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ABSTRACT

The Upper Cumberland Reading Project, funded under Title III of the Elementary and Secondary Education Act, served 13 rural Tennessee counties located approximately equidistant from three major cities: Nashville, Chattanooga, and Knoxville. The project's instructional approach was built around the basal text because of its use in all of the region's school systems. No special equipment, such as reading machines, was used. Only common audiovisual items found in most schools, such as overhead projectors and tape recorders, were employed to any degree. The goal of the project, to diffuse better teaching practices in reading throughout the region, was operationalized through eight specific project objectives. Five of the objectives were closed objectives, stated in performance terms; the remaining three were open objectives calling for the completion of specific activities. Not only did the project meet its objectives, but in many cases it enabled students to achieve a much higher level of performance than stipulated by the project objectives. The project demonstrated that effective steps can be taken to teach elementary children of the Upper Cumberland Region to read on an adequate level. (WR)

A PROLOGUE TO BETTER TEACHING OF READING

UPPER CUMBERLAND READING PROJECT
ESEA III, 1971-1974

FINAL REPORT

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Section I

Context and Program Description

> If you were explaining your program to a complete stranger, you would be sure to tell him something of your locale and school system, and you would probably mention how and why your program got started. Such details help the reader to understand why the program was planned the way it was, and why it turned out the way it did. A person interested in instituting a similar program can judge how closely his own particular locale and system match those of your program. He can also decide how feasible it would be for him to start a similar program, and what types of modifications he should consider making.
>
> ....Preparing Evaluation Reports
> (U. S. Office of Education, 1970)

The Upper Cumberland Reading Project, funded under Title III of the Elementary and Secondary Education Act, served an area of 13 rural Tennessee counties located approximately equidistant from three major cities: Nashville, Knoxville, and Chattanooga. The counties were one of ten 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 ten miles from Cookeville in Putnam County.

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 drop-out 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 of local funds 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 (UCRP), which began operations June 15, 1971, and ended July 31, 1974.

Upper Cumberland Reading Project

The reading project was based on two major research studies, by Chall, and Bond and Dykstra, as reported in The Reading Crisis (National School Public Relations Association, 1970). These indicated that a variety of teaching methods probably were better than any single approach but that the most important element in a child's learning to read was not the method, equipment, or 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 they did visit, 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 visitors.

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

At each demonstration center, the [illegible] director taught reading classes

for selected children from the host school. Two additional ESEA III staff members functioned as 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 school, and later to work with the exchange teachers for two days when the latter returned to their home schools.

Following steps in change models of Rogers (Diffusion of Innovation, Free Press of Glencoe, 1962) and others, the UCRP 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 follow-up 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 furnish 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" (A Foundation Goes to School, 1973).

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 (The Teaching of Reading, Phi Kappa Phi, 1972). These were supplemented, in line with the findings of Chall, 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 was a special need of the region's students.

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. These materials included a unit containing lesson plans on the Upper Cumberland region as a geographical entity and on some of its famous persons and historic 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 lessons and planning the next day's lessons.

No special equipment, such as reading machines, was used. Only common audio-visual items, such as overhead projectors and tape recorders, which were found in most schools, were employed to any degree. The project 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 direct expenditures for the three years of the UCRP 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 lengths 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 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. The specialists' work also was designed to help other teachers in the schools to become familiar with the 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.

The procedures involved in a teacher exchange and steps in the change process which each procedure paralleled were as follows:

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

Steps In Change Process	ESEA III Procedures
Awareness Interest Trial Evaluation (Continued)	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.

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. These will be discussed in more detail in the section on evaluation procedures and findings.

Section II

Program Impact

The evaluation design for the Upper Cumberland Reading Project (UCRP) was developed in accordance with the outline suggested by the Tennessee evaluation design procedure. The Tennessee design had four phases: I, status evaluation; II, planning evaluation; III, operational evaluation; and IV, final or product evaluation. While considerable attention was given to operational or process evaluation in the first- and second- year interim reports, emphasis in this final report is on product assessment and implications for diffusion or

project replication.

The goal of the project, to diffuse better teaching practices in reading throughout the region, is operationalized through eight specific project objectives. The first five are closed objectives, that is, they are stated in performance terms; the remaining three are open objectives calling for the completion of specific activities. The degree to which project accomplishments are congruent with the eight objectives will be emphasized in this section. Implications of evaluation findings will be discussed in Section III of this report.

Since some of the objectives focus on student attainment, two schools located in a county adjacent to the project area were selected to serve as a control population. One school was located in a town with economic, social and population characteristics similar to those of Baxter, while the other was a school serving the same type of rural clientele as Wilson. The achievement of students in the control group established a baseline by which to compare the achievement of UCRP students at the Baxter and Wilson centers.

Two years ago, students in the first and fourth grades at both the UCRP and control-group schools were selected to participate in the project. Many of these same students then participated the second year as second and fifth graders and in the third and final year, as third and sixth graders. To assess reading achievement, reading subtests of the Stanford Achievement Test (SAT) were administered at the beginning of the first year and at the end of each of the three years. The Instructional Objectives Exchange (IOX) objectives-based tests also were given to center students in the project's third year.

Assessment of Project Objectives

Objective One: To effect among pupils in Upper Cumberland Reading Project Centers an average gain in reading achievement greater, at the .05 level of significance, than that among pupils in a control group, as measured by the Stanford Achievement Test, 1964 edition.

Students in grade 3 and grade 6 at the Baxter-Wilson centers and control schools were given, respectively, the Primary II Battery and the Intermediate II Battery of the Stanford Achievement Test. Three subtests were administered to each third grader: Work Meaning, Paragraph Meaning, and Word Study Skills; sixth graders were given the Word Meaning and Paragraph Meaning subtests. Different forms of the same test given to the groups at the beginning of the first year served as the pre-test. Test scores of UCRP and control students were analyzed by using analysis of covariance.

Examination of UCRP and control mean scores clearly indicates a substantial difference in the amount of gain between pre-testing done at the beginning of the project and post-testing done at the end of the third year.

Means Pre- and Post-test SAT Scores

	Word Meaning		Paragraph Meaning		Word Study Skills	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Grade 3						
UCRP	10.89	28.21	13.89	43.06	23.83	46.62
Control	12.25	20.14	15.17	30.42	26.50	30.36
Grade 6						
UCRP	12.70	32.75	21.26	40.45		
Control	13.76	21.58	22.79	28.92		

Analysis of the difference in mean scores between UCRP and control students at both grade levels and for all subtests produced F ratios all significant at the .001 level. This would indicate that the performance of both UCRP grade levels exceeded on all subtests that stipulated by the objective. Students who participated in the Upper Cumberland Reading Project for the entire three-year period made significantly greater advances in increasing their reading achievement level than did a similar population of students who were not involved in the program. The project furthermore, for each of its three years, met this objective and, in most instances, exceeded the stated level of performance. Overall, the data substantiate that the activities and approaches employed by the program were more successful in increasing overall reading ability of students in the Upper Cumberland region, as measured by the SAT, than were those employed in programs of the control schools.

Objective Two: To reduce over the three-year span of the project the anticipated loss of 1.35 of one grade level in achievement, based on area-wide testing, by 50 percent for pupils in UCRP Centers, as measured by the Stanford Achievement Test, 1964 edition.

Based on the results of prior area-wide testing, it was determined that students in the Upper Cumberland region averaged gaining .55 of a grade level in reading each year through the sixth grade. They could expect a loss of approximately 1.35 grade-level units (GLU's) in a three-year period. This annual cumulative loss meant that students typically finished the third grade and sixth grade reading, respectively, on a grade level placement of 2.65 and 4.30. The level of performance required by the objective was to reduce this loss by 50 percent. This means that, on the average, students were expected to gain .775 grade level units in a year instead of the typical

.55 grade level units. Over the project's three years, the objective called for a gain of 2.33 GLU's instead of the typical 1.65 GLU's.

Expected Average Grade Level Placement

Grade Completed	National Norms	Upper Cumberland Norms	Project Objective Norms
Third	4.00	2.65	3.33
Sixth	7.00	4.30	4.98

Analysis of the data shows that the level of performance specified by Objective Two not only was met, but substantially exceeded. UCRP students achieved an average gain over the three years of 3.25 grade level units. While UCRP students averaged a yearly gain of 1.08 GLU's, control students averaged a yearly gain of .60 GLU's, a figure close to the expected Upper Cumberland norm of .55 GLU's per year.

Overall, 106 of the 130 UCRP students (81.5%) finished their third year in the project reading at or above the average grade level placement established as a project norm for Objective Two. This was in comparison to 39.1 percent (43 of 110) of the control students. The percentage of students in the UCRP and control group reading at or above National norms and levels specified in the objective are shown in the table on the following page. Comparison of the scores for the control group with those for the UCRP group clearly show the superiority of performance attained by the latter. A substantially higher proportion of UCRP students than control students in both the third and sixth grade scored on the average at or above the reading levels specified by National norms and by the project objective.

Percent of Students at Specified Reading Levels or Above

Grade Completed	National Norms	Project Objective Norms
Third Grade		
Norms	(4.00)	(3.33)
UCRP (N=68)	52.9%	72.1%
Control (N=54)	11.1%	18.5%
Sixth Grade		
Norms	(7.00)	(4.98)
UCRP (N=62)	58.0%	93.5%
Control (N=56)	12.5%	62.5%

The impact of the UCRP project is also illustrated by the fact that during the first year, only 17.2 percent of all UCRP students were reading on a level commensurate with their actual grade level placement as compared to 55.4 percent by the end of the project. This dramatic gain indicates that not only was the project successful in fostering and maintaining an increased level of reading achievement as contrasted to control students, but also in raising UCRP students' reading achievement to a level at least equal to national norms for the SAT.

Percentages of UCRP students reading at levels at least equal to regional and national norms substantially exceeded those of control students.

Objective Three: To reduce each year the anticipated loss of .45 of one grade level in reading achievement, based on area-wide testing, by 50 percent for pupils in UCRP centers, as measured by the Stanford Achievement Test, 1964 edition.

To reduce the anticipated loss of .45 grade level units (GLU's) by 50 percent means that on the average UCRP students must achieve a grade level

gain of .775 GLU's to meet the performance level stipulated by Objective Three. The difference between SAT scores obtained at the end of the project's second year and those obtained at the end of the third and final year substantiate that Objective Three was met.

The average UCRP gain on all subtests for both grade levels was 1.15 GLU's, a figure which far exceeded the performance level of a gain of .775 GLU's. This gain assumes even more meaning when compared to an average grade level gain of approximately .59 for the control group. The data also suggest that the project had a cumulative effect, since the overall average grade level gain gradually increased each year. The level of achievement attained, as illustrated by Tables I and II, plus the fact that well over half (61.7%) of the UCRP students showed a gain of at least one grade level in 1973-74, in comparison to 12.6 percent of the control group, offers evidence of the program's success.

Mean Grade Level Gains of UCRP Students in 1973-74

Grade Completed	Word Meaning	Paragraph Meaning	Word Study Skills
Third Grade	1.01	.96	.95
Sixth Grade	1.20	1.18	--

Objective Four: To enable pupils in UCRP centers to average 80 percent correct answers on IOX objectives-based tests to measure reading comprehension and word attack skills identified in the Wisconsin Design for Reading Skills Development as appropriate for pupils at the end of each elementary grade.

The Instructional Objectives Exchange (IOX) instruments were selected

TABLE I

GRADE LEVEL PLACEMENT OF
THIRD GRADERS AT THE END OF PROJECT'S
FINAL YEAR

	UCRP		CONTROL	
	Number	Percent	Number	Percent
Below 3.0	14	20.9	35	64.8
3.0 - 3.2	4	6.0	9	16.7
3.3 - 3.5	9	13.4	2	3.7
3.6 - 3.8	4	6.0	2	3.7
3.9 - 4.1	2	3.0	4	7.4
4.2 - 5.0	11	16.4	--	---
Above 5.0	23	34.3	2	3.7
TOTAL	67	100.0	54	100.0

TABLE II

GRADE LEVEL PLACEMENT OF
SIXTH GRADERS AT END OF PROJECT'S
FINAL YEAR

	UCRP		CONTROL	
	Number	Percent	Number	Percent
Below 5.0	4	6.5	21	37.5
5.0 - 5.9	7	11.3	19	33.9
6.0 - 6.3	6	9.7	6	10.7
6.4 -6.7	8	12.9	1	1.8
6.8 - 7.1	13	21.0	4	7.1
7.2 -7.5	10	16.1	--	---
Above 7.5	14	22.6	5	8.9
TOTALS	62	100.1	56	99.9

as appropriate criterion referenced tests to assess Objective Four. Nine comprehension and eight word attack tests were selected for use in the third grade and 14 comprehension and eight word attack tests for the sixth grade. The comprehension tests for the third grade covered Syntactical Structure, Context Clues, Sequence, Conclusions, and Main Idea. These topics plus affixes were on sixth grade tests.

The level of performance in Objective Four was exceeded. One hundred fifteen of the 130 UCRP students (88.5%) correctly answered at least 80 percent of the individual test items. The percent of UCRP third and sixth grade students making selected IOX scores is shown below:

Percent of Students Making Selected IOX Scores

	Less 80% Correct	80-84% Correct	85-89% Correct	90-94% Correct	95-100% Correct
Third Grade	13.2	11.8	23.5	22.1	29.4
Sixth Grade	9.7	14.5	19.4	33.9	22.6

Examination of the two grade levels shows that sixth graders slightly outperformed third graders relative to achieving the criterion level specified in Objective Four. While a higher percentage of third graders answered correctly 95 to 100 percent of the test items, only 51.5 percent scored 90 or above as compared to 56.5 percent of the sixth graders.

Sixth grade students, on the whole, did better than third graders on the two major test categories, comprehension and word attack skills. Students in both grades did significantly better ($X^2=20.0$, $p<.001$) on the Word Attack tests than they did on the comprehension tests.

Percent of Students Achieving 80% Correct Answers
On IOX Objectives-Based Tests

	Comprehension Tests	Word Attack Tests	All Tests
Third Grade (N=67)	76.1%	91.1%	88.1%
Sixth Grade (N=62)	72.6%	98.4%	90.3%
Total Group (N=129)	74.4%	94.6%	88.5%

Objective Five: To enable 80 percent of teachers participating in UCRP exchanges to perform, by the end of the project period, 80 percent of the following activities in their classrooms, as determined by self-evaluation and staff observation:

1. Follow the five steps in teaching a basal reading lesson:

____1) Introduction of Vocabulary
____2) Silent Reading
____3) Oral Reading
____4) Skill Development
____5) Supplementary Activities

____A. Use related material such as audio-visual aids to provide children with experiential background for a story.

____B. Preview new words in a story before reading the selection and provide children with word recognition techniques that could be used in attacking new words.

____C. Prepare questions which guide the student's silent reading in order to help him locate information and establish a purpose for reading.

____D. Use at least one kind of oral reading activity different from the traditional "round robin."

____E. Teach phonics as a major word attack skill in connection with skill development.

____F. Encourage children to use word attack skills, sense of the sentence, and picture aids in "intelligent guessing" rather than asking the teacher for a word.

____G. Use the language experience approach as a supplementary activity to a basal lesson.

____H. Use in the teacher's homeroom at least three reading games and/or instructional aids demonstrated in the Title III ESEA center as a supplementary activity to a basal lesson, in order to build specific reading skills on specific levels.

____I. Spend more than one day, if needed, on one story or article, teaching and re-teaching it in a variety of ways to help pupils get as much as possible from the material.

____J. Use such enrichment activities as pantomime, creative dramatics, art, and creative writing in connection with a basal reading lesson.

____K. Use a teacher's manual as an aid in planning lessons from a basal text.

2. Encourage and provide opportunity for oral expression by pupils.

3. Use games and other techniques to help pupils learn to listen.

4. Use UCRP-developed materials.

____A. Use the UCRP diagnostic test as a means of spotting children obviously reading on the frustration or independent levels.

____B. Use the UCRP diagnostic test as a means of rough grouping of children.

____C. At the same time, work with three groups engaged in the following activities:

1) Using the basal text.
2) Working on special projects.
3) Practicing, on a short-term basis, specific skill development.
4) Move the children from group to group and back into a total classroom situation, as desired.

____D. Use the teaching guide accompanying the UCRP diagnostic materials to find information on symptoms of physical and reading disorders in children and actions which the teacher can take in response to these disorders.

____E. Find and use reading materials on levels appropriate to pupils reading on the frustration level or the independent level.

____F. Use units on the Upper Cumberland region developed by UCRP as a supplement to reading or content courses such as social studies.

____5. Follow generally approved practices to encourage good pupil attitudes.
   A. Praise each child in class at least once a day.
   B. Avoid labelling pupils as "slow learners," "non-readers," "dumb," etc., either in conference or before other children.
   C. Let each pupil know that the teacher expects him to become a better reader.

The coordinated efforts of the center directors, master teachers, and the follow-up specialist were designed to complement one another in assisting the exchange teachers to accomplish the stipulated activities. The center directors and master teachers had specified areas of emphasis to guide their work with exchange teachers, as shown on Chart I. The center directors either demonstrated or discussed activities related to the meeting of all the performance objectives for visiting teachers. When the visitors returned to their own classrooms, they worked for two days with master teachers observing some activities which were best demonstrated with the exchange teachers' own pupils, especially use of the language experience approach as a supplementary activity, teacher-made games and activities especially suited to a teacher's pupils, the Upper Cumberland unit, and techniques to encourage good attitudes among the teacher's pupils. The follow-up specialist sought to reinforce what the visiting teacher had discussed and learned through working with the center director and the master teacher. She also tried to help former exchange participants institutionalize the performance objectives, thereby making them part of their regular teaching procedures.

All of the teachers (N=150) who participated in the exchange program over the three years were sent a self-appraisal form near the end of the year in which their exchange occurred. They were asked to indicate those performances which they believed they had substantially achieved, partially achieved, or had not achieved at all. This self evaluation was

supplemented by classroom observation of the follow-up specialist during the project's third year.

Examination of the 1973-74 data indicated that the performance level stipulated in Objective Five was met on both the self-ratings and follow-up ratings. Analysis of the self-rating forms showed that 82 percent of the teachers participating in the program reported that they had partially or substantially achieved at least 80 percent of the performance activities listed. Diffusion Evaluation Reports completed by the follow-up specialist on 37 of the 50 exchange teachers in the last year reaffirmed the adequacy of the teacher's classroom performance. Through field visits, the follow-up specialist found that 80.1 percent of the teachers had mastered 80 percent of the stipulated observable competencies in teaching a basal reading lesson. Examination of self- and follow-up ratings showed no discernible pattern of negative responses which would indicate a weakness in the achievement of any given performance activity. Non-achievement appeared to be more a function of time and situation than a function of the objectives' requirements. This objective also was achieved in 1972-73, the first year it was used to measure the project's impact of exchange teachers.

Percent of Teachers Mastering Selected Percent Activities

	Percent Activities Mastered				
	Less 80%	80-84%	85-89%	90-94%	95-100%
Follow-up rating	18.9	8.1	8.1	24.3	40.5
Self-rating	18.7	6.2	15.6	21.9	37.5
Total	18.8	7.2	11.6	23.2	39.1

Objective Six: To find or develop diagnostic reading tests especially suited for the disadvantaged rural mountain children of the Upper Cumberlands, and to use these instruments to diagnose reading status of pupils in the demonstration centers and representative pupils of those teachers who visit the centers on a released time basis.

When the Upper Cumberland Reading Project was funded, relatively few teachers in the 13 counties served by the project were judged to be providing individualized or small-group instruction in reading. This hesitation appeared to stem from teachers' lack of confidence in their ability to determine different reading levels among their pupils. The project subsequently attempted to develop at least a rough indicator of comprehension which could:

1. Provide a reliable basis for teachers to use in forming initial reading groups at the beginning of a school year.
2. Be administered to an entire class in a short time.
3. Be easily scored and interpreted by the teachers.
4. Relate to the language and experience of rural mountain children who had traveled little and who had few reading materials in their homes.

A form of the cloze procedure applied to materials written or dictated by children as part of language experience approach activities appeared to hold promise as a technique to fulfill the objective. While replacing exchange teachers, itinerant training specialists collected samples of LEA materials from grades 1-6 throughout the region: this later was supplemented with similar material from grades 7-9. Selections judged representative of each grade level were selected by the project staff, and the lexical cloze, multiple choice procedure was applied to them. In this cloze form, all nouns, adjectives, and main verbs are identified. Every fifth word in these categories then is deleted from the LEA selections, paired with distractor words of the same parts of speech, and re-inserted into the copy after the

fifth deletion.

In the last two years of the program, the LEA-cloze tests were given to children enrolled in ESEA III classes at the two demonstration schools. Since the project was set up to assess its effectiveness logitudinally on the same two groups of students over three years, the tests were given to children in grades two and five in 1972-73 and in grades three and six in 1973-74. There was an N of 120 the first year and 92 the second, with the decrease accounted for by dropouts and transfers to other schools and to non-ESEA III classes within the demonstration schools.

Test booklets made up of LEA-cloze selections were given both years. In 1971-72, second grade pupils received exercises for levels 1_2 through 4, and fifth graders 1_2 through 6. In 1973-73, third grade children had exercise for grade levels 1_2 through 6, and sixth graders levels 4 through 9.

Pupils were asked to complete as many exercises as they could. There was no time limit, and testing was made as much of a game as possible to lessen children's apprehension. In 1971-72, the tests were administered by the two ESEA III center directors, but in the second year the project's follow-up specialist, who visited teachers once they returned home to help them implement new ideas observed at the centers, did the testing at both demonstration schools. This was to insure uniformity in procedures.

Data analysis in both years consisted of computing Pearson Product Moment Correlations to determine the degree of association between each child's raw score on the LEA-cloze and that on selected subtests of the Stanford Achievement Test. Initially, all SAT subtests were used, but in 1973-74 only the Paragraph Meaning subtest was selected. The staff felt that this particular subtest gave a more accurate measure of reading comprehension than did the others, and the cloze procedure is believed to be a measure of comprehension.

Analysis of the SAT and LEA-cloze scores for 1972-73 produced coefficients of correlation significant at the .05 level. The 1973-74 testing yielded coefficients of .70 and .42, respectively, for the third and sixth grades of the two demonstration schools. Values of t obtained for both these correlations exceeded those needed for significance at the .01 level.

The testing and data analysis document the fulfillment of Objective Six. Repeated testings have shown the LEA/lexical cloze diagnostic test to be a valid instructional tool for grouping elementary school students on the basis of reading ability. The instrument developed by the ESEA III project also seems to have met prescribed operational criteria: 1) it reflects, at least to a degree, pupils' experience and idiom, 2) it can be given to an entire class at one time, and 3) it can be quickly graded and interpreted by a classroom teacher with a minimum of prior training. Results are immediately available for use in planning and managing classroom instruction. If other test scores are available, from either criterion-referenced or norm-referenced tests, the LEA-cloze could be used to provide a quick check on comprehension of pupils and to add to the teacher's accumulated knowledge on which he or she can base individualized and group instruction in reading.

The procedure, as refined by later studies and applications, may add another tool to the skilled teacher's collection of techniques for improving effectiveness of reading instruction. The use of LEA materials provides an instructional tie-in with several aspects of the language arts and with a vital reading skill, comprehension. Since pupils in effect write their own tests, the LEA-cloze procedure may hold special promise for use with culturally deprived children, regardless of their backgrounds.

Objective Seven: To develop teaching guides and other instructional materials in reading based on the Upper Cumberland culture and language usage and to disseminate these materials to all interested schools of the region.

Through examination of materials developed and on-site interviews with the project staff, it was determined that this objective was met to the fullest practical extent. Although the objective was stated in terms of project imput and had no performance level specified, there is ample evidence that the project developed a series of materials which could be useful to the teachers of the region for years to come and which could stimulate knowledge of and interest in the Upper Cumberland region among pupils. It also is the evaluator's judgment that dissemination procedures employed were designed to get the materials described below into the hands of teachers in grades 1-6 in all schools of the region:

1) Upper Cumberland Unit--This unit, prepared by two members of the project staff, describes the Upper Cumberland region and interesting people, places, and things found therein. It is a self-contained unit incorporating all steps in a typical reading lesson. Its use was demonstrated frequently in the centers by the center directors, and by the itinerant and follow-up specialists in the exchange teacher's own classroom. Copies were provide to all participating exchange teachers.

2) Unit supplement on scenic and historic places in region--This unit was written by one of the project staff members as a supplement to the material covered in the original unit. It was distributed and used in much the same manner as the Upper Cumberland Unit.

3) Manual of instructional games--All members of the project staff contributed to the development of a manual of instructional games written

as a supplement to any basal reader. It included a description of materials, preparation and instructional procedures for over 30 different games which could be used in the classroom, and the specific reading skills and grade levels for which each game was intended.

Additional materials developed included a publication on the language experience approach, guidelines for dealing with reading disorders, and a reading bibliography. All of the materials were given to each exchange teacher as she visited the center; each elementary school in the region was given one copy of each document to keep in its library; each supervisor of instruction received two copies; and the regional university received a copy. All copies for each school system were delivered by project staff members to the superintendent's office, with the request that the supervisor of instruction or materials supervisor relay copies to individual schools.

Forms eliciting an evaluation of the major publications were sent to all persons receiving them. Of the 63 respondents, 45 were classroom elementary school teachers, 3 were Title I ESEA teachers, 9 were county supervisors of instruction and 6 were other educators. The overall response of these persons to the unit and games manual was quite favorable, as can be seen in Tables III and IV. On a 10-point rating scale, more than 50 percent of the respondents assigned, on one or both of the publications, a rating of 9 or 10 to "value as supplement to basal text," "value as supplement to teaching other subjects," "ability to use material in class," "organization of material," "completeness of material," "suitability of material to pupils," "clarity of writing," and "value to regional materials center." While there was no major discrepency in ratings between types of respondents, there was some variance. County supervisors of instruction and Title I ESEA teachers were most favorable in their ratings,

while educators other than teachers, most of whom were administrators, were least favorable.

Percent Assigning Selected Ratings

	1-4 (low)	5-6	7-8	9-10
County Supervisor of Instruction	---	1.3	14.1	82.1
Other Educators	1.9	7.7	44.2	46.2
Teachers (Grades 4-6)	.7	7.2	34.8	56.8
Title I Teachers	---	---	19.2	80.8
Teachers (Grades 1-3)	1.8	10.6	30.2	57.0

Through on-site interviews and observations with the project staff, it was determined that the following suggestions could improve the effectiveness of such publications in similar projects:

1) Teachers in other regions should be given released time in the form of in-service time to aid in the development of similar materials for their regions. It was felt that it was not necessary to have a group of specialists write the materials, but that the teachers themselves could write them. At least two counties in the Upper Cumberland Region produced similar materials for their region during this project.

2) The materials in the major units could be expanded to include other subject areas, such as social studies or science.

3) It was felt that the initial distribution of the materials could have beem improved. Ideally, materials should be given to each school rather than to each system to help ensure delivery to the individual classroom teachers.

CHART I

Areas of Emphasis,
UCRP Staff

Center Directors	Master Teachers
1. 5 steps basal reading lesson (1)*	1. Use LEA as supplementary activity (1G)
2. Use of related material (1A)	2. Use in homeroom 3 games from center (1H)
3. Preview new words (1B)	3. Spend more than day on story (1I)
4. Guide silent reading (1C)	4. Use enrichment activities (1J)
5. Oral reading activity (1D)	5. Encourage oral expression (2)
6. Phonics as word attack skill (1E)	6. Use listening games (3)
7. Encourage word attack skills (1F)	7. Use materials on pupils' levels (4E)
8. Use enrichment activities (1J)	8. Use U. C. units (4F)
9. Use teacher's manual (1K)	9. Encourage pupil attitudes (5)
10. Encourage oral expression (2)	
11. Use games and activities (3)	
12. Use UCRP materials (4)	
13. Work with 3 groups (4C)	
14. Use guide to UCRP materials (4D)	
15. Use materials on pupils' levels (4E)	
16. Encourage pupil attitudes (5)	

*Numbers is parentheses refer to performance objectives for teachers which relate to the areas of emphasis. Use of the diagnostic test (4A and 4B) has not been emphasized pending validation of the instrument.

TABLE III

EVALUATIVE RATINGS ON 10 POINT SCALE OF UCRP PUBLICATION, "PEOPLE, PLACES & THINGS", BY ALL RESPONDENT GROUPS

	(low) Rating Scale (high)									
	1	2	3	4	5	6	7	8	9	10
1. Usefulness in helping plan classroom instruction	1** (2%)		1 (2%)	3 (6%)	4 (8%)	7 (13%)	5 (10%)	16 (31%)	6 (12%)	9 (17%)
2. Value as supplement to basal text	1 (2%)		1 (2%)	2 (4%)	6 (11%)	4 (7%)	3 (6%)	7 (13%)	16 (30%)	14 (26%)
3. Value as supplement to teaching other subjects			1 (2%)		3 (5%)	6 (11%)	7 (13%)	7 (13%)	9 (16%)	22 (40%)
4. Ability to use material in classes		1 (2%)		2 (4%)	8 (15%)	5 (9%)	5 (9%)	8 (15%)	10 (19%)	15 (28%)
5. Organization of material						2 (4%)	3 (5%)	8 (14%)	13 (23%)	30 (54%)
6. Completeness of material		1 (2%)			1 (2%)	2 (4%)	9 (17%)	12 (22%)	17 (31%)	12 (22%)
7. Suitability of material to pupils							3 (5%)	6 (11%)	9 (16%)	38 (68%)
8. Clarity of writing						1 (2%)	3 (5%)	11 (20%)	25 (45%)	16 (29%)
9. Value to regional materials center					2 (4%)	1 (2%)	1 (2%)	6 (11%)	9 (17%)	35 (65%)

**Number of respondents giving rating. Percentages are rounded.

TABLE IV

EVALUATIVE RATINGS ON 10 POINT SCALE OF UCRP PUBLICATION "INSTRUCTIONAL MATERIALS TO AID IN THE TEACHING OF READING", BY ALL RESPONDENT GROUPS

	(low) Rating Scale (high)							
	3*	4	5	6	7	8	9	10
1. Usefulness in helping plan classroom instruction		2** (3%)	3 (5%)	2 (3%)	9 (15%)	16 (26%)	10 (16%)	19 (31%)
2. Value as supplement to basal text			1 (2%)	1 (2%)	4 (6%)	12 (19%)	15 (24%)	30 (48%)
3. Value as supplement to teaching other subjects	1 (2%)		5 (8%)	7 (11%)	10 (16%)	14 (23%)	8 (13%)	16 (26%)
4. Ability to use material in classes		1 (2%)	4 (7%)	2 (3%)	4 (7%)	18 (30%)	13 (21%)	19 (31%)
5. Organization of material			1 (2%)	2 (3%)	7 (11%)	11 (18%)	13 (21%)	28 (45%)
6. Completeness of material			2 (3%)	5 (8%)	8 (13%)	10 (17%)	22 (37%)	13 (22%)
7. Suitability of material to pupils				1 (2%)	8 (13%)	7 (11%)	19 (31%)	26 (43%)
8. Clarity of writing		1 (2%)		3 (5%)	5 (8%)	12 (20%)	19 (32%)	19 (32%)
9. Value to regional materials center			1 (2%)	2 (3%)	5 (8%)	4 (7%)	5 (8%)	44 (72%)

*No respondent gave a rating of less t' 3

**Number of respondent giving rating. Percentages are rounded

Objective Eight: To incorporate the concepts of the language-experience approach to teach decoding skills in the beginning stages of teaching reading to the disadvantaged children of the Upper Cumberland Region; to demonstrate these concepts in Title III ESEA centers and in the host schools of exchange teachers.

The procedures to achieve the project objectives were not spelled out in great detail in the original proposal and no performance level was stated for pupils or exchange teachers. During the first year's operational evaluation, it was determined that objectives stated in terms of observable performances needed to be written for the exchange teachers. The project staff identified effective use of the basal reader, including activities to supplement basal texts, as a priority need of the region's teachers. This decision was based on the first year teacher exchanges. The objective regarding the language experience approach therefore was revised to read as follows: "To demonstrate the language experience approach as a supplemental activity in teaching a basal reading lesson."

Through on-site interviews and observations with center directors, master teachers, the follow-up specialist, and the project director, it was determined that this objective, as originally stated, was not fully accomplished to the extent that the language experience approach was used as a teaching-learning instrument for decoding skills in reading, but that, as restated, the objective was met with varying degrees of success at the two centers.

One major accomplishment was to make the teachers aware of the concepts of the language experience approach which they already were using in teaching reading, along with other LEA techniques. Emphasis was on using LEA as a supplementary activity in a basal lesson, in keeping with the objective's

revised intent. This was demonstrated by itinerant training specialists from both centers, by one center director, and by distribution of a paper entitled "A Look at the Language Experience Approach to Teaching Language Arts." The paper, written by three UCRP staff members and given to all exchange teachers, was an attempt to explain the basic philosophy behind the language experience approach with additional comments as to its application to the teaching of word recognition skills and some comprehension skills. The approach was explained primarily as a step in a directed reading lesson using a basal reader as the text rather than as an instructional system. The follow-up specialist reported that relatively few inquiries were made by exchange teachers about this project publication, apparently because it had been given to them with other materials which may have been considered more important.

As the objective was implemented, its intent within the total context of the project gradually changed to stress use of LEA as a supplementary activity in a basal lesson, with more emphasis on comprehension rather than decoding skills. Procedures implied in this open objective were carried out to an extent that the objective could be considered to be met.

Section III

Summary and Implications

The data clearly substantiate that the UCRP program was a more effective and successful approach to increasing overall reading ability of students than the approaches typically used in most Upper Cumberland schools. Not only did the project meet its objectives, but, in many cases, it enabled students to achieve a much higher level of performance than stipulated by project objectives. It succeeded in substantially reducing ESEA III students'

anticipated grade level loss in reading achievement each year. The project has more than tripled the percentage, i. e., 17 percent to 55 percent, of students reading on actual grade level placement as measured by national norms.

The project conclusively demonstrated that effective steps can be taken to teach children of the Upper Cumberland Region to read on an adequate level. The question thus becomes: "When the demonstration project is over and success has been demonstrated, what then?"

Such a question leads into an examination of the implications of this project.

Application of Change Theory

Use of change theory, and especially Rogers' model of the change process, as a framework for design of the UCRP was discussed in Section I. The success of the project, especially the involvement of many teachers from a large geographical area in an extended exchange program, suggests that its design could have value in other content areas.

As an example, the model as is or modified, could be employed to adequately upgrade the skills of teachers in a broad area such as modern elementary school mathematics or in a more limited field like conversion of weights and measurement from the English to the metric system. The important point is that the model is completely independent of the discipline and has been shown to be an effective mechanism for upgrading teacher skills.

Relationship of UCRP Project to State Needs

The documented success of the project in relation to the identified need for improved reading programs in Tennessee suggests that some

consideration be given to examining the project's implications for a statewide program to improve reading instruction. Demonstration schools analogous to UCRP's centers could be established in various parts of the State. As noted in Section I, the per-pupil cost of such a program, when spread across pupils served by participating teachers over a number of years, is quite low.

There also are other possible options for adapting the UCRP concept for statewide use:

1) Demonstration schools, analogous to the UCRP centers, could be established on a regional basis, but local substitutes would be employed to fulfill the responsibilities of the project's itinerant specialists. A possible disadvantage would be the reservations expressed by a number of UCRP exchange teachers about leaving their students with anyone except fully qualified teachers.

2) A "floating center" concept could be implemented whereby special training teams would move from school to school within a region. This model could be made compatible with the reorganization of the State Department of Education. Both the Division of School System Management and the Division of Field Services could be involved in teacher re-training activities.

These options are but a few of the ways in which the program could be adapted for statewide use. Form and structure, while important, are not the essence of what the UCRP experience has to offer, however. The important variables to be seriously considered for inclusion in a statewide program are:

1) The ability of the teacher is the single most important factor in a child's learning to read; hence resources should be appropriately allocated to reflect recognition of this fact.

2) No single method of reading instruction is clearly superior to others, so it is important that a combination of methods, possibly built around the widely used basal text, be included.

3) Teacher-development programs should reflect a planner's knowledge of change theory.

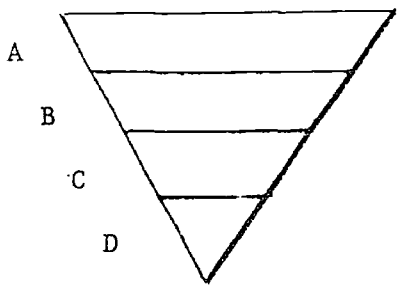
4) Demonstration of exemplary teaching practices, if possible with a teacher's own students, is a far more effective way of transferring skills than the typical "lecture by an expert."

5) Continuing follow-up contact is necessary to ensure the transition from observation to implementation of new teaching practices and as positive reinforcement for newly adopted teaching behaviors.

6) Teacher-development programs should concentrate on fostering those skills which can be conceptualized as observable teaching competencies.

In-Service Training

Several aspects of this project offer implications for in-service training. An in-service model based on the UCRP design can be represented by an inverted pyramid:



The in-service programs can initially reach a region-wide group of teachers (A). This can serve as beginning arousal of interest. It can further be narrowed to a system-wide group of teachers (B), then perhaps, to a school-wide group (C), then to the individual teacher herself (D). As the number

of participants becomes progressively smaller, more and more personal help is given teachers in implementing new practices.

Another implication for in-service training lies in the area of method of presentation of such training. This project clearly showed the necessity of actual demonstration and teacher involvement in efforts to improve reading instruction. The demonstration-involvement method, therefore, would seem to be a more feasible manner of in-service presentation than the typical "prepared speech by an expert."

University Teacher Preparation Programs

The lack of knowledge about how to teach reading among the majority of teachers who participated in this project's exchange program should have an impact upon university undergraduate requirements in the field of reading. All teachers in this project had received bachelors' degrees and had fulfilled the requirements of reading courses at the university level; however, they did not possess the knowledge of such basic items as how to appropriately and successfully use a basal reader or the language-experience approach. Universities therefore, should consider including more formal training in the teaching of reading.

Another major implication for university personnel lies in the area of method of content presentation. This project clearly pointed out the desirability of actual demonstrations and teacher involvement in the process of learning how to teach reading. Since this method was so successfully used with the teachers in this project, the implication is that a greater percentage of the time in the college reading classes be spent in actual demonstrations and teacher involvement rather than hearing traditional lectures.