

EXEMPLARY CENTER FOR READING INSTRUCTION (ECRI)

Ethna R. Reid
Reid Foundation

ABSTRACT: ECRI provides consulting and training for individual classrooms, grade levels or entire schools in implementing a direct instruction model in language arts. The ECRI model is applied to and adapted for existing instructional materials. From these materials structured lessons are developed to teach an integrated curriculum of phonics, oral and silent reading, comprehension, study skills, spelling, literature, and creative and expository writing. ECRI also includes rate building, mastery learning and behavior management components. Staff receive pre-service and ongoing in-service training.

Teaching is adjusted as needed based on student performance. Evaluations and validations starting in 1975 show significantly higher achievement than non-ECRI schools with the most recent national evaluation producing reading and language gains in K-12 exceeding an average of two years gain per year.

Background

The Exemplary Center for Reading Instruction, directed by Dr. Ethna R. Reid, conducts a number of programs. These include the Keyboarding, Reading and Spelling (KRS) program, which uses microcomputers to teach typing, reading and spelling in K 8, Enriching a Child's Literacy Environment (ECLE), which instructs parents, teachers, and other care providers of children 6 months to 3 years or older how to model activities that promote psychomotor and cognitive development, and the ECRI Reading and Language Instruction for gifted, regular, and remedial students, and students with learning disabilities. The latter, called the ECRI program, is reviewed here. (For information on other programs contact Dr. Reid at the address below.)

ECRI is an in-service program in teaching reading and language skills for teachers of students at all ability levels. Using federal and local funds to study effective teaching, the ECRI program was developed between 1966 and 1975 (Reid, 1983; Reid, 1986). ECRI identified effective teaching strategies later corroborated in the Follow Through 'program (Stebbins, L. B., St. Pierre, R. G., Proper, E.D., Anderson, R. B., & Cerva, R. T., 1977) and now known as Direct Instruction (Jenson, Sloane, & Young, 1988, pp. 335-336, 350-362). ECRI adopted a general direct instructional approach and expanded it (a) in ways that allowed application to existing subject material in any content area, and (b) in integrating teacher training,

AUTHOR'S NOTE:

For further information, please address correspondence to: Dr. Ethna R. Reid, Reid Foundation, 3310 South 2700 East, Salt Lake City, UT 84109, Tel: (801) 486-5083 or (801) 278-2334 Fax: (801) 485-0561, Email: ereid@xmission.com

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academic instruction, maintenance of appropriate on-task behavior, procedures for motivation and error correction, record keeping, and the integration of techniques across subject matters. ECRI also added a number of teacher training approaches and teaching procedures and materials developed by ECRI.

The ECRI program is nationally validated for grades 1-12. ECRI has been used and validated in the following settings: regular education, bilingual education (Spanish and English), Chapter I classes, remedial reading classes (for students identified as needing special instruction in reading but not requiring special education), and special education classes, with a total of 2274 students in 11 different districts in one evaluation and 1986 students in five states in a second. Sites were spread over the United States and covered a wide range of students from grades K-12. Students varied widely in ethnicity, socio-economic status (SES), rural/urban background and entering academic levels. The ECRI program has been used in K-12 in both public and private schools, although major validations and evaluations are (with one exception) from public school settings. The ECRI program is currently in place in hundreds of schools throughout the United States.

Program Description

ECRI provides pre-service and in-service instruction to teachers for teaching a total language arts curriculum: word recognition, vocabulary, comprehension, study skills, spelling, penmanship, proofing, creative and expository writing, and literature. Training includes teaching of language arts within the context of any subject matter, using strategies that prevent failure, and implementing management systems that redirect efforts at all levels so all students learn.

In the ECRI program teachers continue to use their existing reading and/or content material. Teaching focuses on individualized instruction (sometimes in small groups) with positive reinforcement. Specified skills and skill levels using performance and rate as criteria are designated as mastery levels necessary for student progress. Language arts activities are highly integrated with subject matter materials, and there is an emphasis on proactive management and student monitoring, with diagnosis and instant prescription for errors. Students are taught to work independently through fading supervised practice.

ECRI identifies and teaches critical teacher behaviors essential in preventing reading failure. The program trains teachers to obtain correct student responses during instruction, establish high mastery levels of 85-100% of skills taught, maintain on-task behavior, coordinate teaching language skills with subject matter areas, correctly model and prompt student responses, use effective management and monitoring systems, diagnose performance, and prescribe instruction based on this diagnosis.

Reading and language skills are taught using written dialogues developed by ECRI for teachers. In addition, the program provides teachers with self-instructional and self-correctional texts with proficiency checklists. ECRI helps teachers develop a skills sequence from existing materials, trains them how to teach the skills and

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how to provide time for student mastery and for formative testing during individual conferences, and includes techniques to formally reteach when incorrect responses have occurred.

Teaching occurs in two instructional contexts: (a) skills and backup lessons to develop and expand new skills; (b) practice time to provide additional skill strengthening in complex contexts. Assessment, placement, and management occur in all contexts as well as in individual conferences.

In a typical skills lesson new words are taught in one of eight presentation modes. A typical skills lesson also teaches one comprehension skill, one study skill, a literature concept, and a grammar or creative or expository writing skill. Words and skills previously taught are reviewed. In backup lessons spelling, writing and proofing are taught that support these new skills.

A practice time equally as long as the instruction (skills lesson) is provided, as well as individual conferences where progress towards mastery is checked. Mastery tests and small group discussions are held at this time. Students learn to assess their own performance and determine if they are ready to progress.

At least 1500 new words and word recognition skills, 90 comprehension skills, and 90 study skills are taught in a school year. These are taught in context, and emphasis is on mastery for all students.

Teachers learn to assess students' reading levels for small group placement and to maintain attending behavior and on task behavior in both instructional sessions and practice time. Periodic criterion referenced mastery tests are given and students are regrouped as indicated.

Staff Support

In an initial five-day seminar, teachers learn teaching techniques, how to schedule time and maintain records, how to teach students to schedule time and do record keeping, and how to select a schedule that fits each teacher's school situation. Teachers observe demonstrations and perform with feedback, pass mastery tests, and learn practices and strategies for achieving mastery.

Teachers receive extensive instructional materials. These cover teaching letter names and sounds, teaching new words through phonics, word structure, context and sight, teaching spelling, cursive and manuscript penmanship, proofing through dictation, teaching creative, literal, interpretative and critical comprehension, teaching study skills, scheduling and record keeping, and teaching grammar, creative and expository writing, literature and speaking. They receive reading inventories, lesson plans, and forms for tracking mastery.

Teachers (or their school) also receive materials for students. Teachers use a basic reading text (usually available in their school) and mastery tests for each student. Enrichment materials and student folders, with record forms, practice time checklists, timed reading practice forms, enrichment reading forms, and a mastery test, are provided and their use taught.

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Costs

Average initial costs are estimated, based on 35 teachers in a seminar, as follows:

Workshop cost:

Per teacher = \$268 for ECRI texts (plus pro rated travel costs and honoraria)

Approximate per student cost of workshop, assuming 35 teachers in a seminar and a class size of 25 = \$13.

Recurring costs:

Per class per year beyond normal classroom costs without ECRI = \$5

(Assuming schools reproduce their own consumable materials. These costs do not include the recurring costs for replacing existing texts.)

Evaluation

Although initial evaluation and validation occurred between 1975 and 1985, more recent formal evaluations were done in 1990 and 1996 to receive certifications from the U. S. Department of Education.

Data from all tests are converted to normal curve equivalents (NCEs) as required by the U. S. Department of Education (Tallmadge, 1996). These are standard scores with a mean of 50 and a standard deviation of 21.06. These scores have the same mean as percentiles, and scores at the extremes (1 and 99) are the same as percentiles. NCE scores and NCE gains allow comparisons across different tests. For any test, at any grade an NCE score of 50 is "average" and thus equals grade level. An NCE score that does not change (no gain or loss) from one testing to another indicates no relative change. Any positive NCE gain score shows an improvement, and vice versa. Although it is not totally accurate, NCE gains can be thought of as approximating percentile gains. In the same way as scoring at the 55th percentile at the end of fourth grade, and at the 55th percentile again a year later at the end of fifth grade indicates a student whose relative standing did not change, regardless of whether the ITBS or CAT was used, no gain or loss in NCE scores indicate no change in relative standing.

1990 Evaluation

Scores from the reading subscales of standardized tests administered according to publisher's procedures were used. All were machine scored by publishers or by district testing departments. Samples were independently scored by an external evaluator to assess reliability. The SAT, CTBS, ITBS, Woodcock-Johnson and the Nelson-Denny tests were used. The latter two were used only with a small proportion of the children in special education in one school and a larger proportion

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of the bilingual children in another.

The 1990 study covered 11 public school sites and 2274 children in regular education, special education, remedial education, bilingual education and Chapter I schools from coast to coast. In addition, two districts provided control schools.

In 1990, regular education students ($n=1733$) gained 4 to 28 NCEs in vocabulary and comprehension—a gain of 0.4 to 1.5 standard deviations, which was significantly greater ($p<.01$) than the control schools or expectancies from normative data. Children with special needs (bilingual, Chapter I and remedial) showed NCE gains ranging from 5.9 to 27.8 with an average gain of 14 NCEs, and students in special education showed gains between 7.3 and 24.9 NCEs, with an average gain exceeding 19 NCEs. All of these gains were statistically significant when compared with controls and normative expectations.

Looking only at the schools with controls, the experimental schools gained between 8 and 14 NCEs in vocabulary and comprehension, the control schools ranged between a loss of 9 NCEs and a gain of 6 NCEs in vocabulary and comprehension.

1996 Evaluation

New validation data were collected during the 1992-1993 and 1995-1996 school years and reported in 1996. Scores from the reading subscales of standardized tests administered according to publisher's procedures and used as part of regular school district programs were used. All were machine scored by publishers or by district testing departments. Samples were independently scored by an external evaluator to assess reliability. In 1996 all schools used the SAT or the ITBS.

The 1996 study covered 6 sites (5 public, one private) in five states, and 1986 children. One Chapter I school also provided an additional control school that maintained its original program. Students were from a range of SES and varied in ethnicity, race and urban/rural background. Special education, Chapter I, gifted, special needs, and regular education students were involved in the 1996 study.

In the 1996 study, gifted, regular education, special needs, and special education experimental students in six different national sites demonstrated significant gains ($p<.01$) on the reading subtests of standardized achievement tests. Average gains per class across all schools and groups ranged from 5.4 NCEs to over 26 NCEs.

One district provided 2 experimental schools and one control school, in grades 2-5. All experimental classes made small gains in comprehension and total reading between 1 and 8 NCEs; the exception showed no change at all in the total reading score for one grade. These are included in the data in the preceding paragraph. In the control school all classes showed small losses in both comprehension and total reading, ranging from a loss of two NCEs to a loss of 9 NCEs.

In North Carolina, where 10 teachers, 400 students, and three administrators have been involved in the ECRI program, average reading score gains were reported to exceed 2.5 years per year enrolled. Anecdotal data indicated a reduction in

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behavior problems and an increase in teacher morale.

Summary of the 1990 and 1996 Studies Combined

Converting these scores to grade level gains and averaging them across grades, combining the 1990 and 1996 studies, after one year of ECRI instruction, regular education students (and some others, as in 1996 districts pooled all student data) in grades 1-2 averaged 2 years gain, regular education students in grades 4-6 averaged 2 years and 3 months gain, and regular education students in grades 7-12 averaged 2 years and 5 months gain. In one school not included in the other data, students in the ECRI program for five years starting in grade 2 moved from the 50th to the 98th percentile in reading, from the 51st to the 99th percentile in written expression, and from the 42nd to the 92nd percentile in spelling in the California Assessment Program by sixth grade.

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