded that the LEA-cloze instrument had potential as a quickly administered, easily scored test of comprehension, based on pupils' own idiom and experiences, for use by teachers in forming instructional groups.

A LONGITUDINAL STUDY OF THE EFFECTIVENESS OF THE LANGUAGE EXPERIENCE APPROACH COMBINED WITH A FORM OF THE CLOZE PROCEDURE AS A MEANS OF PREDICTING READING PERFORMANCE AMONG RURAL APPALACHIAN PUPILS

This paper reports on a three-year study by a Title III ESEA project conducted in response to one of the project's open objectives: to develop diagnostic procedures especially suited to the needs of rural disadvantaged children for use by teachers in forming ability groups for reading instruction.

The study covered the years 1971 through 1974. Part of the activities of the Upper Cumberland Reading Project, which served an Appalachian region in Tennessee, centered on the use of stories written or dictated by the region's pupils during language experience activities as the basis for diagnostic instruments. Two forms of the cloze technique were applied to the pupil-produced material, and the resulting tests were given to children in Title III ESEA classes. Raw scores from the locally-made instruments were compared with raw scores from reading-related subtests of the Stanford Achievement Test, given in connection with the evaluation of other project objectives.

This report deals with the context of the ESEA III project, a description of its activities and research related to meeting the objectives given in the first paragraph. Emphasis is on reporting the research procedures and findings of the last two years, 1972-73 and 1973-74. A discussion of the implications of the study and further research suggested by it concludes the paper.

Context and Description of Project

The Upper Cumberland Reading Project, funded under Title III of the Elementary and Secondary Education Act, served 13 Tennessee counties comprising a rough triangle about equidistant from three major cities: Nashville, Knoxville, and Chattanooga. The counties were one of 10 regions in the State designated by the Tennessee State Department of Education for the administration of ESEA III grants. They were Clay, Cumberland, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Trousdale, Van Buren and White. Putnam County served as fiscal agent for the region, and project offices were at Baxter Elementary School, about 10 miles from Cookeville in Putnam County.

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A rural-small town region with an economy gradually changing from emphasis on such extractive industries as lumbering and coal mining to a more balanced one with some heavy manufacturing and livestock farming, the Upper Cumberlands still trail the State in per-capita income, quality of housing, adequate roads and other quality-of-life indicators. The region is sparsely populated, as indicated by a total student enrollment of 37,583, as of 1973-74, in the 13 counties. The population is predominatly white, and the dropout rate between grades 1 and 12 is about 50 percent, according to past studies. The only major private school in the region is a military academy for boys through junior high school age.

There are no city school systems in the region, and all county school superintendents are elected by popular vote. In at least some counties, school board members attempt to control employment of school personnel in the areas they represent. In other Upper Cumberland counties, election of such personnel is relatively free of political influence. All school boards must submit their budgets to county or quarterly courts, which are legislative bodies. Traditionally, Upper Cumberland quarterly courts have been reluctant to appropriate large sums for education, although local funding of education is increasing in at least some counties.

A trend toward school consolidation, helped in part by State regulations governing the minimum size of schools eligible to receive State funds, has reduced the number of small schools in the region.

In 1969, assisted by the Upper Cumberland's first ESEA III project, the only coordinated region-wide testing program was conducted. This was done by the State Testing Bureau, with the Stanford Achievement Test and other instruments given at the same time in each county to grades 5, 8, and 10. Results indicated that Upper Cumberland pupils were reading well below state and national norms. As a result, a planning committee composed of supervisors of instruction sought assistance in developing an ESEA III proposal in reading. Consultants from at least three State universities and the first ESEA III project, which was due to end in 1970, assisted in preparing the proposal, which was approved by the State Department of Education. The result was the Upper Cumberland Reading Project, which began operations June 15, 1971, and ended July 31, 1974.

The reading project was based on two major research studies, by Chall, and Bond and Dykstra, as reported in The Reading Crisis. These indicated that a number of teaching methods probably were better than any single approach to reading instruction but that the most important element in a child's learning to read was not the method, equipment, nor material used, but the ability and enthusiasm of the teacher.

A lesson learned from the region's first ESEA III project was that teachers were unable, because of heavy class loads, to visit Title III demonstration centers for any worthwhile period of time. When visitors were present, the Title III teachers often had so many instructional

duties of their own that they did not have time to talk at length with the observers.

Building on these experiences, the second project established a structured teacher-exchange program based on models of the change process as its principal dissemination/diffusion vehicle. Demonstration centers were established at Baxter Elementary School in Putnam County and Wilson Elementary School in Overton County, and three ESEA III personnel were assigned to each center. One, the center director, taught reading classes for selected children from the two demonstration schools. The other two ESEA III staff members were itinerant training specialists. Their job was to substitute for teachers from other schools throughout the region for five days, freeing the latter to attend the demonstration schools, and later to work with the exchange teachers for two days when the exchange teachers returned to their home schools.

Following steps in change models of Rogers and others, the Upper Cumberland exchange program was designed first to make teachers aware of and interested in exemplary teaching practices, then to permit them to evaluate and try these in a non-threatening environment away from their home schools, and finally to provide help, on a one-to-one basis, in implementing the practices they had observed and tried in the center schools. Besides the two days of in-school assistance by itinerant specialists at the end of each exchange, participating teachers later were visited by a follow-up specialist provided by the project to help them adapt the kinds of reading instruction demonstrated in the centers to each teacher's unique local situation. The project sought, in part, to provide what the Ford Foundation described as a new kind of support personnel who "provide a form of inservice education in the classroom, teaching demonstration classes and giving teachers suggestions in implementing new approaches."

The instructional approach suggested by the project was effective use of the basal reading textbook, following the five steps in teaching a basal lesson as given by Spache. These were supplemented, in line with the findings of Bond and Dykstra, with the language experience approach, teacher-made instructional games and other materials to reinforce specific reading skills, and one form of criterion-referenced instrument from the Instructional Objectives Exchange. The last mentioned was used as an exercise to help build narrowly defined reading skills in word attack and comprehension, such as finding the main idea of a story, following the sequence of events, and drawing conclusions from what was read. The 1969 area-wide testing program and tests given at the beginning and end of the project's first year suggested that comprehension skills were a special need of the region's students and could be one reason for their poor performance on nationally normed tests.

The project's instructional approach was built around the basal text because of its use in all of the region's school systems. Methods were designed to be used in any kind of school setting, although oriented toward the self-contained classroom still predominant in Upper Cumberland

schools. During two summers, the project staff developed a series of materials to help teachers supplement their basal texts. The materials included a unit containing lesson plans on the Upper Cumberland region as a geographical entity and on some of its famous persons and historial sites, plus a manual of instructional games which could be used in building specific skills at lower elementary or upper elementary levels. These materials were disseminated to all elementary schools in the region and were given to exchange teachers during the second and third years of the project.

Demonstration classes were taught by center directors at Baxter and Wilson schools, for two purposes: 1) to evaluate the effectiveness of the instructional approaches used, and 2) to provide a living laboratory for visiting teachers. For purposes of longitudinal evaluation, different grades were taught each year: Grades one and four the first year, grades two and five the second, and grades three and six the third. Although there was considerable attrition during the three years of the project because of transfers and dropouts, there remained a core of students on both the primary and intermediate levels who had been in ESEA III reading classes the entire three years of the project. Center directors usually worked with three or four sections of students each day and spent the remainder of the day conferring with visiting teachers, critiquing the day's reading lesson and planning the next day's lesson.

No special equipment, such as reading machines, were used. Only common audio-visual items, such as overhead projectors and tape recorders, which are found in most schools, were employed to any degree. The project purchased few commercial materials for students. ESEA III center directors and itinerant personnel tried to help exchange teachers learn to use effectively whatever basal texts their counties had adopted. Major expenditures were for "raw" materials to use in making instructional games, such as poster board, white glue, felt-tip markers and book-binding tape. Major dissemination expenses were for duplicating and distributing supplementary instructional materials, such as the manuals and units mentioned earlier.

Total expenditures for the three years of the project were approximately $480,000, all from ESEA III funds. Putnam County supplied, as in-kind contributions, the services of the school system's bookkeeper and payroll clerk, plus space for one demonstration center and for the project office, as well as utilities and custodial services. Overton County supplied as in-kind contributions space for the second demonstration center, utilities and custodial services. Per-learner costs are difficult to estimate, considering the different lenghts of time three major target groups were involved in project activities. There were approximately 150 students at the two centers who received instruction throughout each school year. Approximately 50 teachers from other schools annually took a part in activities totaling nine days (a one-day orientation visit by ESEA III personnel, five days at a demonstration center, two days' follow-up work with the itinerant specialists when exchange teachers returned to their classrooms, and one day with the follow-up specialist). In addition, approximately 1,700 students of visiting teachers were involved each year

for five days, the period of time ESEA III itinerant specialists worked directly with them while their regular teachers were at the demonstration centers. (During this time, the specialists did not attempt to duplicate the work of the regular teachers, but concentrated on enrichment activities in reading, including use of the Upper Cumberland unit, instructional games, and language experience activities. Demonstration of the language experience approach was another open or activity-oriented objective of the project. The specialists' work also was designed to help other teachers in the schools to become familiar with the ESEA project, so that there would be some support from a teacher's students and other faculty for continuing the ESEA III approach to reading instruction.)

A more realistic way to estimate the project's cost effectiveness could be to assume that:

1. Each teacher who participated in exchanges would continue to work in Upper Cumberland schools an average of 15 years.

2. Each teacher would have an average of 25 pupils per year.

Using this method, a cost-per-pupil figure, spread over 15 years, would be approximately $8.50.

Demonstration teaching in the centers and follow-up work were structured around a series of objectives for visiting teachers, based on the five steps in teaching a basal lesson as given by Spache, and stated in terms of observable teacher performances.

The project employed two center directors, four itinerant specialists, one follow-up specialist, six aides, a project director, and a secretary-bookkeeper, a total of 15 persons, two assigned to administration and 13 to instruction.

The procedures involved in a teacher-exchange and steps in the change process which each procedure paralleled are shown in Figure 1, on the following page.

Statement of Problem

The Upper Cumberland Reading Project, as previously noted, had as one of its objectives the development of a diagnostic technique especially suited to the needs of the region's teachers and the cultural background of its pupils. To accomplish this objective, it was projected that the technique should:

1. Relate to the language and experiences of rural mountain children who often travel little outside their immediate communities and who have few reading materials in their homes.

2. Provide a rough basis for teachers to use in forming ability groups for reading instruction at the first of a school year.

STEPS IN CHANGE PROCESS	ESEA III PROCEDURES
Awareness Interest	Day 1: Itinerant teacher visits exchange participant in regional school, explains purposes and techniques of exchange. Printed material earlier had been mailed to participants, orienting them to project procedures and instructional approaches.
Awareness Interest Trial Evaluation	Days 2-6: Exchange participant works at demonstration center with center director, observing and discussing exemplary techniques of teaching reading and, in latter part of this phase, participating in teaching reading to center pupils. ESEA III itinerant teacher replaces exchange participant in her home school.
Implementation (Adoption)	a) Days 7-8: Exchange participant returns to her home school and observes center techniques being used to teach reading to her own pupils. She assists itinerant teacher in these activities. b) Follow-up specialist visits former exchange teacher for one additional day; emphasis is on "trouble shooting" any problems of latter in implementing center techniques.

Figure 1. Comparison of Change Process and Procedures of Upper Cumberland Reading Project.

3. Be administered to an entire class in a short time.

4. Be easily scored and interpreted by teachers.

Before the ESEA III project, few elementary school teachers in the region used ability groups for reading instruction, for two reasons: They did not feel confident of their own ability to group children properly, and they were unsure of their ability to work with several groups at once. Teachers of the region often lacked access to or confidence in achievement test results, they were unsure of how to interpret results of such tests, and they lacked the time and training to give informal reading inventories to children on an individual basis.

Related Research

The language experience approach (LEA) has been identified as one way to encourage language arts' development among children who grow up hearing and speaking a language often quite different from the standard English of many textbooks. Although there are a variety of LEA activities, the approach usually involves pupils in talking, reading, and writing about their own experiences, in their own idiom. Beginning pupils may dictate stories about their experiences to their teacher, who transcribes the material verbatim on newsprint or large chart tablets.

The children then learn to read this material, written in their own words and about their own experiences, before progressing to textbooks and other published material.

Kingston and Weaver combined the language experience approach with cloze techniques to try to develop a non-biased reading readiness test for first grade rural disadvantaged children in Georgia and North Carolina. Using materials dictated by pupils, they constructed several forms of cloze tests.

The cloze procedure is designed to develop and/or test pupil comprehension of written material. It basically consists of mechanically deleting certain words in a selection and then having pupils supply the missing words. Among the forms of cloze tests used by Kingston and Weaver were the following:

1. Any-word cloze, with every nth word (such as every fifth or tenth word) deleted and replaced by a blank to be completed by pupils.

2. Multiple choice, structural cloze, in which "each word to be deleted is paired with a distracter of the same grammatical class. After every five cloze deletions the 10 words are listed across the page, under the relevant material, in a random order (p. 209)."

3. Lexical cloze, multiple choice, with deleted words confined to nouns, main verbs and adjectives. Every fifth word which is one of these

parts of speech is deleted, paired with a distractor of the same grammatical class, and arranged as in the multiple choice, structural cloze.

Children participating in the study also were given at various times during one school year the Lee-Clark Readiness Test, the Ginn Pre-Primer Test, the Ginn Primer Test, and the California Achievement Test, with the last mentioned procedure administered in May. All cloze tests were given in February and March, after use of cloze techniques in reading instruction during the preceding months.

The cloze tests were found to be better predictors of achievement test scores than readiness and basal reader instruments. The best single predictor of California Reading Test scores was the lexical cloze, multiple choice. Test-retest reliability for the three forms of the cloze test were .91, structural cloze; .78, any-word cloze, and .76, lexical cloze.

Background and Procedure of Upper Cumberland Study

Working at first without knowledge of the research cited above, the staff of the 13-county ESEA III project in 1971 began developing a similar approach to the problem of providing teachers with a simple and fairly reliable basis for ability grouping of pupils for reading instruction. Since another project objective was demonstrating use of the language experience approach, roving teachers from the project were able to collect many LEA samples from throughout the region. From these were chosen selections dictated by pupils in all elementary grades, from the second semester of the first grade through grade six.

The any-word cloze procedure then was used, with every fifth word in each selection deleted and replaced by a blank. Two packets of material were made up, one with LEA selections by children in grades 1_2 through 3, the second 4 through 6. The respective test booklets then were given to all 150 first and fourth grade pupils who had been attending ESEA III reading classes in two demonstration centers. There were no special preparation of pupils and no time limit for the tests.

Rankings of center pupils on the cloze tests were compared with those of the same children on the Stanford Achievement Test given at the end of 1971-72 school year as part of the project's evaluation. There was no rank order correlation of any statistical significance.

1972-73 Procedures

Kingston and Weaver's work meantime had come to the attention of the project staff, and in 1972-73 the lexical cloze, multiple choice approach was adapted to the LEA material dictated by Upper Cumberland pupils. The same selections were used as with the any-word cloze; but every fifth noun, adjective other than articles, and major verb, excluding auxiliaries, were deleted. The deleted words were grouped with five distractor words of the

same parts of speech, and these 10 words were listed across the page, in random order, under the relevant reading material. A sample page from the lexical cloze, multiple choice is illustrated in Figure 2.

Fifth and second grade pupils at each demonstration center were respectively randomly divided into two groups. The revised cloze tests were given to all 120 ESEA III pupils at both demonstration centers during the final semester of 1972-73. (As previously noted, to permit longitudinal evaluation of ESEA III instructional techniques and to encourage demonstration center visits by teachers in all elementary grades, the project was designed to involve pupils from grades 1 and 4 in demonstration classes during the project's first year, 2 and 5 the second, and 3 and 6 in the third and final year. There were some losses from the original group of 150 students each year, as will be discussed later.)

Before the second year's testing, practice activities adapted from those suggested by Kingston and Weaver were used in each center with one group of second and fifth grade pupils, while comparison groups in the same grades received no special preparation for the cloze materials. The latter groups, working under aides, did comprehension exercises of the kind found in many reading workbooks. The second and fifth grade groups receiving special practice with cloze exercises engaged in slightly different activities at each center:

1. Stories originally dictated by Upper Cumberland children and used in constructing the cloze tests were duplicated without deletions and given to pupils at one center to read. The pupils then practiced substituting words for deleted nouns, main verbs and adjectives, as well as determining the meaning of sentences with such words omitted.

2. Pupils receiving special preparation at the other center followed the same procedure except that they dictated their own stories instead of using those collected by ESEA III teachers as the basis for practice exercises. At both centers the groups doing cloze exercises worked under supervision of ESEA III center directors. Total pretest practice time for each of these groups was approximately three hours, spread across three consecutive school days.

Lexical cloze, multiple choice test booklets then were given at the same time to all groups. Second graders had exercises for levels 1_2 through 4, fifth graders 1_2 through 6. Pupils were asked to complete as many levels as they could. There was no time limit, and the testing was made as much of a game as possible to lessen the children's apprehension about testing. Tests were administered in March of 1972-73 by the directors of the two ESEA III demonstration centers.

At the end of the same school year, 1972-73, second and fifth grade pupils in the two ESEA III demonstration centers were given reading-related subtests of the Stanford Achievement Test as part of the project's continuing evaluation. Subtests used were paragraph meaning, word meaning, and word study skills in grade 2; and, in grade 5, word meaning and paragraph meaning.

The coach scolded Randy who was playing the _____of pitcher on the Little League team.

"Why do you refuse to keep your _____on the ball?" the coach asked him.

Randy _____up his nose. He looked disturbed, but wouldn't _____.

"I am very disappointed in you," the coach told him. "You're not _____a very tight game.

playing	position	wrinkled	foot	answer
panting	field	rolled	eye	carry

You usually do much better than this. What's the _____with you today? You're not thinking of resigning from the team, are you?"

The _____was Randy's hero. It made him feel _____to be fussed at. He took a deep breath and a button _____off the front of his shirt.

"Well," Randy began, "my _____is too tight and every time I raise my arm, I _____a button or split a seam."

bad	own	forest	grew	coach	uniform
long	lose	matter	popped	elephant	glove

Figure 2

Lexical Cloze, Multiple Choice

Pearson Product Moment correlations between SAT and cloze test scores were computed to evaluate the value of the locally-made instrument in helping teachers group pupils for reading instruction. The t test was applied to values of r to determine statistical significance.

1973-74 Procedures

Since the project was set up to assess its effectiveness longitudinally on the same two groups of pupils over three years, the LEA-cloze test was administered to as many of the original group who remained in ESEA III classes in the third year of the project. There was an N of 88 in 1973-74, compared to 120 the preceding school year. The decrease was accounted for by dropouts and transfers to other schools and to non-ESEA III classes within the two demonstration schools.

In 1973-74, third grade pupils received test booklets with exercises compiled from material produced by children in grades 1_2 through 6. Sixth graders in Title III classes received booklets with materials for grade levels 4 through 9. LEA selections were gathered from children in grades 7 and 8 at Baxter Elementary School, one of the demonstration schools, and from those in grade 9 at nearby Baxter High School. This procedure was carried out to insure that the sixth grade pupils taking the LEA-cloze would have a range of material both above and below their grade level similar to that for third grade children taking part in the study. Selections deemed typical of the experience and idiom of Upper Cumberland pupils in grades 7-9 were chosen for inclusion in the test booklet, and the same lexical cloze, multiple choice procedure was applied to them as the selections for lower grades. The same selections for grade levels 1_2 through 6 were used as in 1972-73, and the tests again were given in March.

There was no pre-test preparation of pupils for the LEA-cloze test in 1973-74; therefore, the numerous subgroups that resulted from the previous year's procedures were reduced to two, children in the second grade and children in the fifth grade. All tests were administered by the project's follow-up specialist, instead of the two center directors as in the past year, to secure greater uniformity of testing conditions. There again was no time limit; pupils were asked to begin with the first page of their test booklet and to complete as many pages as possible, selecting words from the choices given which seemed to make the most sense in various blanks. It should be noted that every effort was made to select distractor words which, while the same parts of speech as words deleted from stories, were nonsensical when inserted in any of the blanks.

Since the cloze is considered primarily a test of reading comprehension, the total raw scores which children achieved on their test booklets, computed by counting the number of correct answers on all levels of tests in each booklet, were compared with their scores on the paragraph meaning subtest of the Standford Achievement Test given to the same pupils the preceding Spring. This subtest appeared to provide the best measure of reading comprehension in the SAT. The cloze scores were compared with 1972-73

SAT scores because of time pressures connected with completing the final evaluation of the project, which was due to end in July, 1974.

As in 1972-73, Pearson Product Moment correlations were computed to determine the degree of association between scores on the LEA-cloze and the SAT. To see if the resulting coefficients of correlation were statistically significant, the t test was applied to the values of r.

The following null hypothesis was established to test the principal purpose of the study:

> There was no significant relationship between scores of ESEA III pupils on the LEA-cloze test and the reading subtests of the Stanford Achievement Tests.

A significance level of .05 was accepted for rejection of the null hypothesis in both 1972-73 and 1973-74.

1972-73 Results

Computed Pearson r's for the ESEA III groups ranged from .34, a low positive correlation showing a definite but small relationship between performance on the cloze and SAT, to .97, an extremely high positive correlative showing a very dependable relationship between scores on the two instruments. With one exception (.34), the observed values of r were sufficiently large to justify rejection of the null hypothesis. Overall, the magnitude of correlational values indicated a substantial relationship between pupils' scores on SAT subtests and the locally designed instruments.

Groups at the two centers which had no special preparation for the LEA-cloze tests were designated A-1 and A-2. Those which did have pre-test practice under center directors were designated D-1 and D-2. The Pearson r values for the four groups were as follows:

	Center I		Center II	
	A-1	D-1	A-2	D-2
2nd Grade	.96	.77	.73	.61
5th Grade	.58	.51	.62	.34*

It should be noted that, without exception, subgroups receiving no pretest practice had higher correlations than their counterparts. It

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*Due to pupil transfer, the N of D-2 was reduced to nine, approximately half the average membership of the other seven groups.

has been suggested the practice given made the cloze test a worse predictor, since the three hours practice time lacked breadth of effect. In each center, the Pearson r's computed for scores of second graders on the two tests exceeded those of fifth-grade pupils. This pattern was consistent regardless of the kind of pretest preparation. In three cases, the differences between correlational values for primary and intermediate groups were significant at the .05 level. For the fourth case, $p < .15$.

Findings generally supported those of Kingston and Weaver which indicated that LEA material dictated by pupils themselves combined with the lexical cloze, multiple choice format appeared to be a promising method for predicting pupil reading performance. The ESEA III study indicates, as did that of Kingston and Weaver, that the LEA-cloze procedure can be used with primary-level pupils and suggests that it possibly is more effective with these pupils than children in the upper elementary grades.

1973-74 Results

The third year's testing yielded coefficients of correlation of .70 for all third grade pupils attending ESEA III classes at the two demonstration schools and .42 for all ESEA III sixth grade pupils. Values of t obtained for both these correlations exceeded those needed for significance at the .05 level. The results are detailed in Table I. Means, standard deviations and total possible scores for the third and sixth grades on the SAT paragraph meaning subtest and the locally-made LEA-cloze are shown in Tables II and III.

Summary, Conclusions and Recommendations

The any-word cloze technique, when applied to materials written or dictated by Upper Cumberland pupils in grades 1-6, proved ineffective as a means of ranking students. There were no statistically significant coefficients of correlation between this cloze form and reading related subtests of the Stanford Achievement Test.

The lexical cloze, multiple choice, appeared to hold considerable promise as a locally made test of reading comprehension, however. Although different procedures were used in 1972-73 and 1973-74 in connection with pre-test practice, the coefficients of correlation for comparable pupils during each of the two years in which this cloze form was used were sufficiently high to warrant further investigation, especially concerning the instrument's value with primary pupils.

For pupils receiving no pre-test practice in 1972-73, coefficients of correlation for second-grade pupils ranged from .58 to .96. In 1973-74, the coefficient of correlation for all third grade children in

ESEA III classes was .70, and that for sixth-grade pupils was .42. Both coefficients yeilded t values which were significant at the targeted .05 level; that is, there was less than five chances in 100 that the results were achieved by chance. The results of the study in both 1973-74 therefore failed to support the null hypothesis for pupils receiving no pretest practice.

Both the study by the Upper Cumberland Reading Project and that of Kingston and Weaver suggest that the LEA-cloze has value in predicting and/or indicating the levels of reading performance among rural children. The instrument developed by the ESEA III project seems to have met the prescribed criteria: 1) it reflects, at least to a degree, pupils' experience and idiom; 2) it can be given to an entire class in one sitting, and 3) it can be quickly graded and easily interpreted by classroom teachers who wish to rank pupils for the purpose of ability grouping for reading instruction. (A copy of the complete instrument with tests for levels 1_2 through 9 is given in Appendix A.)

Results are immediately available for use in planning and managing classroom instruction. If other scores are available, from either criterion-referenced or norm-referenced instruments, the LEA-cloze can be used to provide a quick check on pupils' comprehension skills and to add to the teacher's accumulated knowledge upon which he or she can base individualized and group instruction in reading.

The longitudinal study by the ESEA III project supports the findings of Kingston and Weaver and in turn suggests other research which could be applied to classroom instruction. This may deal with the value of the LEA-cloze with children in lower elementary grades versus upper elementary grades. In 1972-73 and 1973-74, the ESEA III study yielded higher coefficients of correlation between the LEA-cloze and the SAT for lower elementary children. Use of the LEA-cloze with urban as well as rural children could well form the basis for further study, as would the usefulness of the technique for instructional grouping throughout the year, using later LEA materials written or dictated by pupils as the basis for re-forming ability groups.

In teaching reading, a combination of LEA and cloze techniques could be used as one way of introducing language arts--listening, speaking, and writing as well as reading--to culturally disadvantaged pupils before making the transition to standard English of basal textbooks. Besides giving children a way to relate their own experiences and language to reading, the technique may increase their appreciation of their own heritage and idiom.

It would appear probable that the LEA-cloze should not be used to the exclusion of other diagnostic instruments and methods. It should be supplemented with data from other sources when and where possible. Certainly, no such technique can replace the classroom observation and judgement of a skilled teacher interacting with his or her pupils. Compared with criterion-referenced tests of comprehension based on a

TABLE I

Comparison of Degree of Association Between LEA-Cloze and SAT Paragraph Meaning Subtest, 1973-74

Grade level	Coefficient of correlation	Obtained t values	t values for rejection .05	.01
3rd grade (N=48)	.7018	6.68	2.008	2.678
6th grade (N=44)	.4221	3.00	2.014	2.690

TABLE II

Means, Standard Deviations, and Total Possible Scores

For Third Grade on LEA-Cloze and SAT Paragraph Meaning Subtest, 1973-74

Tests	Means	Standard deviations	Total possible scores
LEA-cloze	31.00	11.45	48
SAT (Primary II, Form X)	24.71	8.25	60*

N=48

*SAT was administered in ninth month of second grade

TABLE III

Means, Standard Deviations, and Total Possible Scores

For Sixth Grade on LEA-Cloze and SAT Paragraph Meaning Subtest, 1973-74

Tests	Means	Standard deviations	Total possible scores
LEA-cloze	60.27	15.19	79
SAT (Intermediate II, Form X)	26.64	10.16	64*

N=44 *SAT was administered in ninth month of fifth grade.

hierarchy of skills and narrowly defined instructional objectives, the LEA-cloze may be a rather gross instrument. It nevertheless may be useful in certain situations, perhaps as a check on other test results; perhaps as a quick indicator for initial instructional grouping on other than a random basis; perhaps for use in schools where sufficient test data on pupils are unavailable or are not being used by teachers as a basis for instruction.

It should be noted that, even with scores from the LEA-cloze, the teacher still must decide on appropriate instructional materials for pupils who appear to be reading at the independent, instructional, or frustration levels. The teacher also should be ready to re-group pupils as they progress or if they obviously are working at the wrong level.

Based on the ESEA III study and the earlier work of Kingston and Weaver, it appears that the procedure described in this report may add another tool to the skilled teacher's collection of techniques for improving the effectiveness of reading instruction. Since pupils in effect write their own material, the LEA-cloze may hold special promise for use with culturally deprived children, whether urban or rural.

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APPENDIX A

Complete LEA-Cloze Test as Compiled

By Upper Cumberland Reading Project, ESEA III

(Number at bottom of each page indicates

grade level from which LEA selection was obtained.)

The sheep on the hill are pretty.

There ___1___ many baby sheep in the springtime. When they _____ up, someone will cut off all their wool. The wool will be _____ into sweaters and other things. The color I _____ best is blue. I would like to have a sweater made from _____ wool.

2 3 4 5

---

grow made are like blue

fall found be read seven

One day my mother told me to go to the store. On the _____ (1) I found a funny rock. It was _____ (2) and round. When I dropped it, it made a loud _____ (3). When I got home, I went into my _____ (4) and looked at it for a long time. My _____ (5) called me and

way	frog	Mother	higher	room
moon	rocket	sight	sound	big

said, "What are you doing?" I said, "I'm not _____ (6) anything." It is fun to have _____ (7) that no one knows you have.

something	going
doing	test

Help! Help! The forest is on _____.
1

The fire in the trees is flaming high.

Soon there will be no _____forest.
2

There will be no green leaves and the

grass will _____ all black. The birds
3

and other forest_____ will have no
4

place to live. The _____will be full of
5

more	airplanes	be	fire	thinkers
cold	streams	sit	word	animals

burned up tree _____ and branches. When
6

it rains, the hills will wash away.

_____ very careful when you walk into
7

a forest. Please don't cause a _____fire.
8

Be	trunks	four
eat	planets	forest

What are the lady and the squirrel doing on the tree _____(1)_____? It may be they are both looking for nuts. Maybe the lady's _____(2)_____ burned down and she is out in the woods just looking for a _____(3)_____. Of course, it could be that an old witch turned _____(4)_____ boyfriend into a squirrel. The lady is thinking about how she can _____(5)_____ him back into a man. Maybe they were both

picture	stump	blue	ask	grass
home	chair	her	turn	house

squirrels at first and a witch _____(6)_____ one of them into a woman. Then again, the lady could be a witch herself and she turned _____(7)_____ into a squirrel. What do you think?

someone	carried
bottles	turned

Do you know what a pirate is? A pirate _____ a
1
man who boards old ships and _____ for treasure.
2
Some pirates have _____cannon guns and they
3
blow up other _____. Usually, pirates are
4
cruel and greedy, and they _____
5

rocks	large	steal	is	have
ships	laugh	looks	does	sweet

from other people. Once I saw a picture of a _____.
6
He had a patch over one eye and a _____ scar
7
running across his cheek. Also, he _____ a large
8
three-cornered hat. It may be he _____
9
his scar fighting other sailors with _____.
10
and swords. He was an evil looking man.

bought	knives	warm	bird	wore
received	buttons	long	pirate	picked

The coach scolded Randy who was playing the _____(1) of pitcher on the Little League team.

"Why do you refuse to keep your _____(2) on the ball?" the coach asked him.

Randy _____(3) up his nose. He looked disturbed, but wouldn't _____(4).

"I am very disappointed in you," the coach told him. "You're not _____(5) a very tight game.

playing	position	wrinkled	foot	answer
panting	field	rolled	eye	carry

You usually do much better than this. What's the _____(6) with you today? You're not thinking of resigning from the team, are you?"

The _____(7) was Randy's hero. It made him feel _____(8) to be fussed at. He took a deep breath and a button _____(9) off the front of his shirt.

"Well," Randy began, "my _____(10) is too tight. and every time I raise my arm, I _____(11) a button or split a seam."

bad	own	forest	grew	coach	uniform
long	lose	matter	popped	elephant	glove

The Escape

There was a prison camp in Texas about five miles from Austin. There were several prisoners in the prison that were being _____(1) hostage.

The ones that owned it would go out and kidnap people and _____(2) them in it. All of the people in the prison were _____(3), and they were treated terribly. There was one man that _____(4) through the prison beating them with whips when they would not _____(5) what they were told.

cash	caught	do	swallowed	men
imagine	walked	held	put	ostriches

The prisoners were locked up in cells. The _____(6) that they had to stay in were small. Two _____(7) were allowed in each room.

A friend of _____(8) men that was locked up in one room went around to the _____(9) opening in the wall. He gave the two men a _____(10) to saw the bars in two with.

toothpick	funnels	people	flabby	two
children	little	rooms	closed	saw

They sawed two of the _____ (11) in two and got out. There were ropes tied together going up high. They stuck the saw through _____ (12) of the holes in the rope and let it fall to the _____ (13). Then they started climbing up the rope. It was quite a _____ (14). When they reached the top they went back down the other _____ (15). They took off and were never seen or heard of again.

side	tower	yellow	bars	drowning
kennel	ground	one	climb	trunks

The Pigeons Take Over

A mysterious girl stands on the corner of a block with pigeons flocked all around her. At her command they take off hunting a place for their _____ (1) catastrophe.

At a near-by farm they spy a _____ (2) doing his chores. They dived upon the farmer and _____ (3) him to death.

After this incident people were terrified to _____ (4). But, these incidents keep on happening day after day.

They were _____ (5) to have to call in "Super Bird," as it was they called in Finky the wonder bird.

---

embraced	going	next	chicken	merry
pecked	death	happiness	farmer	striving

They _____ (6) him to scan the sky as a secret pigeon _____ (7). He starts out following a near-by flock of _____ (8) to a block where they flock around a very mysterious girl.

He then _____ (9) back to headquarters and tells them all about his experience. They _____ (10) to the block and found the girl waiting for her pigeons. They _____ (11) her and put her away so the pigeons would kill no more.

---

juggled	reports	went	told	nab
snarled	pigeons	spy	instruments	beast
	forsake	digests		

Pirates!

Here we are, Jim and I, climbing the rigging of a pirate ship, running for all our lives are worth. But first, how did we get into this predicament?

It all started when Jim and I, Mike Turner, were cabin _____ (1) on the British clipper, Lydia, enroute to the Americas from Great Britain. We had been _____ (2) for two weeks under favorable conditions when the lookout _____ (3) "Sail ho, to the starboard bow!" As she drew nearer we could see that she was _____ (4) the pirate flag and us being sluggish she easily overtook us and boarded us. Hopelessly, we _____ (5).

exercised	locking	boys	crowing	shouted
sailing	steered	flying	surrendered	farmers

She killed most of our crew, us being a few fortunate _____ (6) and took the twenty or so passengers captive.

They _____ (7) us well and took good care of us until they asked us to join their crew of _____ (8) robbers. When we refused, they quickly threw us in irons below _____ (9).

After a couple of days of this we had just about given up hope when they had a _____ (10) party.

shocked	sea	exceptions	bank	fed
slumber	town	merry	deck	additions

The guard was drunk and asleep and the _____ (11) fell out of his pocket. As quietly as I could all chained up, I got the keys. Quickly as possible we _____ (12) each other. We slipped up deck, but not before silencing the _____ (13) for good.

At first we were transfixed by the fresh sea _____ (14) and sudden glare of sunlight. As we came to our _____ (15) we saw a crowd gathered forward around a fight.

unchained	breeze	keys	guard	rumbling
eyeballs	prisoner	senses	bound	parrot

We _____ (16) down behind some barrels to discuss our plan of escape when one of the _____ (17) came over and sat down.

As he turned around he spotted us and _____ (18) the alarm. Immediately we took to our heels and with nowhere else to go we _____ (19) ourselves up the ropes. Thus was our escape and fate decided and we _____ (20) at our present state.

arranged	silenced	crouched	arrived	sounded
hoisted	buccaneers	tied	horsemen	swam

As we neared the top we _____ a ship at a mile or so and
21
braved the shark-infested _____ rather than face the murderous pirates.
22
We dived deep to keep out of _____ of guns. We swam in the direction
23
of the ship and being _____ swimmers we held out an hour before we
24
were picked up and _____ safely back to England.
25

---

forgot	transported	good	sight	water
bicycled	top	hostile	spied	pond
