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# Study of the Sustained Effects of Reading Recovery in Iowa

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# Study of the Sustained Effects of Reading Recovery in Iowa

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## Introduction

Each year 20% or more of students entering first-grade will have severe difficulty learning to read (Clay, 1993; Shaywitz, 2003). Longitudinal research suggests that children who are the lowest achievers in first grade will continue to be the lowest achievers throughout the elementary grades (Juel, 1988). Early intervention with high-quality one-to-one instruction is critical to change the course of learning failure for the lowest-performing children (Clay, 1993; Vellutino et al., 1996). In the United States, a larger percentage of the lowest-achieving children in first grade accelerate their learning and reach grade-level performance in reading and writing with Reading Recovery intervention.

Nationally, in 2006–2007, 73% of students who received a full series of lessons in Reading Recovery successfully achieved average or better first-grade performance (National Data Evaluation Center, 2007). Similar results are obtained each year and replicated in each state and site. Every year in Iowa, 70–75% of the children who receive a full series of Reading Recovery lessons successfully achieve average or better reading and writing competency (Forbes, 2001a, 2001b, 2002, 2003, 2004, 2005, 2006, 2007). The consistency of results over the years in each district, state, and nationally (nearly 2 million children taught since 1984) reinforces the concept that Reading Recovery can dramatically reduce the number of

students with severe reading problems in first grade (Clay, 1993).

The goal of Reading Recovery is to significantly reduce the number of students needing long-term supplemental support (Askew, Fountas, Lyons, Pinnell, & Schmitt, 1998). A persistent question from educators has been whether the gains that these students make in first grade are sustained. Studies of sustained effects in various districts and states demonstrate that most students served maintain the gains that they have made during the Reading Recovery intervention and continue to learn successfully from classroom instruction alone (Askew et al., 2003; Briggs, 2003; Brown, Denton, Kelly, & Neal, 1999; Hovest & Day, 1997; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Rowe, 1995; Sylva & Hurry, 1995). The purpose of this study is to investigate the sustained effects of the Reading Recovery intervention for students in Iowa.

Informal studies conducted within some of the Iowa Reading Recovery sites indicated that Reading Recovery students sustain their gains in literacy achievement. Those studies provide information for specific districts, but are not designed to answer key questions for the state's educators regarding the sustained effects of the Reading Recovery intervention. The purpose of this study is to address this concern by investigating two questions:

- Was there a shift in the distribution of scores for Reading Recovery students from the beginning to the end of first grade and was the shift maintained into fourth grade?
- How do former Reading Recovery students perform on the Iowa Test of Basic Skills (ITBS) in comparison to grade-level peers within their schools of attendance in subsequent years?

## Method

This study addressed the research questions through analyses of student reading achievement data gleaned from testing at grade levels 1, 3, 4, and 5. Specific procedures for examining data relevant to each question are detailed below.

### *Research question 1*

Was there a shift in the distribution of scores for Reading Recovery students from the beginning to the end of first grade and was the shift maintained into fourth grade?

To address the first part of this research question, a comparison was made between the distribution of student scores on the Observation Survey (Clay, 2002) Text Reading level at the beginning and end of first grade. The study included students who had achieved on-grade level reading and writing ability so that their series of Reading Recovery les-

sons were successfully discontinued and students who were recommended for assessment/consideration for other instructional support at the end of their series of Reading Recovery lessons. (For purposes of this research study, students were identified as discontinued or recommended.) The Observation Survey Text Reading level scores of 244 students (216 discontinued and 28 recommended) who received Reading Recovery instruction in 1996–97, and 303 students (241 discontinued and 62 recommended) who received Reading Recovery instruction in 1997–98, were examined by compiling a bar graph displaying stanine results (Gómez-Bellengé & Thompson, 2004).

To address the second part of the first research question, a follow-up investigation of sustained effects, the scores of these students on the (ITBS) Total Reading score in fourth grade were also converted to stanines and displayed for examination. The comparison of scores on the Observation Survey Text Reading level in first grade and the ITBS in fourth grade is supported by a study by Gómez-Bellengé, McBride, Rodgers, and Wang (2004). That study found a correlation of .764 ( $p < .01$ ) between the ITBS Total Reading score and the Observation Survey Text Reading level.

### Research question 2

How do former Reading Recovery students perform on the Iowa Test of Basic Skills in comparison to grade-level peers within their schools of attendance in subsequent years?

The achievement performance of former Reading Recovery students who had received a full series of

**Table 1. Number of ITBS Scores by Grade Level of Former Reading Recovery Students**

Grade Level	Third (Groups A, B, C)	Fourth (Groups A, B)	Fifth (Group A)
Discontinued	709	457	216
Full Series of Lessons	874	547	244

lessons while in first grade were compared with all of the students in the same grade at their school of attendance (Cohen, 1988). All students who received a full series of lessons (both discontinued and recommended) between the fall of 1996 and the spring of 1999 in 56 randomly selected elementary schools were included in the study. ITBS Reading Vocabulary, Reading Comprehension, and Total Reading scores for these students were obtained in third, fourth, and fifth grades.

The students were grouped into three groups based on the year they received Reading Recovery instruction. Group A included 244 students (216 discontinued and 28 recommended) who received Reading Recovery instruction in 1996–97. Group B included 303 students (241 discontinued and 62 recommended) who received Reading Recovery instruction in 1997–98. Group C included 337 students (252 discontinued and 85 recommended) who received Reading Recovery instruction in 1998–99. Subsequent to their first-grade year, ITBS subtest scores were collected for these students annually. For the purpose of this analysis, available data included ITBS scores at the third-grade level for all groups (A, B, C), fourth-grade scores for two groups (A, B), and fifth-grade scores for one group (A). The resulting number of students for

whom scores were available at each of the three grade levels is displayed in Table 1.

The 3 years in which the students in this study received Reading Recovery instruction were years during which the implementation of Reading Recovery was expanding quickly within the sites in Iowa. Many of the teachers of these students were in training during the years that these specific students were taught; therefore, the teachers had limited experience teaching Reading Recovery. It is not known if the results would have been different if we had limited the study to only those students who were taught by experienced teachers who are generally considered more expert in their work with struggling learners.

## Results

### Research question 1

Results on the Observation Survey from the fall of first grade demonstrate that these students were very low performing—97.8 percent of the 547 students in the study had text reading levels at stanine 1 (lowest 4%). Figure 1 shows the distribution of Observation Survey Text Reading level scores at the end of first grade, demonstrating the progress made by the students after the Reading Recovery intervention. The normal stanine distribution is the basis of comparison and is designated with

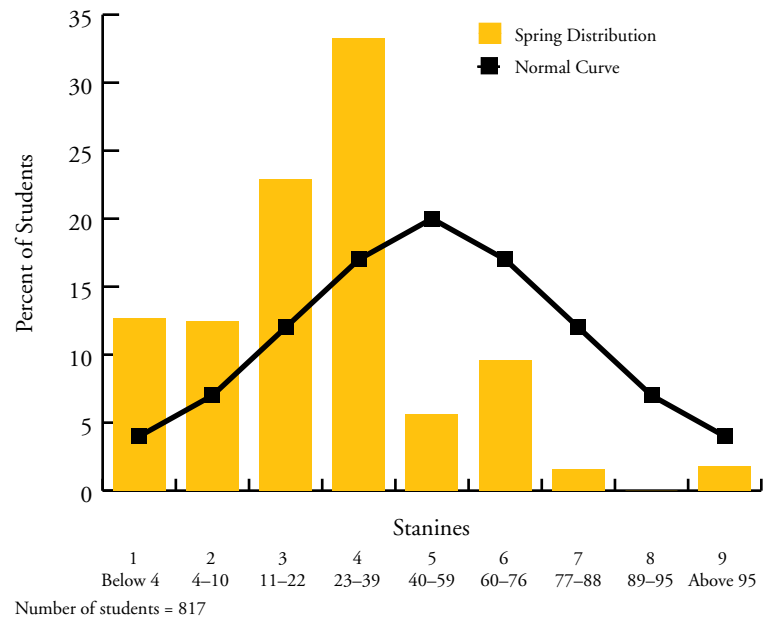
a line graph superimposed over the bar graph. By the end of first grade, 51.9% of the first graders scored at stanines 4 through 9. These stanines represent average and above average performance. The shift in distribution of Text Reading level scores from the beginning to the end of first grade demonstrates the progress that was made by most of the students as a result of the Reading Recovery intervention. The students' progress is consistent with progress reported with Reading Recovery annually at the site, state, and national levels.

As a follow-up investigation of sustained effects, the Total Reading scores for the same former Reading Recovery students on the ITBS in fourth grade were also distributed by stanine. The ITBS scores approach a normal curve distribution (see Figure 2). In fourth grade, 70.3% of the students scored at stanines 4 through 9, ranging from average to above-average performance levels. This demonstrates that Reading Recovery not only shifted the achievement of these lowest-performing students during the year of the intervention, but that those shifts were sustained 3 years later. In fact, a higher percentage of students performed at or above stanine 4 in fourth grade (70.3%) than at the end of first grade (51.9%).

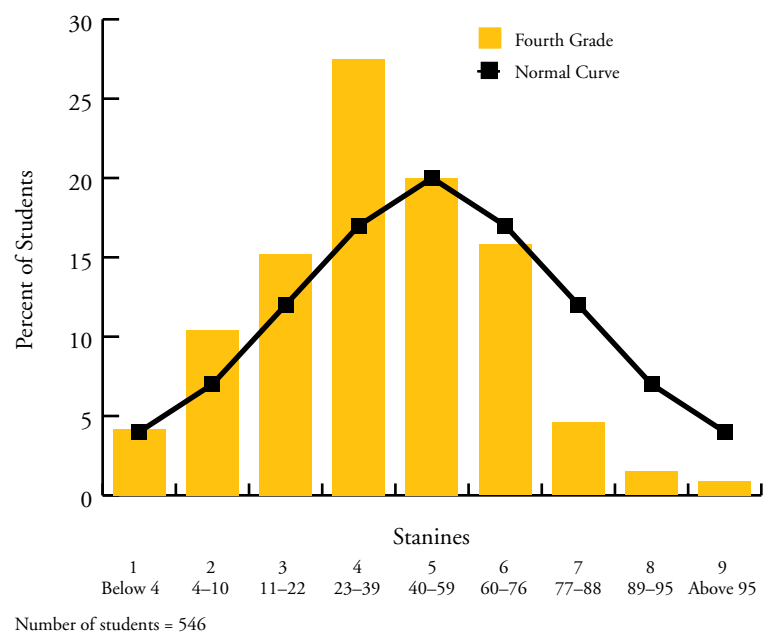
**Research question 2**

Scores of former Reading Recovery students compared very well to the average band performance in their schools on the ITBS Reading Vocabulary, Reading Comprehension and Total Reading scores. Average band performance was defined by one standard deviation from the mean of all the students in that grade at the Reading Recovery students' schools of attendance. Figure 3 shows

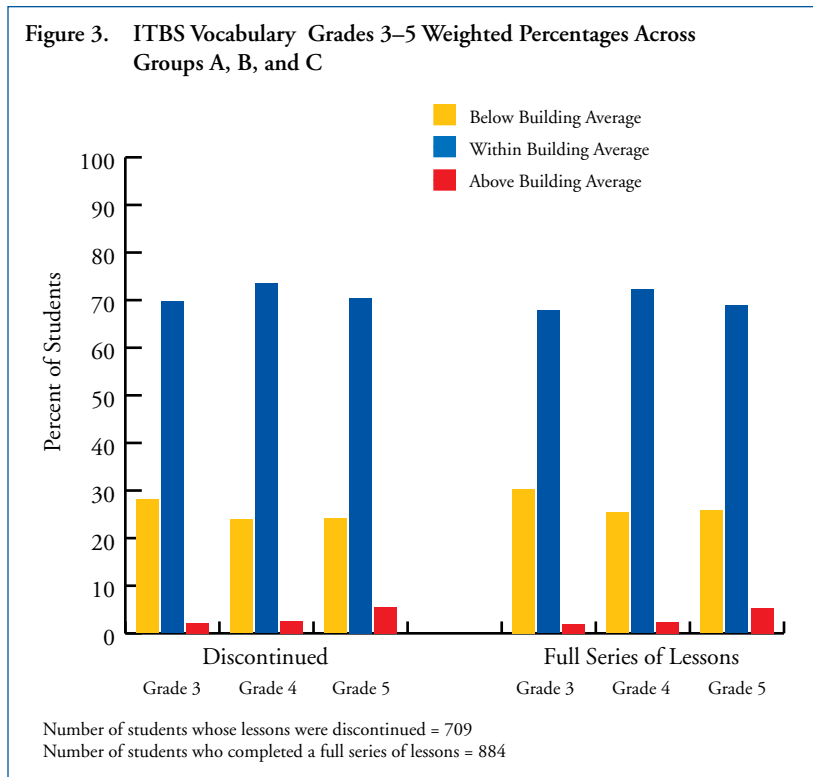
**Figure 1. Spring First Grade Text Reading Level Stanine Distribution Weighted Percentage Across Groups A & B Discontinued and Recommended Students**



**Figure 2. Fourth Grade ITBS Reading Comprehension Stanine Distribution Weighted Percentage Across Groups A & B Discontinued and Recommended Students**



**Figure 3. ITBS Vocabulary Grades 3–5 Weighted Percentages Across Groups A, B, and C**



the percentage of these students who performed below, within and above the average band on the ITBS Vocabulary Test in third, fourth, and fifth grades. The comparison on the left includes formerly discontinued students only. The comparison on the right includes all former Reading Recovery students who received a full series of lessons (both discontinued and recommended).

The comparisons on Reading Comprehension and Total Reading scores provide the same pattern of growth in Figures 4 and 5 respectively. Between 68.4% and 75% of all students who had received a full series of Reading Recovery lessons in first grade (both discontinued and recommended students) performed within or above the average band in their school on ITBS Vocabulary, Reading Comprehension and Total Reading scores in fourth grade. Between 71.6 and 78.3% of formerly discontinued

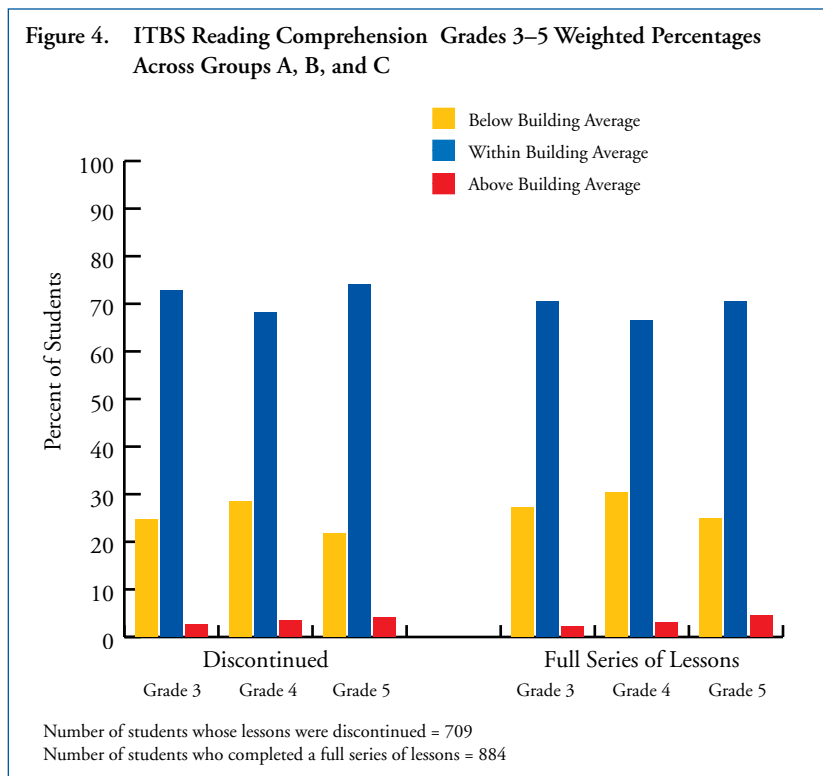
students performed within the average band on these same subtests.

## Discussion

A very high percentage of former Reading Recovery students in Iowa continue to perform very well on the ITBS several years after the intervention. At the beginning of first grade—before the Reading Recovery intervention—97.8% of the students demonstrated achievement in text reading on the Observation Survey at the very-lowest levels, scoring within the first stanine in Text Reading (lowest 4%), the lowest achievement level for the cohort. At the end of first grade—following the intervention—51.9% of the first graders scored at stanines 4 through 9, demonstrating average to above-average performance. In fourth grade, 70.3% of these same students scored at stanines 4 through 9.

The Reading Recovery intervention changed the expected outcomes for most of these students, as they began first grade well below grade level in

**Figure 4. ITBS Reading Comprehension Grades 3–5 Weighted Percentages Across Groups A, B, and C**



reading achievement. This confirms that the students sustained the gains made in Reading Recovery for several years, and many students even improved their performance after the Reading Recovery intervention. This is demonstrated by noting the higher percentage of students scoring at stanine 4 or above in fourth grade, compared to the percentage observed at these levels at the end of first grade.

While Reading Recovery reduces the number of struggling readers in first grade by approximately three-fourths, between two-thirds to three-fourths of those same students continue to perform within the average range or better on standard measures of reading achievement in third, fourth, and fifth grades. One of the challenges for Reading Recovery is to demonstrate that it makes a long-term difference for the students served. This study demonstrates that not only

does the intervention make a difference for many students who struggle to learn to read, but that the gains that are made are sustained. A very large percentage of students continue to succeed many years after the intervention.

### Conclusions

This study provides evidence of the sustained effects of the early intervention, Reading Recovery, for a large sample of students in Iowa. By analyzing the achievement of former Reading Recovery students in Grades 3–5 with a standardized measure of reading achievement, the ITBS, it was determined that most of the students continued to perform within the average or above-average range of their peers.

The results of this study for students and schools in Iowa reflect the observed success reported by a range of others (Askew et al., 2003; Briggs,

2003; Brown et al., 1999; Hovest & Day, 1997; Pinnell et al., 1994; Rowe, 1995; Sylva & Hurry, 1995) and confirm the benefit of providing Reading Recovery intervention for first-grade students struggling with reading and writing.

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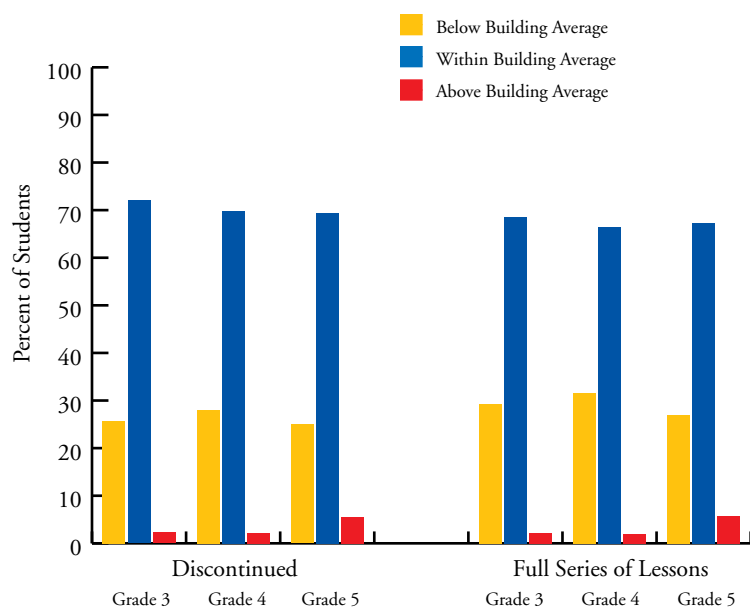
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Figure 5. ITBS Reading Total Grades 3–5 Weighted Percentages Across Groups A, B, and C



Number of students whose lessons were discontinued = 709  
 Number of students who completed a full series of lessons = 884

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