

AN EVALUATION OF THE READING RECOVERY INTERVENTION
PROGRAM IN AN AT-RISK URBAN SETTING

ANNA W. GREHAN
LYNN W. HARRISON
STEVEN M. ROSS
The University of Memphis

JOHN A. NUNNERY
Old Dominion University

JAMES CARL WOHLLEB
KAREN DEJARNETTE
ED R. WILLIAMS
Little Rock School District

LINDA DORN
University of Arkansas, Little Rock

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INTRODUCTION

The Little Rock School District began implementing Reading Recovery during the 1995-1996 school year in two schools. During the first four years of implementation, the Little Rock School District was part of the Pulaski County Reading Recovery Site. By 1998 there were eight trained Reading Recovery teachers in seven schools in the Little Rock School District. In July 1999 the district became a Reading Recovery Site hiring a full-time teacher leader. In 2000-2001 the University of Arkansas at Little Rock (UALR) began conducting the Reading Recovery teacher training for the district. Between the 2000-2001 and 2004-2005 school years UALR trained 17 Reading Recovery teachers for the district. At the end of the 2004-2005 school year the Little Rock School District had 28 trained Reading Recovery teachers serving 18 of the 34 elementary schools in the district. Reading Recovery is one of eight literacy programs, interventions, and/or models used by Little Rock schools. Currently, Little Rock School District funds are used to support the program.

The goal of Reading Recovery is to dramatically reduce the number of first grade students who have difficulty learning to read and write and to reduce the cost of these learners to educational systems. Reading Recovery is a short-term intervention program of one-to-one tutoring for the lowest-achieving first graders. The intervention is most effective when it is available to all students who need it and is used as a supplement to good classroom teaching. Individual students receive a half-hour lesson each school day for 12 to 20 weeks with a specially trained Reading Recovery teacher. As soon as students can read within the average range of their class and demonstrate that they can continue to achieve, their lessons are discontinued and new students begin individual instruction.

The evaluation plan for the Reading Recovery program in Little Rock School District included: (1) analyses of Reading Recovery student achievement and program data, (2) principal, teacher, and parent surveys and interviews, and (3) observations of Reading Recovery tutoring sessions. This report is part of a larger district study of four programs evaluating the effectiveness in improving and remediating the academic achievement of African-American students. This report includes results from 18 elementary schools participating in the Reading Recovery program.

RESEARCH QUESTIONS

The major goals of this research study were to evaluate African-American student achievement outcomes, program implementation fidelity, and principal, teacher, and parent perceptions concerning the Reading Recovery tutoring program for first grade students. Student achievement results on the Iowa Test of Basic Skills (ITBS), Developmental Reading Assessment (DRA), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), and An Observation of Early Literacy Achievement were analyzed to compare the progress of first graders enrolled in the Reading Recovery intervention program and comparison students in 2004-2005. Program implementation ratings were obtained from observations of 14 tutoring sessions in nine schools. The survey and interview results are based on the perceptions of 156 classroom teachers in grades K-3, 22 experienced Reading Recovery teachers, four teachers in-training, 10 principals, and 95 parents. The Reading Recovery evaluation was structured around the following seven primary and supplemental research questions.

Primary evaluation question:

- Has the Reading Recovery program been effective in improving and remediating the academic achievement of African-American students?

Supplemental (Qualitative/Step 2) evaluation questions:

- What are the quality and level of implementation of Reading Recovery at the 18 schools implementing it in 2004-2005?
- What is the level of participation in Reading Recovery by African-American students relative to other ethnic groups at the school?
- What is the progress demonstrated by African-American and other student participants in Reading Recovery in improving achievement, as demonstrated on program-specific measures? What percentage of students are “discontinued” or “not discontinued?”
- What are the perceptions of Reading Recovery teachers regarding Reading Recovery program implementation, impacts, strengths, and weaknesses?

- What are the perceptions of principals, regular first-grade teachers, and other teachers in the school regarding Reading Recovery program implementation, impacts, strengths, and weaknesses?
- What are the perceptions of parents/guardians of Reading Recovery students regarding program impacts, strengths, and weaknesses?

DESIGN

The evaluation period extended from February 2005 through May 2005. The evaluation design was based on both quantitative and qualitative data collected from Reading Recovery intervention observations, principal and teacher in-training interviews, classroom teachers, Reading Recovery teachers, parent surveys, and Reading Recovery program data. Reading Recovery student-level achievement data on the ITBS, DRA, DIBELS, and An Observation of Early Literacy Achievement was received in fall 2005 and incorporated in this report. The primary data collectors in this study were Center for Research in Educational Policy (CREP) trained site researchers. Site researchers: (1) conducted Reading Recovery intervention observations, (2) administered the Reading Recovery teacher survey, (3) conducted principal and teacher in-training interviews, and (4) collected program data. Principals at Reading Recovery schools were responsible for administering the classroom teacher and Reading Recovery parent surveys.

Participants

Little Rock School District is located in Central Arkansas and serves approximately 26,500 students, with African-Americans representing approximately 67% of the district student population, in 49 schools in an urban area with a population of 184,000. In the 2004-2005 school year 18 elementary schools and 230 first grade students, of which 173 are African-American, 27 are Caucasian, 22 are Hispanic, and the remaining 8 are other ethnicities, participated in the Reading Recovery program in the district. However, the schools indicated that 365 first grade students needed Reading Recovery services. Three schools were in their first year of program implementation (Bale, Stephens, and Terry) and survey and observation data were not collected from these schools. However, randomly selected teachers in-training and principals from these three schools were interviewed for this study.

Table 1

Reading Recovery Participating Schools: 2004-2005

School Name	School Wide Population							Reading Recovery Participant Information				
	Students	Teachers	African-American	Asian	Hispanic	Caucasian	% Free and Reduced Lunch	% Below Proficient*	Number of RR Teachers	Number of K-3 Teachers	Number of RR Students	Years in RR Program
School 1	319	27	87%	0%	7%	5%	88.4%	45%	1	10	8	1
School 2	605	55	55%	1%	4%	40%	63.3%	22%	4	20	32	7
School 3	496	43	54%	3%	3%	40%	53.0%	18%	2	16	16	3
School 4	536	44	75%	0%	15%	10%	85.6%	38%	3	17	26	5
School 5	261	27	58%	0%	10%	32%	68.9%	30%	1	8	9	10
School 6	387	35	97%	0%	0%	2%	94.3%	51%	2	12	18	7
School 7	299	23	89%	0%	4%	7%	80.6%	48%	1	8	8	7
School 8	310	30	52%	4%	3%	41%	43.9%	11%	2	8	14	6
School 9	349	24	77%	1%	9%	13%	85.1%	44%	1	9	8	3
School 10	156	22	98%	0%	0%	2%	91.7%	59%	1	5	8	2
School 11	511	31	56%	1%	6%	36%	55.7%	19%	1	14	8	10
School 12	262	25	99%	0%	0%	1%	87.8%	49%	1	8	9	3
School 13	499	39	95%	1%	3%	2%	90.6%	59%	1	18	9	1
School 14	577	36	51%	7%	5%	36%	47.5%	12%	1	18	8	1
School 15	451	29	83%	0%	15%	2%	92.0%	33%	2	13	18	3
School 16	456	34	95%	0%	3%	2%	93.2%	64%	1	15	10	3
School 17	461	36	52%	9%	1%	38%	33.6%	10%	2	13	13	9
School 18	285	27	89%	1%	4%	6%	91.9%	35%	1	8	8	5

* Proficiency levels are based on 2003-2004 school year ACTAAP Grade 4 Reading, Language, and Writing data.

A profile of the Reading Recovery schools and participants included in this study is shown in Table 1. The profile data were obtained from either the 2003-2004 Common Core of Data from the National Center for Education Statistics, the 2004-2005 Reading Recovery Site Report for Little Rock from the National Data Evaluation Center at The Ohio State University, or provided by the district. As indicated in Table 1, the number of years schools have implemented the Reading Recovery program ranged from one to 10. The Reading Recovery schools were predominately African-American, ranging from 50% of the student

population to 99%. The district reported that four Reading Recovery schools did not receive Title I funding and the percentage of students eligible for free and reduced price lunch ranged from a low of 33% to a high of 94% at all Reading Recovery schools.

INSTRUMENTATION

Six instruments were developed by the Center for Research in Educational Policy at The University of Memphis to collect the evaluation data: a classroom observation tool, a principal interview, a teacher in-training interview, a Reading Recovery teacher questionnaire, a classroom teacher questionnaire, and a parent survey.

Program Data

Reading Recovery program information was obtained from data submitted to the National Data Evaluation Center at The Ohio State University in 2004-2005. Each year the schools and district submit program data and receive a site report. The report represents an examination of Reading Recovery student outcomes for Little Rock and accounts for all children served by Reading Recovery within the site during the 2004-2005 school year. In addition, attention is given to implementation factors that may be supporting or hindering the success of the intervention at the site.

Student Achievement Results

In addition to the program data, interviews, survey, and observation tools cited above, reading achievement data are derived from scores on the Iowa Test of Basic Skills (ITBS), Developmental Reading Assessment (DRA), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), and An Observation of Early Literacy Achievement.

PROCEDURE

Data for the evaluation were collected March-May for the 2004-2005 school year. On February 16, 2005 principals were given an overview of the evaluation and timelines for collecting data. On March 3-4 and April 14-15, 14 tutoring observations were conducted in nine randomly selected experienced Reading Recovery schools by two Reading Recovery content experts from Georgia State and The Ohio State Universities. Only experienced Reading Recovery teachers were observed. On March 23 a CREP

trained site researcher administered the Reading Recovery teacher survey to experienced teachers at a regularly scheduled monthly meeting at UALR. In April and May principals in experienced Reading Recovery schools administered the classroom teacher questionnaire to K-3 grade teachers. Principals also administered the parent survey to parents whose children were currently receiving first grade intervention services in the 15 experienced Reading Recovery schools. Four teachers in-training and 10 principals were randomly selected from the 18 Reading Recovery schools to participate in a phone interview in April and May conducted by CREP researchers. Reading Recovery program data were received in summer 2005 from the National Data Evaluation Center at The Ohio State University. Student achievement data were received from the district in fall 2005. Table 2 provides the type of measures, instrument names, administration timeline, and a brief data collection description for each of the instruments

Table 2**Data Collection Summary**

Type of Measure	Instrument	Timeline	Description/ Response rate
Site Visits	RR Implementation Assessment Instrument	Spring 2005	<ul style="list-style-type: none"> • 14 conducted
Surveys	RR Teacher Questionnaire RR Classroom Teacher Questionnaire RR Parent Survey	Spring 2005 Spring 2005 Spring 2005	<ul style="list-style-type: none"> • 22 respondents/100% • 156 respondents/ approximately 90% • 95 respondents/9 Spanish approximately 86%
Interviews	Principal Interviews Teacher In-Training Interviews	Spring 2005 Spring 2005	<ul style="list-style-type: none"> • 10 conducted • 4 conducted
Data Analysis and Reporting	ITBS, DRA, DIBELS, & Observation Survey: RR Little Rock School District Reading Recovery Aggregate Report	Fall 2005	<ul style="list-style-type: none"> • 1,094 first grade students • 230 RR • 864 comparison group • 1 Final Report

METHODS - STUDENT ACHIEVEMENT

Sample. The sample included 1,094 first grade students who attended one of 18 schools that implemented the Reading Recovery program during the 2004-2005 school year. Of these, 230 were referred to the Reading Recovery program, and 864 were in the comparison group. The percentages of students who were African-American or of Limited English Proficiency were similar between the comparison and Reading Recovery groups (73.6% versus 75.6% and 7.3% versus 8.7%, respectively). However, Reading Recovery students were more likely to be eligible for free or reduced-price lunch (84.3% versus 73.1%), to receive special education services (15.7% versus 8.6%), and to be male (58.1% versus 48.0%).

Reading Recovery Treatment Level. In the Reading Recovery program, students who are deemed to have attained a reading level equivalent to their peers are assigned an end-of-program status of “discontinued.” Children who received 20 or more weeks of Reading Recovery services, but who do not attain a reading level equivalent to their peers are assigned a status of “recommended action.” Children who have received fewer than 20 weeks were assigned “incomplete program” status. Children designated as “unknown” status were removed from the program in fewer than 20 weeks due to reasons other than the school year ending. Other children were designated as having moved during the school year. The median number of sessions of “recommended action” ($Md = 68.50$; $n = 68$) children was actually higher than the median for “discontinued” students ($Md = 57.00$; $n = 90$). The medians for “incomplete” students ($n = 46$) and “unknown” students ($n = 12$) were very similar ($Md = 44.63$ versus 46.08 , respectively). For the purposes of this study, “recommended action” and “discontinued” students were categorized as “complete program;” “incomplete” and “unknown” students were categorized as “incomplete program;” and students who moved were eliminated from the analyses. This left a total of 216 Reading Recovery students: 158 with a complete program, and 58 with an incomplete program.

Measures. Pretest (covariate) measures included: (a) Spring, 2004 Developmental Reading Assessment (DRA) scores, (b) fall 2005 Observation Survey: Reading Recovery program subtests that included *Letter Identification*, *Word Test*, *Concepts About Print*, *Writing Vocabulary*, *Hearing and Recording Sounds in Words*, and *Text Reading*, and (c) the Dynamic Indicators of Basic Early Literacy Skills

(DIBELS) subtests in *Letter Naming Fluency*, *Phoneme Segmentation Fluency*, *Nonsense Word Fluency*, and *Word Use Fluency*. Outcome measures included Iowa Test of Basic Skills (ITBS) Reading Normal Curve Equivalent Scores, DRA subtests, Observation Survey: Reading Recovery subtests, and DIBELS subtests administered in Spring 2005. To achieve some parsimony in the analyses, pretest measures were subjected to a principal components analysis, and regression-based factors scores were constructed for pretest DRA, Observation Survey: Reading Recovery subtests, and DIBELS subtests. A single factor accounted for 60.1% and 60.5% of the variance in the DRA and Observation Survey: Reading Recovery subtests, and DIBELS subtests, respectively. Outcome measures included the DRA and Observation Survey: Reading Recovery, DIBELS subtests, and ITBS Reading.

Student achievement analyses. A 3 (Program Status) by 2 (African-American versus other) multivariate analysis of covariance (MANCOVA) was performed on two test batteries, using student gender, the pertinent pretest factor score, free lunch status, special education status, and LEP status as covariates. One test battery included the DRA and subscales of the Observation Survey: Reading Recovery. The second test battery included subtests from the DIBELS. A similar 3 by 2 analysis of covariance was performed on ITBS Reading NCE scores using the 2003-2004 DRA score as a pretest covariate. For the multivariate analyses, Wilk's lambda was used as the criterion of multivariate significance. Where Wilk's lambda indicated a significant multivariate effect, follow-up univariate analyses were performed on each outcome variable using the Bonferroni procedure to control for experimentwise alpha. When significant univariate results were found, post hoc analyses were performed using Scheffe's procedure. Effect size estimates were computed for all posttests by subtracting the adjusted mean for the comparison group from the adjusted mean from the Reading Recovery group within levels of race, then dividing by the total standard deviation of the posttest (Cohen, 1988; Hedges & Olkin, 1985). For ITBS Reading NCE effect size estimates, the population standard deviation of 21.06 was used. The effect size estimate (ES) represent the standardized difference between treatment and comparison group means, which allows for comparison across measures that have different metrics.

Exploratory and supplementary analyses. *Impact of teacher experience and number of sessions.* The number of years experience with Reading Recovery was recorded for each teacher. Years experience ranged from 1 to 10 years. ITBS Reading NCE scores and DRA test scores for 2004-2005

were regressed on 2003-2004 DRA/RR Observation Survey factor scores and dummy-coded variables representing student ethnicity, free lunch status, gender, special education status, and LEP status. Standardized residuals were saved from each of these analyses, and plotted against teacher years of experience to graphically assess the nature of the relationship between teacher experience and teacher effectiveness in Reading Recovery for students who received a Complete program. Standardized residuals for each of these 2004-2005 tests were also plotted against number of Reading Recovery sessions received for all students (i.e., those who received either a Complete or Incomplete program).

RESULTS

Classroom Observation Results

Reading Recovery Implementation Assessment Instrument (RRIAI[®])

As indicated in the description of the RRIAI, the observation procedure primarily focuses on Reading Recovery Program Components and Program Strategies. The site observers used a four-point rubric (1 = poor or unacceptable, 2 = below average in comparison to other programs observed, 3 = meets nearly all standards of program quality, and 4 = above average in comparison to other programs) to rate the frequency and application of components and strategies of Reading Recovery instruction.

Reading Recovery Program Components

The overall mean rating for the Reading Recovery Program Components was 3.46 which suggests a high level of program implementation. Of the six subcategories the highest observed ratings were: *assembling a cut-up story* and *introducing and reading a new book* observed to be above average in 85.7% of tutoring sessions. The program component subcategory with the lowest observed rating was *working with letters and/or words using magnetic letters* observed to be above average in only 35.7% of tutoring sessions. The six program components were observed in at least 92.9% of 14 tutoring sessions.

Reading Recovery Program Strategies

The overall mean rating for the Reading Recovery Program Strategies was 3.61 which also indicates a high level of instructional effectiveness. Of the eight During Tutoring Lesson subcategories, the highest observed rating was for *appropriate text selected throughout the lesson* observed to be above average in 85.7% of tutoring sessions. The During Tutoring Lesson subcategory with the lowest observed

rating was *echo of focus throughout the lesson* observed to be above average in just 42.9% of tutoring sessions. For the After Tutoring Lesson, *has high expectations for the child* and *articulates child's strengths and needs* were observed to be above average in 78.6% of tutoring sessions and *accurate and up-to-date records* were observed to be above average in 71.4% of tutoring sessions. The Reading Recovery Program Strategies were observed in at least 85.7% of tutoring sessions.

Observer Perceptions of Reading Recovery Program Implementation

Site observers reported being impressed with the dedication and commitment of the Reading Recovery teachers to the fidelity of the teaching procedures and the integrity of the implementation of the program. Almost all teachers observed were meeting all the standards, guidelines, and expectations of the Reading Recovery Council of North America and the North American Trainers Group. Since observations occurred in March and April, most of the students observed were second-round students, since teachers had discontinued their first-round students. Teachers reported that students who did not discontinue from Reading Recovery during the first-round were being considered for further intervention services. Site observers also reported that the Reading Recovery program in the Little Rock district receives an adequate allocation of time, materials, and other resources. However, several teachers and principals expressed the need for additional Reading Recovery teachers in their schools.

Reading Recovery teachers also reported teaching literacy small groups the rest of the day, which enables them to give their Reading Recovery students more attention during the instructional day. By teaching these literacy groups, site observers suggested that the Reading Recovery teachers' expertise and knowledge gained from their training and practice benefits children across several grade levels.

During visits site observers suggested areas in which some Reading Recovery teachers needed improvement. These instructional areas included: (1) hearing and recording sounds in words; (2) making and breaking; (3) doing away with the helping hand; and (4) maintaining up-to-date records on each child as a basis for instruction.

INTERVIEW RESULTS

Reading Recovery Principal Interview

Principals at 10 of the Reading Recovery schools were randomly selected to participate in a 45-minute phone interview. Principals were asked a series of questions regarding general program

implementation, classroom-level changes, program results, professional development opportunities and parental and community involvement.

Overall, principals were positive about the Reading Recovery program and the impact it has had on their schools. Most of the schools have been utilizing Reading Recovery for several years and faculty and staff are very comfortable with the program. Nearly all of the principals interviewed were instrumental in bringing Reading Recovery to their schools, and the decision to utilize Reading Recovery was made after considerable research and thoughtful consideration.

Principals reported that Reading Recovery is a wonderful complement to the school's balanced literacy programs. The one-on-one attention the reading Recovery students receive is overwhelmingly the most effective of the strategies that the program employs. Other effective strategies mentioned included "push-ins", literacy groups, running records, and the writing component.

Principals reported being active advocates in their Reading Recovery programs. They described their roles as one of support and involvement, ranging from oversight of the program to more direct involvement including student selection for the program, review of student progress, and ongoing meetings and collaboration with the Reading Recovery specialists.

All principals noted that teachers were very supportive of the Reading Recovery program and appreciated the impact it has had on overall student achievement. Most of the resources needed for effective program implementation are available; however, principals reported an ongoing need for books, additional teachers and tutors, and more planning time. Principals described the African- American population as being well-served by Reading Recovery, and most agreed that through Reading Recovery the achievement gap is being bridged for their African-American students. In most of the schools, African-American students are a large percentage of the Reading Recovery program, and the early intervention provided by Reading Recovery allows the student to be encouraged by being successful at a younger age.

Teacher In-Training Interview

In the spring 2005, four teachers in their first year in the Reading Recovery program were contacted by phone for a 30 to 45-minute phone interview. The teachers in-training were attending classes concerning Reading Recovery instruction, as well as working in their schools implementing the Reading Recovery

strategies. Feedback from the teachers was solicited regarding general program information, classroom level changes, results, professional development, and parental involvement and support.

All teachers described the process of integrating Reading Recovery into the school's literacy program as well planned and organized. Reading Recovery teachers work individually with the lowest performing students and then follow up individual instruction with literacy groups. Reading Recovery teachers reported a thorough selection process that involved collaboration with the classroom teacher and comprehensive testing and assessment. In general, the Reading Recovery teachers reported strong support from the classroom teachers, that classroom teachers appreciated the effectiveness of the one-on-one approach, and the fact that Reading Recovery is able to provide this type of support, freeing the classroom teacher to work more effectively with the other students.

The Reading Recovery teachers in-training strongly felt that Reading Recovery helped to equalize learning and achievement opportunities for African-American students at their schools. Most of the students in Reading Recovery are African-American, and these teachers were able to see positive gains. Reading Recovery helps all struggling readers by actively engaging them in reading and allowing them to feel successful at reading.

The Reading Recovery teachers in-training reported a significant increase in self-confidence and improvement in overall attitude among the Reading Recovery students. As the students begin to experience success, they are less frustrated and angry. This improvement in attitude improves their classroom behavior and relationships with other teachers and students. Some of these teachers have seen dramatic increases in test scores and other achievement data, while others have not yet been able to see these gains.

Reading Recovery teachers in-training reported professional training that ranged from adequate to thorough. Changes in Reading Recovery course instructors led to some confusion for some of the teachers in training, and some reported the need for increased classroom hours. However, overall, these teachers reported feeling well-prepared to work with the students. The strategies they have learned have been very helpful. Although the teachers in-training reported having significant classroom experience, they are learning unique techniques that have been very beneficial.

Survey Results

Reading Recovery Teacher Questionnaire (RRTQ)

Descriptive results. Reading Recovery teachers had extremely favorable attitudes toward the program at their schools. All of the teachers strongly agreed or agreed that they have a thorough understanding of the program, teachers in their school are generally supportive of the program, ongoing communication exists between Reading Recovery tutors and classroom reading teachers, Reading Recovery monthly meetings are effective and useful, instructional materials needed to implement the Reading Recovery program are readily available, and the Reading Recovery program is aligned with state and district reading and language arts standards. There was also strong agreement that Reading Recovery teachers received support, with 86.4% of the teachers reporting that the school administration and Reading Coach supported their efforts as a Reading Recovery teacher. Almost 75% (72.7%) of teachers reported receiving extensive district support. The items with the highest level of disagreement (disagree and strongly disagree) concerned Reading Recovery teachers having sufficient planning time (36.4%) and enough tutors to fully implement the Reading Recovery program (18.2%).

Demographic data. All Reading Recovery teachers (100%) reported having at least six years of teaching experience and 31.8% reported at least six years experience as a Reading Recovery teacher. Approximately 85% (86.4%) of Reading Recovery teachers reported having a Masters Degree and beyond. The majority of Reading Recovery teachers were Caucasian (72.7%) and 13.6% reported their ethnicity as African-American.

Reading Recovery Classroom Teacher Questionnaire (RRCTQ)

Descriptive results. For the classroom teachers, the three items on which 80% or higher agreed included: teacher support of the program (93.6%), positive impact on student achievement (87.8%), and improving achievement of African-American students (82.1%). The two items on which classroom teachers expressed the strongest disagreement or disagreement included: sufficient faculty and staff to fully implement the program (23.1%) and because of Reading Recovery, parents are more involved in the literacy program (14.7%).

Demographic data. K-3 classroom teachers reported less teaching experience and education attainment than Reading Recovery teachers. Close to 30% (28.9%) reported less than one year to five

years teaching experience in any school and 57.7% reported having a Bachelor's degree. However, more classroom teachers reported their ethnicity as African-American (28.9%) than Reading Recovery teachers with the majority (68.6%) reporting ethnicity as Caucasian.

Reading Recovery Parent Survey (RRPS)

Descriptive results. Generally, parents had favorable attitudes toward the Reading Recovery program. A majority of the parents (90.5%) reported that, because of Reading Recovery tutoring, they believed that their child would be successful in school and 86.3% reported that Reading Recovery had improved their child's reading skills. However, less than 75% (66.3%) of parents strongly agreed or agreed that they have many opportunities to talk with the Reading Recovery teacher about their child's progress.

Demographic data. Almost 70% (68.4%) of parents reported the ethnicity of their child as African-American and 13.7% reported their child's ethnicity as Hispanic and 7.4% reported the ethnicity of their child as Caucasian.

Reading Recovery Level of Participation and Program Measures

African-American students were in the majority in all of the 18 schools in the study. Not surprisingly, at 72.5% of the comparison student population and 75.0% of the Reading Recovery student population, African-American students were also a majority of the Reading Recovery students in this study.

In 10 of the 18 schools, the percentage of African-American students in Reading Recovery exceeded their percentage of the comparison population. How meaningful this difference is may be debatable given instances where 100% of the Reading Recovery students are African-American in a school in which 98.3% of the comparison students are African-American (Watson Elementary) or where there are just 8 Reading Recovery students in a school with more than 100 first grade students (Terry Elementary School).

Reading Recovery End of Program Status by Race

A comparison of the total African-American Reading Recovery student population to the total "other" students involved in Reading Recovery indicates that the students were nearly equally represented in two of the three program specific measures. The percentage of African-American students Discontinued (43.3%) was not considerably different from the percent of "other" students Discontinued (46.3%). In

addition, in the Incomplete status, the percentage of African-American students (21.3%) was not very much different than that of the “other” students (25.9%). Only in the Recommended status did the percentage of African-American students considerably exceed the percentage of other students (34.5% vs. 27.8%).

Reading Recovery Year End Reading Group by Race

With-in school comparisons are again difficult to make due to the unequal number of African-American students compared to other students participating in the program. On an overall basis however, the percentage of African-American students in the high/upper-middle group at 25.7% was lower than the percent of “other” students in this group (38.2%). In addition, almost 75% of the African-American students were in the low/lower-middle group compared to less than 66% of “other” students.

STUDENT ACHIEVEMENT RESULTS

DRA and Observation Survey: Reading Recovery Subtests. A total of 142 Reading Recovery students (66% pretest-posttest match rate) and 562 comparison students (65% rate) had matching 2005 DRA subtest scores, demographic information, and 2004 DRA/Observation Survey factor scores. Wilk's lambda indicated significant multivariate effects for Reading Recovery status ($F_{8,1380} = 6.83, p < .001$), special education status ($F_{4,690} = 3.93, p < .01$), and 2003-2004 DRA/Observation Survey factor scores ($F_{4,690} = 111.32, p < .001$). Follow-up univariate tests indicated significant Reading Recovery status effects on *Hearing and Recording Sounds* ($F_{2,693} = 6.34, p < .01$) and *DRA* scores ($F_{2,693} = 9.99, p < .001$). Post hoc analyses revealed that: (a) Reading Recovery students in both the Incomplete Program ($M = 36.32$; $ES = +0.43$) and the Complete Program ($M = 35.96$; $ES = +0.37$) had a significantly higher adjusted mean *Hearing and Recording Sounds* score than students in the comparison condition ($M = 33.82$); and (b) students in the comparison condition ($M = 17.64$) and the Complete program ($M = 16.42$; $ES = -0.18$) had a higher mean *DRA* score than students receiving the Incomplete Program ($M = 13.02$; $ES = -0.68$). No program by race interaction effect occurred, indicating that African-American and other students were equally affected by participation in Reading Recovery.

DIBELS Subtests. A total of 67 Reading Recovery students (31%) and 53 comparison students (28%) had matching 2005 DIBELS subtest scores, demographic information, and 2003-2004 DIBELS factor scores. Wilk's lambda indicated significant multivariate effects for Reading Recovery status ($F_{8,212} =$

4.12, $p < .001$), special education status ($F_{4,106} = 3.50$, $p < .01$), and 2003-2004 DRA factor scores ($F_{4,106} = 3.69$, $p < .01$). Follow-up univariate tests indicated significant Reading Recovery status effects on *Phoneme Segmentation Fluency* ($F_{2,109} = 3.39$, $p < .05$) and *Oral Reading Fluency* ($F_{2,109} = 6.59$, $p < .01$). Post hoc analyses revealed that: (a) Reading Recovery students in both the Incomplete Program ($M = 54.81$; $ES = +0.65$) and the Complete Program ($M = 54.02$; $ES = +0.58$) had a significantly higher adjusted mean *Phoneme Segmentation Fluency* score than students in the comparison condition ($M = 47.23$); (b) students in the comparison condition ($M = 40.35$) and the Complete program ($M = 33.45$) had a higher mean *Oral Reading Fluency* score than students receiving the Incomplete Program ($M = 21.62$; $ES = -0.91$); and (c) students in the comparison condition had a higher adjusted mean *Oral Reading Fluency* score ($M = 40.35$) than students receiving the Complete program ($M = 33.45$; $ES = -0.33$). No program by race interaction effect occurred, indicating that African-American and other students were equally affected by participation in Reading Recovery.

ITBS Reading NCE. A total of 140 Reading Recovery students (65%) and 562 comparison students (65%) had matching 2004-2005 Reading Recovery subtest scores, demographic information, and 2003-2004 DRA factor scores. The ANCOVA indicated statistically significant effects for Reading Recovery status ($F_{2,691} = 6.62$, $p < .001$), free lunch status ($F_{1,691} = 7.83$, $p < .01$), and 2003-2004 DRA/Observation Survey factor scores ($F_{1,691} = 195.81$, $p < .001$). No program by race interaction effect occurred, indicating that African-American and other students were equally affected by participation in Reading Recovery. Post hoc analyses showed that comparison students ($M = 53.82$) had a significantly higher adjusted mean *ITBS Reading NCE* score than students receiving the Complete program ($M = 46.65$; $ES = -0.34$). The effect size for African-American students receiving a complete program was -0.46 , versus -0.09 for those receiving an incomplete program.

Exploratory and supplemental results. Exploratory analyses of second and third grade results showed no effects on 2004-2005 DRA and effect sizes ranged from -0.16 to -1.34 on ITBS for Reading Recovery students. These results need to be viewed with caution, however, due to low matching rates in second grade and the lack of a true pretest measure. There was no relationship between number of teacher years of experience with Reading Recovery and ITBS standardized residuals or DRA standardized residuals for students receiving a complete program, after controlling for 2003-2004 DRA factor scores and student

ethnicity, gender, free lunch status, special education status, and LEP status. Likewise, there was no relationship between number of sessions attended and ITBS residuals. A statistically significant, small positive relationship was observed between total number of sessions attended and DRA residuals ($r = 0.21$, $p < .05$). The median effect size estimate across all posttests for African-American students with a complete program was $Md = +0.17$, with a range from -0.25 to $+0.52$. For African-American students receiving an incomplete program, effect size estimates ranged from -0.78 to $+0.50$, with a median of -0.23 . Thus, receiving a complete program yielded a directional advantage for African-American students, whereas the reverse occurred for receiving an incomplete program.

FINDINGS

Has the Reading Recovery program been effective in improving and remediating the academic achievement of African-American students?

- The Reading Recovery program had equal effects on African-American and other students.
- Students receiving the complete program had significantly higher adjusted means than comparison students on Phoneme Segmentation ($ES = +0.58$) and Hearing and Recording Sounds in Words ($ES = +0.36$)
- Students receiving an incomplete program had significantly higher adjusted means than comparison students on Phoneme Segmentation ($ES = +0.65$).
- Students in the comparison condition had significantly higher adjusted means than students receiving a complete program on Oral Reading Fluency ($ES = -0.33$) and on ITBS Reading NCE scores ($ES = -0.34$).
- Students in the comparison condition had significantly higher adjusted means than students receiving an incomplete program on DRA test scores ($ES = -0.68$) and Oral Reading Fluency ($ES = -0.91$).
- No relationship was observed between teacher experience with Reading Recovery and 2004-2005 student achievement outcomes after controlling for 2003-2004 achievement, student ethnicity, gender, free lunch status, special education status, and LEP status.

- No relationship was observed between number of Reading Recovery sessions and 2004-2005 ITBS Reading NCE scores, after controlling for 2003-2004 achievement, student ethnicity, gender, free lunch status, special education status, and LEP status.
- A small but statistically significant positive relationship was observed between number of Reading Recovery sessions and 2004-2005 DRA test scores, after controlling for 2003-2004 achievement, student ethnicity, gender, free lunch status, special education status, and LEP status.
- The median effect size estimate across all posttests for African-American students receiving a complete program was +0.16; for students receiving an incomplete program, the median effect size estimate was -0.09.
- Positive effects of Reading Recovery tended to be associated with lower-order or beginning reading skills like phoneme segmentation and hearing and recording sounds, while less positive effects tended to be associated with more complex, higher-order skills like Oral Reading Fluency and DRA scores.

What are the quality and level of implementation of Reading Recovery at the 18 schools implementing it in 2004-2005?

Classroom observations indicate that Reading Recovery teachers' instructional practices conform to the recommendations and requirements of the program throughout the district. Given that there are no national comparisons or benchmarks for the RRIAI, a mean of approximately 3.50 on a 4.00 scale suggests a high level of Reading Recovery implementation in the district. Site researchers noted only three areas in which some teachers were observed below average to some degree, reading familiar stories, appropriate pacing of the lesson components, and working with letters and or/words. However, the observed lack of quality implementation in some classrooms in reading familiar stories and appropriate pacing of the lesson components might begin to explain the lack of oral reading fluency, text reading, and ITBS effects for Reading Recovery students.

There appears to be a high level of consistency of program delivery across the district. This suggests that generally teachers have a high degree of fidelity to the model. In addition, the student achievement analysis found that there was no relationship between teacher experience with Reading Recovery and 2005 achievement scores after controlling for 2004 achievement and other variables.

What is the level of participation in Reading Recovery by African-American students relative to other ethnic groups at the school?

The data indicate that African-American students made up a majority of the students participating in Reading Recovery in the 18 schools included in this study. This finding shouldn't be surprising since African-Americans are the majority of the students in each of the participating schools. Information compiled from the student achievement analyses also indicates the percentage of African-American students receiving Reading Recovery services (75.2%) is very similar to the ethnic makeup of the students used for comparison purposes (73.6%). However, Reading Recovery students were more likely to receive free or reduced-price lunch (84.3% vs. 73.1%) and special education services (15.7% vs. 8.6%) than comparison students, and were more likely to be male (58.1% vs. 48.0%).

What is the progress demonstrated by African-American and other student participants in Reading Recovery in improving achievement, as demonstrated on program-specific measures? What percentage of students are “discontinued” or “not discontinued?” What proportion of scheduled sessions are actually held, and what are the reasons for missed sessions?

Table 11 indicates that African-American students, when compared with Reading Recovery students of other ethnicities, were nearly equally represented in two of the three program specific measures examined. The percentage of African-American students “Discontinued” at 43.3%, was not considerably different than the percentage of students “Discontinued” of other ethnic backgrounds, 46.3%. In addition, in the “Incomplete” status, the percentage of African-Americans (21.3%) was, again, not much different than students from other ethnicities (25.9%). African-American students, at 34.5%, were more likely to be “Recommended” for further actions than other students (27.8%).

African-American students were, however, more likely to be in the Low/Lower Middle reading group at the end of the school year than other students (74.3% vs. 61.8%). This finding may present a dilemma for the program and the district. While African-American students are generally progressing similarly to other students on program-specific measures, at the end of the school year, the majority of African-American students are still struggling to maintain or falling below grade level in reading.

About 22% of scheduled sessions were missed due to the teacher being unavailable (7%), student absence (6%), teacher absence (5%), or the student being unavailable (4%). These missed sessions could contribute to the mean number of sessions per week being 3.5.

What are the perceptions of Reading Recovery teachers regarding Reading Recovery program implementation, impacts, strengths, and weaknesses?

Reading Recovery teachers had extremely favorable attitudes toward the Reading Recovery program. Teachers reported a thorough understanding of the program, that they received adequate professional development which was valuable for improving the achievement of African-American students, and that they had the support from teachers in the school. The majority of Reading Recovery teachers also reported receiving extensive administrative, Reading Coach, and district support. The items and areas of most concern were sufficient planning time, enough tutors to fully implement the program, and time to routinely monitor first grade students' progress after they were discontinued from Reading Recovery tutoring. Additionally, Reading Recovery teachers indicated that only 63.6% of faculty, staff, and administration believe that all children can read at grade level or above by the end of third grade and that parents are more involved in the literacy program of this school as a result of the program.

Reading Recovery teachers, on average, appear to be more experienced and better educated. Eighty percent had a Master's degree or beyond in educational attainment and 100% reported at least six year or more years of teaching experience. In addition, the majority (68.18%) reported one to five years of experience as a Reading Recovery teacher.

The four teachers in-training were equally committed and positive about the program and overall, felt they were well prepared to work with students. The teachers in-training also felt strongly that Reading Recovery helped to equalize learning and achievement opportunities for African-American students. Teachers in-training emphasized the importance of using data to monitor the progress of the students to develop effective teaching strategies based on the individual needs of each student. Finally, teachers in-training also reported the need for more time to plan and implement as well as for continuing support to understand Reading Recovery components more thoroughly.

What are the perceptions of principals, regular first-grade teachers, and other teachers in the school regarding Reading Recovery program implementation, impacts, strengths, and weaknesses?

A review of Reading Recovery principal interview responses indicates that principals are very supportive and actively involved in the program. All of the principals interviewed reported that they understood the program and were advocates of their program having a positive impact on overall student achievement. Principals indicated that the one-on-one tutoring program supplements and enhances the school's balanced literacy program. Most principals agreed that, through Reading Recovery, the achievement gap is being bridged for their African-American students. Principals also noted that teachers were very supportive of the program.

K-3 classroom teachers shared the principals' enthusiasm for the Reading Recovery program, as evidenced by responses on the RRCTQ. A majority of the classroom teachers reported that they had an understanding of the program, were generally supportive, and that student achievement had been positively impacted. Principals and teachers also agreed that most of the resources and support needed for effective program implementation was available; however, they also reported an ongoing need for additional teachers and tutors to support more students and time to plan, review student progress, and collaborate together. All (102) of the teachers responding agreed that their school should continue the Reading Recovery program.

What are the perceptions of parents/guardians of Reading Recovery students regarding program impacts, strengths, and weaknesses?

Parents were generally very pleased with the results of the Reading Recovery program. Approximately 90% of the parents responding to the parent survey agreed that: Reading Recovery tutoring had improved their child's reading skills and because of Reading Recovery their child will be successful in school. Less than three percent of those who responded reported that they did not know or understand the program. In the three open-ended responses parents indicated a very good understanding of the program, appreciation of one-on-one tutoring sessions, and the improvement in their child's reading skills. However, a few parents did express the need for longer and more frequent

tutoring sessions and more opportunities to talk with the Reading Recovery teacher about their child's progress.

RECOMMENDED PROGRAM MODIFICATIONS

In summary, the Little Rock School District has a strong Reading Recovery program implementation. Teachers, principals, and parents appear to be actively engaged in the program and the district tries to provide adequate levels of resources and support. However, the lack of clear program effects may be the result of factors that have been identified in prior studies of Reading Recovery. Possible factors and recommended program modifications to produce greater achievement gains include:

- It would be expected that Reading Recovery students would perform better on assessments more closely aligned with the instructional program (DRA, DIBELS, Observation Survey) than the norm-referenced, group-administered ITBS. In particular, Reading Recovery enhanced learning for complete program students' tests involving Phoneme Segmentation and Hearing and Recording Sounds in Words. However, it had less positive effects on tests assessing Oral Reading Fluency and ITBS Reading NCE scores. Reading Recovery is also most likely serving as a "first line of defense" for students who may later be referred for special education services. While classroom teachers are receiving help for their neediest students, this may put an extra burden on the program that was designed to help students who could benefit quickly from quality instruction in 20 weeks.
- The district should examine the feasibility of expanding the program to provide tutoring support to all incoming first grade students who need services. In the 2004-2005 school year, the 18 Reading Recovery schools indicated that 365 students needed tutoring services and approximately half of this number received a complete round of lessons and were discontinued. The Reading Recovery program guidelines state that if a school has more children who need services than one teacher can provide, then it will never realize the full benefit of Reading Recovery for later school achievement. It is especially difficult

for classroom teachers to continue to scaffold discontinued students' learning while supporting a large number of other at-risk students reading below grade level.

- In addition to an expanded program, a transitional plan for students who have discontinued should be explored. The data suggest that after Reading Recovery students are discontinued and return to the classroom at the same reading level as their peers, they may not maintain the same growth rate and achievement does not keep pace with their peers. Although research indicates that former Reading Recovery students perform well in their classes, some slippage in achievement can occur (Clay, 1993). Although Clay (1993) provides guidelines for transition back to the classroom after the student is discontinued; it is possible that students were returned to the classroom without benefit of a transition plan. As noted by Reading Recovery teachers, few teachers have the opportunity to routinely monitor discontinued students' progress. Such a plan could involve daily monitored reading that would provide another buffer against "slippage." Also in tutoring sessions, children have opportunities to read texts at their instruction level on a daily basis, but they may not have adequate time for daily reading in the regular classroom.
- The quality of instruction that Reading Recovery students receive once they return to the classroom is an important factor that was not examined in this study. Increased professional development of classroom teachers would enable them to understand how to integrate their Reading Recovery students back into the classroom once they have been discontinued, and how to provide the appropriate instruction and feed back so that students would continue to improve.
- Increased partnership with UALR to help with the development of a transition plan and professional development for classroom teachers would seem to be warranted given these study results.
- Additional research could provide critical insight into the optimum classroom environment for discontinued, recommended, and incomplete Reading Recovery students. Further studies might also provide a more in-depth analysis of a small number of students whose

gains were maintained to determine what factors contributed to their success and how these factors can be generalized to all Reading Recovery schools.

EXPECTATIONS OF PROGRAM MODIFICATIONS

Reading Recovery has valuable components that, with adaptation and modification, can be even more effective. With the recommended program modifications, the Little Rock School District could expect:

- Progressive gains on standardized test scores for African-American students over time.
- An increased number of students involved in the Reading Recovery program.
- A greater adherence to Reading Recovery guidelines, especially those relating to transition services and the number of sessions required for optimum benefits.
- More teachers throughout the district better able to serve students at-risk in the areas of literacy and reading.
- Sustained achievement of students upon completion of the Reading Recovery program.
- A stronger relationship with UALR professionals that would continue to provide the Little Rock School District with the most up-to-date research findings and best instructional practices for reading and literacy instruction.

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