

Reading Recovery Comparison Study

National Reading Recovery & K-6
Classroom Literacy Conference

Columbus, Ohio

February 12, 2008

Deborah G. Litt, Ph.D.

District Demographics*

- Large urban/suburban school district
- 77% African-American
- High student mobility--19.2% enter/15.8% withdrawal
- High teacher turnover
- 53% qualified free or reduced price meals

*For year data was collected, 2001-2002

Demographics of RR children

- Disaggregated data not available for study year
- 1998-99 closest year available
- 81% African American, 8% White, 9% Hispanic, 1% Asian, 1% Other
- 69% eligible for free or reduced price meals

Method

- Pre-Post Design
- 2 Groups
- Children in Reading Recovery
- Children equally eligible for Reading Recovery, but waiting

Reading Recovery Selection

- Step 1: Teacher nominations
- Step 2: Testing of 20-40% of children in a first grade cohort by a Reading Recovery teacher with 6 assessments comprising Clay's *An Observation Survey* (1993, 2002)
- Step 3: Selection of overall lowest performing children

Observation Survey

- Letter Identification (LID)
- Ohio Word Test - word list
- Concepts About Print
- Hearing Sounds in Words
 - Dictation task
- Writing Vocabulary
- Text Level -oral reading

□ Participants

	No.	No. Bldngs
Cooperating RR Teachers	19	18
Reading Recovery Children	59 (62)	18
Comparison Group Children	14	3

Participant children

- Parental permission obtained
- English as home language
- Difficult to obtain permission from families of waitlisted children

Comparison Group Formation

- Children on waitlists
- Compared scores on OS to scores of children selected for RR intervention
- Scores had to be within range of RR selected children

How was this possible?

- Some buildings had 2 or more RR teachers; others had only 1.
- Children were placed on waitlists in some buildings who would have been selected for immediate intervention in another.

RR Random Sample Group

- Randomly selected subset of RR intervention group
- For purpose of statistical analysis

Equivalence of groups

MANOVA revealed a significant statistical difference between the 2 groups (Text Level excluded b/c it is not equal interval)

Wilks' Lambda of .79, $F(5, 70) = 3.72, p = .01$

BUT only different on **one** measure, Hearing Sound in Words

Comparison Group performed **better** than RR group

TABLE of Initial OS Scores belongs here

Located on a separate page
as a separate handout
because it is too small to
read here!

Additional Measures

- Phonological Awareness
 - Elision
 - Blending
- Rapid Object Naming

Comprehensive Test of Phonological Processing (CTOPP), Pro-Ed

Mean National Percentile Rank Elision, Blending, RAN-Objects

Group	N	EL	BL	RAN
Comparison	14	10.3 (6.7)	25.7 (15.6)	33.1 (27.0)
RR Intervention	62	15.3 (12.6)	17.7 (14.1)	25.8 (21.2)
RR Random Sample	14	18.1 (4.5)	19.5 (3.3)	25.1 (5.1)

No statistically significant differences among groups on PA measures or RAN objects

Outcome Measures

- Reading Recovery Text Level
- Sight Word Efficiency (SWE)
 - Subtest of the Test of Word Reading Efficiency (TOWRE), Pro-Ed

Text Level

- Series of increasingly difficult whole books
- Not equal interval scale
- Most difficult text for which the student can read with 90% accuracy = TL score

Levels 1 and 2

- Highly patterned
- Teacher introduces the pattern
- Child only needs to be able to follow the pattern



Levels 3, 4, 5

LEVEL 4

A boy sat on the table.

A girl sat on the table.

A duck sat on the table.

LEVEL 5

The bird said, "I can run in the sand. Can you?"

"Yes I can," the hippo said.
And she did.

Some letter-sound analysis or sound word knowledge required for Levels 3, 4, and 5

Partial alphabetic reading will get you through. (Ehri)

Full letter by letter analysis (Ehri's full alphabetic reading not required until Level 6

- Children who are reading at less than a Level 6 are not able to read previously unseen text.
- Emergent, not conventional readers
- My view, not without argument

Sight Word Efficiency (Pro-Ed)

- List of increasingly difficult words
- Measure of automatic word recognition
- Correlations to grade level, national percentile rank
- High correlation with W-J comprehension

Administration of SWE

- Student reads down list for 45 seconds
- No. of words correct transforms to grade level equivalent or percentile for age

Data Collection Schedule

Occasion 1	First 2 weeks of school Late Aug/Early Sept.
Occasion 2	4 week window Mid-Jan to Mid-Feb

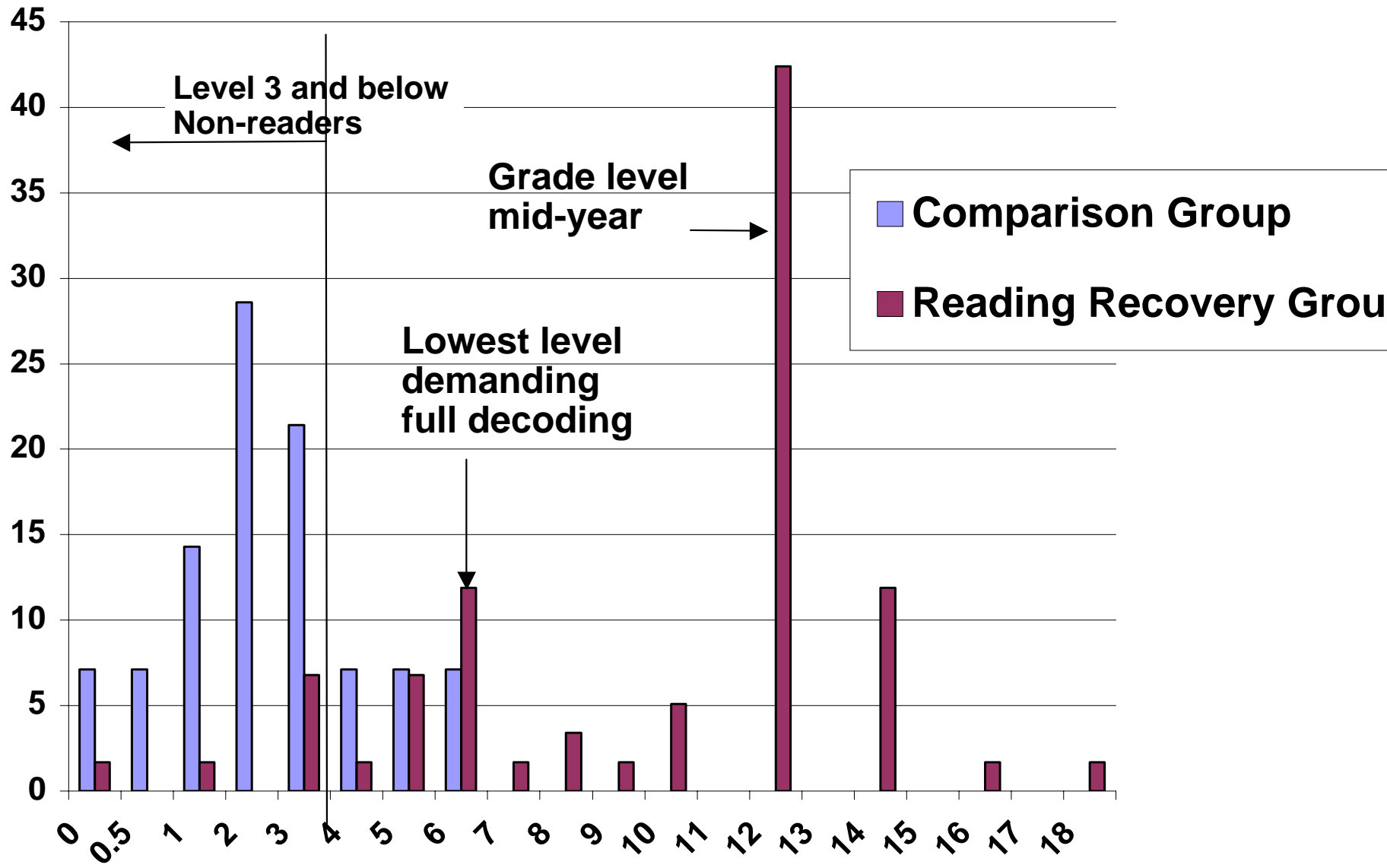
Data Collection Procedure

- Volunteer RR teachers sent me initial OS scores
- Volunteer RR teachers administered SWE & other non-RR measures
- I collected additional data for Comparison Group children
- RR procedures -- another trained teacher administers final text level

Text Level at Mid-Year

Group	N	Min	Max	Median
Comparison	14	0	6	2
RR Intervention	59	0	18	12
RR Random Sample	14	3	16	12

Text Level at Mid-Year



Statistical Significance

- Mann-Whitney U, $z = 4.22$, $p = .000$
- Cohen's d , 2.0 Large effect size

% of Group at Text Reading Level

Group	< TL3	TL3- 5	TL6	TL 7- 10*	TL12 or +
Comparison	57.2	35.6	7.1	0.0	0.0
Full RR	3.4	15.3	11.9	11.9	57.7
RR Random Sample	0.0	14.2	14.2	14.2	57.1

Another way to look at these results . . .

- The **highest** text level attained by ANY Comparison Group child was TL 6
- Thus, 93% of the Comparison Group could **not** read at TL6 at mid-year
- BUT only 19% of full RR; 14% RR Random Sample remained at that minimal level
- **The Foot Book** is TL8!

SWE at Mid-Year (Raw Scores)

Group	N	Min	Max	Mean
Comparison	13	0	17	8.6 (6.3)
Full RR	59	5	31	18.6 (6.1)
RR Random Sample	14	11	31	20.7 (6.1)

Statistical Significance

- $t(25) = 5.069, p = .000$
- Cohen's $d, 1.95$; Large effect size

Stark differences

- Words include: *to, the, cat, no, red*
- Two Comparison Group children could not read **any** of the words
- **NO** children who received RR intervention scored zero

SWE and grade level expectations

- 16-21 words considered grade level
- 21.4% of Comparison Group
- 69.7% full RR group
- 78.2% RR Random Sample group

Another way to look at it

- Best-performers in Comparison Group read 17 words (2 children, 21.4%)
- **More** than 17 words read by 61.2% of the full RR intervention group; 78.7% of the RR Random Sample group

What about PA and RAN?

- Both improved for ALL groups
- MANOVA revealed **no** statistically significant differences at mid-year

Elision, Blending, & RAN

Mean National Percentile Mid-Year

Group	N	EL	BL	RAN
Comparison	14	24.9 (15.9)	31.9 (20.2)	40.2 (30.8)
RR Intervention	62	34.2 (22.9)	39.6 (18.9)	41.2 (25.0)
RR Random Sample	14	30.8 (23.4)	43.6 (20.8)	50.2 (25.7)

Puzzle

- Comparison Group made gains in phonological awareness and Rapid Naming without commensurate gains in word or text reading

Summary of Results

Large effect sizes in reading progress both for continuous text and word reading favoring Reading Recovery intervention group

- An initially equivalent Comparison Group emphatically did **not** make adequate progress.
- All but one child in an initially equivalent Comparison Group made almost no progress

Observational data

- Several children in the Comparison Group could not match spoken words to written words mid-year

Limitations

- Small N
- Characteristics of specific school system

Implication - 1

- In high needs school districts 30% of children who qualify for Reading Recovery do NOT make adequate progress without intervention

Implication -2

Attend to print awareness

- **ALL** K & 1 teachers must understand what is meant by print awareness/concepts about print
- **ALL** K & 1 teachers must know **HOW** to **DEVELOP** it
- **ALL** K & 1 teachers must teach for it!
- **ALL** K & 1 teachers must be able to assess and recognize both mastery and gaps in print awareness

Key Early Print Concepts

- Concept of word in print
- Directionality
- What the “first” letter and “last” letter are
- Difference between word and letter
- One to one matching

Deborah G. Litt, Ph.D.
LittD@trinitydc.edu