

# EFFECTIVE School Practices

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## FOCUS: READING RECOVERY / PREVENTING READING FAILURE

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## Bet you didn't know ...

This is the first of what we hope will be a regular column in *Effective School Practices* entitled ... well, you've already read the title. Our hope is that ADI members will submit items for inclusion in future columns, to me, at:

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What kinds of material should you submit? Anything you think might be of interest to the ADI membership. Check out the items below. They may give you some ideas.

Janie Feinberg-DiNapoli of New York was among the very first people selected by SRA to become a Direct Instruction trainer, approximately fifty years ago. (Okay. Maybe twenty-five.) Today, Janie and her protégé, Paul McKinney, own a company called J. P Associates, which does large school-wide implementations of Direct Instruction in approximately fifty-five schools around the United States.

Gary Johnson is an ADI Board member, a principal author of the Corrective Reading program, and a much sought after independent consultant. But I'll bet you didn't know that Gary is a highly accomplished jazz guitarist. Gary's wife, Lise, is also a fine musician and music teacher.

Zig Engelmann never ceases to amaze those who know him. A couple of years ago, Zig decided to take up water color. That pastime seems a bit far afield from designing instructional programs, but Zig never does anything half way. In a short period of time, he has become an impressive water color artist. We will display some of his work at the 1997 Eugene Direct Instruction Conference, and with a little luck, some signed and numbered prints will be available for purchase.

One day last fall (October 24), three Direct Instruction notables were all presenting to state boards of education: Doug Carnine in Virginia, Bonnie Grossen in Michigan, and Ed Kameenui in Hawaii. One of these days, we might have to stop fighting the establishment because we might *be* the establishment.

Jerry Morton, an SRA representative in Florida, knows Direct Instruction backward and forward. Jerry taught Direct Instruction programs extensively before first becoming a Direct Instruction trainer and consultant, and ultimately, a sales representative. Jerry doesn't just sell books; he'll train teachers, then go into classrooms himself and teach demonstration lessons. You won't find very many sales representatives for very many textbook companies who can do it all. That might explain why Jerry sells billions and billions worth of Direct Instruction every year, all by himself.

Bob Dixon

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## Philosophy of Effective School Practices

1. Teachers are responsible for student learning.
2. The curriculum is a critical variable for instructional effectiveness.
3. Effective teaching practices are identified by instructional research that compares the results of a new practice with the results of a viable alternative.
4. Experiments should not be conducted using an entire generation of Americans. The initial experimentation with a new practice should be small in scale and carefully controlled so that negative outcomes are minimized.
5. A powerful technology for teaching exists that is not being utilized in most American schools.

*Effective School Practices* is published quarterly by the Association for Direct Instruction. The mission of the Association for Direct Instruction, as stated in the by-laws, is to promote the improvement of educational methods.

The name *Direct Instruction* originated with the highly effective instructional model first developed by Zig Engelmann in Project Follow Through during President Johnson's Great Society legislation. Although the evaluation of Project Follow Through showed the Direct Instruction model to be far more effective than the other models on every identified outcome, education in America remained generally unchanged.

A few educators, impressed by the extraordinary results of the original Direct Instruction model and the programs that were developed as DI evolved, formed the Association for Direct Instruction in 1981.

Today, this organization is a vanguard in promoting school practices that have been validated as effective through the use of the scientific method in educational research.

The Association for Direct Instruction was incorporated in 1981 in the state of Oregon for educational purposes. ADI is a nonprofit, tax-exempt

corporation under Section 501(c)3 of the Internal Revenue Code and is a publicly supported organization as defined in Sections 170(b)(1)(A)(ii) and 509(a)(1). Donations are tax-deductible.

A copy or summary of the current financial statement, or annual report, and registration filed by ADI may be obtained by contacting: ADI, PO 10252, Eugene, OR 97440 (503-485-1293). ADI is registered with the state of Oregon, Department of Justice, #79-16751. Copyright © 1996 Association for Direct Instruction.

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# From the Field

## LETTERS TO THE EDITOR

To the editor:

I want to share with you a list of rules a second grade teacher had posted behind her on the wall of her remedial reading center:

What Good Readers Do

1. Get your mouth ready.
2. Look at the picture.
3. Go back, start over.
4. What would sound right?

Is it any wonder that U.S. students are, for the most part, very poor readers? The miraculous thing is that any of them are learning to read in school at all!

Pat Wolf,  
Jones, Michigan

To the editor:

In New Zealand (where RR began) students enter school on their 5th birthday and at their 6th birthday are screened for RR. In theory the bottom performing 50% are given the Diagnostic Survey and from those results the WORST performing students are provided RR on a place availability basis. Other characteristics of the student are deemed to be irrelevant and so, mainstreamed special ed kids, including kids with Downs Syndrome and similar conditions, receive RR. In practice, of course, principals and teachers sometimes stretch the rules.

DISCONTINUATION. Students are expected to make one level of progress for every week in the program and, if they don't, the first step is to examine what the teacher is doing. If this checks out OK, they have the Ed Psych consider discontinuation. I used to be an Ed Psych in NZ and we had no criteria to make such a decision so I guess the decisions were variable. In my case, I used to examine all the data from pre-RR and RR and watch the teacher work with the student. I usually found that, although progress might be slower than desired, it was heaps better than anything else that had been done and so I was reluctant to authorize discontinuation unless they proposed an effective alternative. In a country where Whole Language is virtually a religion, there was nothing else as structured. I'd have happily recommended an SRA DI program but they were regarded as heretical.

Two other comments about RR that may interest you.

1. RR in NZ seems impervious to other research. For example William Tunmer of Massey University found that if the letter identification section of RR was supplemented with phonemic awareness training, students reached discontinuation criteria in about 42 lessons whereas regular RR took 57 (NZJ Educational Studies, 1992, 27 (2), 203-217). As far as I can tell, this has had no effect at all on the practice of RR. RR has become a sacred ritual and promoters of phonics are derisively called "phonicators".

2. I worked in a multiethnic, multilingual school where many children did not gain in RR. I did a language screen on all the five year olds (about 50) and we found that the English language competence of many was in the two to three-year range. Further, it consisted mainly of nouns and verbs with almost no prepositions, adjectives, adverbs. Distar was unacceptable to the school so I designed a program based on learning prepositions, adjectives and adverbs. For example we learned "on" by climbing on and describing ourselves as "on," and we climbed off and described ourselves as "not on." We also manipulated objects on and not on and learned to sit at desks and do worksheets on which we marked the ones that were on. DI by stealth I guess. Anyway, the 6 year old screening scores started to rise and these kids were just entering RR when I moved to a new job. The school told me that the problem was now solved but I couldn't get the data.

Although I am now in Singapore, all of these comments relate to New Zealand.

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To the editor:

I attended a workshop on RR last year at the annual meeting of the Association for Behavior Analysis. I am sorry to say that I don't recall the presenter's last name. She was great and I understood her to say that when a student is to be exited

from RR, the RR teacher surveys first grade classes and finds a group that is "slightly below" the RR student. Then they move the kid into that group to ensure success. (She was talking about how it is done in NZ). I was very interested and asked her to clarify, "Do you mean they group children for instruction by skill level?" She said, "Of course. How else would you do it?" I told her welcome to California! Does anyone else have information about that practice? I found it interesting. Also, schools in my area are doing something (Smart Start?—I could be wrong about the name) that is a sort of RR in small groups! What next?

CLW

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☞

*The following letter was not written for publication. Its author, Timothy Shanahan, wrote it in response to a request from the Office of Assemblyman Steve Baldwin of California. Assemblyman Baldwin had received various documents, including an article by Elfrieda H. Hiebert (Educational Researcher, 23, 9, 15-25) that had been critical of Reading Recovery and a letter, from William Lynch challenging Hiebert's claims. Shanahan, together with Rebecca Barr, had written an independent appraisal of Reading Recovery that was issued by one of the federal education labs so Assemblyman Baldwin requested assistance in evaluating the various claims and counter-claims. This letter, thus, is a response to the specific points of disagreement. Since it was written, the report on which it was based has been published (Reading Research Quarterly, 30, 958-997), and in May 1996 it received the Albert J. Harris Award from the International Reading Association for best research on reading problems.*

Center for Literacy  
The University of Illinois at Chicago  
1040 West Harrison Street  
Chicago, IL 60607-7133

June 26, 1995

Assemblyman Steve Baldwin  
District Office  
9584 Murray Drive  
La Mesa, CA 91942

Dear Assemblyman Baldwin:

I was asked, by Julie Anders of the Right to Read

Foundation, to send you some information pertinent to Reading Recovery. Although I am not affiliated with Right to Read and do not know whether my views are consonant with those of the organization, I can provide you with information relevant to your June 15th correspondence from William D. Lynch concerning Reading Recovery.

Last year, Ohio was exploring major expansions of that program. Their State Superintendent of Schools, Ted Sanders, contacted the North Central Regional Education Laboratory (NCREL) requesting information that would help resolve the controversy. NCREL is a federally supported educational laboratory that is responsible for interpreting educational research for the midwestern states. NCREL decided that the best way to adjudicate this issue was to hire a team of scholars to review all existing empirical research concerning the effectiveness of Reading Recovery. They invited Rebecca Barr and me to conduct that review. Professor Barr was selected because she is a noted scholar, she has served on various boards for the Reading Recovery effort, and had sponsored her university's Reading Recovery training-program. I was invited because of my reputation and because I had written the first published critique of reading Recovery research (it is cited in the Hiebert article that is the focus of much of the correspondence between you and Mr. Lynch). Our opposing views, commitment to accuracy, and lack of direct fiduciary relationship with Reading Recovery made us an appropriate team to conduct an independent review of evidence.

NCREL has released a report summarizing our findings that has been used by various states in their decision-making, and we have revised this report for publication in an upcoming issue of *Reading Research Quarterly*. To be accepted for publication in this prestigious journal, we had to respond to extensive criticisms and questions raised by four critics (including at least one who is part of the Reading Recovery movement) and three editors. It appears that our analysis represents the most thorough, accurate, and balanced appraisal of Reading Recovery. We found that Reading Recovery works, but not as well as its proponents claim; that its effects largely dissipate over time; and, that it costs about the equivalent of an additional year of schooling for the children who participate—even accounting for the savings in other expenditures. I have enclosed a preprint of the article.

Below I have briefly responded to the points raised by Gay Su Pinnell, Carol Lyons, and Noel Jones in their response that was shared with you. Pinnell and company are correct; Hiebert did use existing data to answer questions not raised in the

From *The Register-Guard*, March 17, 1997  
Reprinted with permission of the Associated Press.

# Kids 'wired' for how they learn

■ **Reading:** The long-used whole-language approach doesn't work for a lot of students.

By The Associated Press

Nora Newcombe's son was in first grade, and she was in a state.

Andrew was a bright kid, but he just couldn't read. A few months into the school year, he'd scored in the 24th percentile on a standardized reading test. His teacher said he needed to be in a class for children with learning disabilities. Andrew was frustrated and upset.

"He was like, 'I'm stupid. I can't do what the other kids do,'" Newcombe said.

So she gave Andrew an IQ test. No problems there. Then she went to her son's school and started asking questions: What exactly didn't he understand? What was going on in class? How was Andrew learning to read?

It turned out Andrew was being taught whole language, a reading instruction method that became popular in the 1980s and is widely used in the United States, Canada, New Zealand, Australia and Great Britain.

Although proponents tout it as the best way by far to teach kids how to read, nearly a decade of scientific research and sad experience have shown it can be a miserable failure.

The whole-language method has been blamed for educational disasters around the English-speaking world.

The aftermath of California's curriculum change and the recent popularity of whole language has led to a national cry for phonics, a return to the basic drills and Dick-and-Jane readers that most adults grew up with.

Phonics is no silver bullet, however. Advocates note it almost always wins in head-to-head tests against other instructional methods, but they usually fail to



Nora Newcombe reads with her son, Andrew, at their home.

mention that about one in four kids has trouble understanding it.

Meanwhile, a combination of scientific results from widely different fields is showing how most kids learn to read and why many have trouble picking it up. Most significantly, the research offers a reading-instruction method based on evidence rather than ideology, politics or assumptions about learning and language.

If only somebody would listen.

"It really is a huge scientific eureka," said Marilyn Adams, a visiting scholar at the Harvard Graduate School of Education.

by sounding out each letter in a written word. Thus "bag" becomes "buh, ah, guh," and then "bag."

That makes sense to somebody who already knows how to read. And eventually it makes sense to most kids, too. But when researchers began trying to program computers to generate speech about a decade ago, they discovered something that seems obvious once you think about it: The word "bag" isn't three sounds, it's one.

Advocates of the whole-language approach note that kids learn spoken language spontaneously. So if you give them books to read, signs to look at and plenty of encouragement, they ought to learn reading the same way. But linguists have known since the 1950s that spoken and written language are very different. Spoken language is an ancient trait evolutionarily hard-wired into the brain, whereas written communication is a relatively recent cultural development.

When it became apparent in the late 1980s that large numbers of American children were having trouble reading, Congress commissioned a study of the problem. It fell to Adams, then a senior researcher at the University of Illinois Center for the Study of Reading, to write the report.

The result, "Beginning to Read," summarizes the current knowledge about teaching children to read. Its basic message is that reading is a skill that must be learned through practice.

Imaging studies that show which parts of the brain are active during reading indicate that some kids — the same ones who have trouble learning to read — really are wired differently. It has nothing to do with intelligence.

"There are smart children who have this problem and there are fairly average or below-average students who do not have this problem," said John Silber, chairman of the Massachusetts Board of Education.

original reports. This is not a problem, however, as the data used could address issues of school effects appropriately. Although it is of no concern to Reading Recovery proponents whether the program raises overall school (or state) achievement, this issue is likely to be paramount in California where the program might be seen as one way to improve state test scores. Hiebert appears to be correct that Reading Recovery will not do that (New Zealand's school achievement for elementary children has not kept pace with the U.S., despite including nearly 1 of every 4 students in Reading Recovery).

As Pinnell claims, Reading Recovery does improve the reading ability of children enrolled in the program. However, the gains are much smaller than suggested. Any studies that used control groups comparisons showed that substantial parts of the improvement are due simply to maturation or regular first-grade instruction. Reading Recovery proponents are resistant to alterations in the program that would reduce the incidence of including children who do not need this assistance. One illustrative study (Center, 1995) found that 30% of the controls gained without any assistance, and that 65% of RR students progressed; thus, only 35% of students enrolled in the program improved more than would be expected. The claims that the program improves expectations for all students does not hold up; in fact, studies out of Ohio State show that RR teachers don't even adjust their own classroom instruction based on the program. By grade 4, the relative gains are still apparent, but are so minuscule that it is difficult to argue for their educational or economic significance. Long term, lasting effects is a very high, and perhaps, unfair standard; however, the claim that RR will solve learning problems completely requires this criterion.

We have completed the most thorough economic analysis of the costs and benefits of RR that exists. The costs that we report are based on national averages. You can easily adjust these by plugging in average California costs. We found that Reading Recovery neither prevents special education referrals, nor does it lower the cost of schooling in the long run. This is likely to represent a large additional educational expenditure.

Reading Recovery has been successful on a large scale and with a variety of population types as noted by Pinnell and company. We did not address its effectiveness with ESL populations, and the evidence cited concerning this appears to be insubstantial and has not yet been reviewed by any independent body (this does not mean that the claim is wrong, only that great care is needed in this area). Hiebert does criticize RR's lack of attention to com-

prehension, and this is probably an unwarranted complaint; the aspects of reading that have been measured are highly related to comprehension achievement.

I have not written this letter to you with the idea of preventing Reading Recovery adoption in the state of California, but to make sure that you have a complete understanding of its limitations. Its total adoption in California (1) will require enrollment of between 1/4 and 1/5 of all first-graders in the state; (2) will require increased annual expenditures of between 1/4 and 1/5 of the total educational cost of one primary grade of schooling; and (3) is unlikely to be reflected in higher average test scores for either the state or individual school districts. There are variants of Reading Recovery that appear to be promising in terms of reducing costs while maintaining effectiveness, but Reading Recovery proponents have typically denounced these and have prevented any kind of local experimentation (it is now a trademarked program). In fact, the religious zeal of Reading Recovery proponents sometimes causes divisiveness in local school districts; in response to our report I have heard of schools that have dropped the program to disassociate themselves from these unfortunate aspects of the national movement.

I strongly encourage you to support early interventions of a variety of types (Head Start, Family Literacy, Reading Recovery, Success for All, Chapter 1 redesigns, etc.), but to recognize that no single model has the answer and no intervention will do away with later educational costs. I also encourage you to support local experimentation with any of these models, as it is essential that these be delivered in the most effective and cost efficient manner. Studies of Reading Recovery suggest that the inclusion of direct phonics instruction, introducing the program to slightly older students, offering instruction to small groups rather than individuals, involving parents, and other innovations have the potential to maintain the success of this program while reducing cost dramatically. However California proceeds in the adoption of such programs, it should insist on local control.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely yours,  
Timothy Shanahan, PhD  
Professor  
Director, Center for Literacy

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# Reading Recovery: An Evaluation of Benefits and Costs

Bonnie Grossen and Gail Coulter  
University of Oregon

Barbara Ruggles  
Beacon Hill Elementary, Park Forest, Illinois

## Executive Summary

Reading Recovery is being widely adopted in North America:

*Reading Recovery sites operated in four Canadian provinces, 48 U.S. States, and the District of Columbia. Approximately 60,000 North American children were served by Reading Recovery educators during the 1993-94 school year. In California alone, more than 500 school districts served approximately 5000 children.*

(Schwartz & Klein, 1996)

Many believe Reading Recovery to be the best available program for preventing reading failure. Reading Recovery was developed in the 1970s by Dr. Marie Clay, a New Zealand educator, to deal with the reading failure occurring there. It was introduced in the United States through the Ohio State University in 1984 by Dr. Gay Su Pinnell and Dr. Charlotte Huck. Gay Sue Pinnell, Diane Deford, and Carol A. Lyons are directors of the National Reading Recovery Center at Ohio State in the U.S.

In Reading Recovery, program-trained teachers provide one-to-one tutoring in 30-minute daily sessions to the lowest 10 to 20% of a first-grade class who have the prerequisite skills for Reading Recovery. Reading Recovery advocates claim that the program brings the lowest performing children up to the average level of their local class by the end of first grade within 60 lessons, or 12 weeks. When students reach this goal they are "discontinued" from the Reading Recovery program, at which time the Reading Recovery teacher can take another student into the 30-minute slot. Each Reading Recovery-trained teacher, working a half-day with Reading Recovery, is expected to be able to tutor 8 students in one year, though actual figures from the national data set indicate that the average number of students per teacher is much lower—5.5, or 11 stu-

dents for a full-time equivalent teacher, according to Hiebert (1994).

Because of Reading Recovery's increasing popularity, and its expense, more independent evaluators are raising questions and reviewing the research that is cited to support claims regarding its effectiveness. Following is a summary of the findings of these reviews and other studies evaluating the impact of Reading Recovery. These findings should be considered in deciding whether to adopt, expand, or terminate Reading Recovery programs.

*The Reading Recovery data reporting system is flawed.*

The in-house Reading Recovery evaluation system results in considerable bias in the data collected through that system. Persons responsible for success collect the data on success. Without explanation, about half the data on children eligible for Reading Recovery are omitted from final analyses (Shanahan & Barr, 1995). In addition, the measures

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**Reading Recovery's goal to bring the lowest pupils to the average level of their class, falls short of a more equitable standard level, such as the national average.**

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used to evaluate Reading Recovery (*Clay Diagnostic Measures*) emphasize tasks that align with the specific strategies taught in Reading Recovery (Center, Wheldall, & Freeman, 1992; Wasik & Slavin, 1993). For example, the children are taught to use context to predict words rather than sounding them out. The reading measure uses predictable text, rather than text that uses authentic, natural language patterns. Children who have learned the prediction



strategies of Reading Recovery will score better reading predictable text than they will reading authentic text. Because of the close alignment of the measures with the strategies taught in Reading Recovery, the results of an evaluation using these measures are biased in favor of Reading Recovery.

*The standard for successful completion of Reading Recovery is not equitable.*

Reading Recovery's goal to bring the lowest pupils to the average level of their class, falls short of a more equitable *standard* level, such as the national average. The average level of performance of a class of children from low income areas is about the 20<sup>th</sup> percentile on national norm-referenced measures. ("Grade level" is the 50<sup>th</sup> percentile.) In inner-city schools where so many students do not learn to read, only a few students can be served with Reading Recovery. Some of the lowest children will be brought up to only the 20<sup>th</sup> percentile and many children performing below the 20<sup>th</sup> percentile will not be served. As a statewide intervention Reading Recovery would result in allocating the same resources to the goal of raising a few children in a low income school to the 20<sup>th</sup> percentile that it would allocate to a high income school raising children scoring below the 80<sup>th</sup> percentile to the 80<sup>th</sup> percentile. This inequity raises constitutional issues because it impacts minority children, who are overrepresented in low income schools. Average first-grade children are more likely to be nonreaders in low income schools.

*Reading Recovery does not raise overall school achievement levels.*

If a school's goal is to raise the overall level of reading performance, Reading Recovery is not the appropriate intervention to choose. Overall school achievement scores are not improved with the use of Reading Recovery (Hiebert, 1994). Both Reading Recovery advocates and critics agree on this point (Hiebert, 1994; Pinnell & Lyons, 1995).

*Far fewer students than claimed actually benefit from Reading Recovery.*

Analyses reporting that 75 to 85% of the children in Reading Recovery are successful are misleading because (a) nearly half the data are systematically omitted from the analyses (Shanahan & Barr, 1995), and (b) successful does not mean the children are readers. Successful is defined as being able to read text level measures at the average level of the child's class. Various independent evaluations have accounted for the missing data (Battelle, 1995; Shanahan & Barr, 1995). Figures 1 and 2 present these findings

in graphic form. In both figures the black areas represent the proportion of children who were served in Reading Recovery and the grey areas represent an estimate of the children who were eligible but were not served. Figure 1 shows the national Reading Recovery data that were gathered through the in-house data collection system. Figure 2 shows the Columbus, Ohio data that were gathered by an independent evaluator (Pollock, 1996) and reported as percentages of children served (shown in black).

Both evaluations omitted the number of children who are eligible but never served—often because they lacked prerequisite skills or were already identified for special education. Battelle (1995) is the only source that has reported this number (19%) in an evaluation of Ohio's Reading Recovery program. Battelle's figure is used in both figures (shown in grey). Children served but who do not complete Reading Recovery include children who are removed because they do not make adequate progress. These children are *not* counted in the calculation of Reading Recovery success rates. Excluding eligible children who are never served and served children who do not complete the program for various reasons inflates the success rate. In reality, the success rate describes how accurately the Reading Recovery teacher was able to predict which students would be able to match the classroom average on the Clay Diagnostic Measures upon completion of the program. Those the teacher predicted would not succeed, s/he should have removed from the program prior to completion.

*Reading Recovery does not reduce the need for other compensatory reading services.*

Reading Recovery does not eliminate the need for Title I. Pollock (1996) reports that in Columbus, Ohio, in the 1995-6 school year, only 14.7% of the children who completed the program reached national norms, and 81% of those completing the program still remained eligible for Title I services. When all eligible children are included in the calculation, only an estimated 6.5% reached national norms and 92% continued to be eligible for Title I after Reading Recovery was implemented. (Those who are never served or who do not complete Reading Recovery remain eligible for Title I services also.) Even among the smaller portion of children counted as successful over an eight-year period by Reading Recovery standards, 31% were still eligible for Title I services (Pollock, 1994).

Reading Recovery does not eliminate the need for special education. Six or 7% of the children who are served are referred to special education (Shanahan

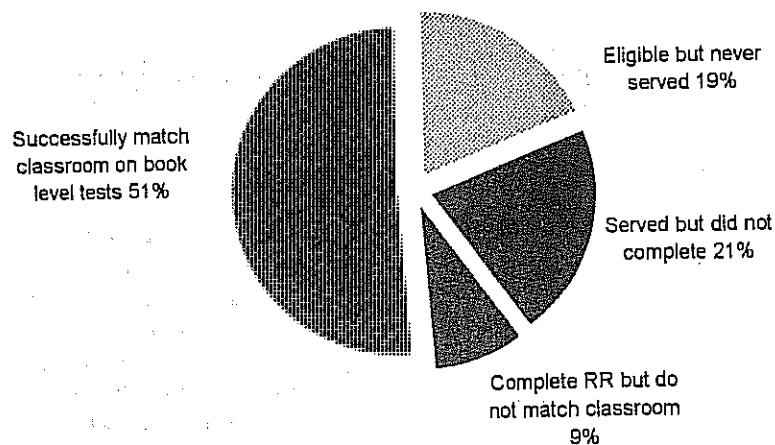


Figure 1. National Reading Recovery data.

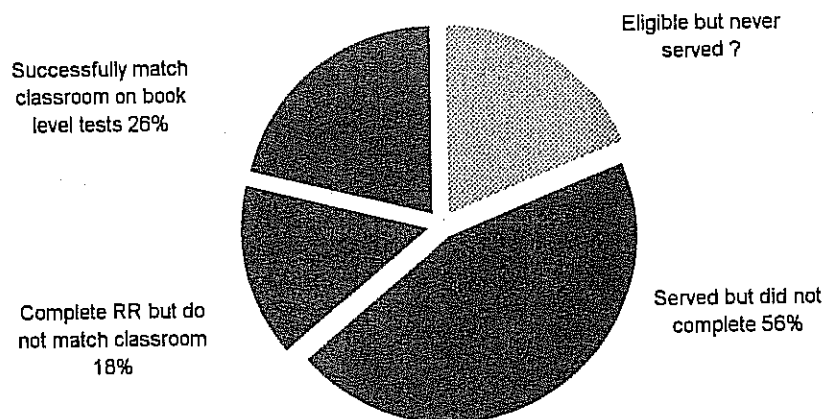


Figure 2. Outcomes in Columbus, Ohio, 1995-96.

& Barr, 1995). Wake County Public School System (WCPSS) in North Carolina found that Reading Recovery students, "compared to a control group, were just as likely to be retained, placed in special education, or served in [Title] I a year later" (1995, p. ii). Reading Recovery does not serve the lowest performing children. The average entry level percentile score of children who complete Reading Recovery is 34.5 (Hiebert, 1994).

*Children successful in Reading Recovery are often not successful later.*

Other research has documented that children who complete Reading Recovery and return to the class

do not continue to learn at the same rate as average children in the class, but seem to immediately begin falling behind again (DeFord, Pinnell, Lyons, and Place, 1990; Glynn, Crooks, Bethune, Ballard, and Smith, 1989; Shanahan & Barr, 1995). The learning rate of returned Reading Recovery children was slower than that of other low-achieving children (Glynn, Crooks, Bethune, Ballard, & Smith, 1989).

*Research-based alternative interventions are more effective than Reading Recovery.*

Independent evaluations have compared Reading Recovery with other common compensatory programs (Battelle, 1995; Fincher, 1991; WCPSS, 1995)

and found no advantage for Reading Recovery on measures using authentic text (the natural text used in the reading comprehension passages of standardized measures). One frequently cited study found Reading Recovery superior to other interventions (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). Pinnell et al. compared specific variations of Reading Recovery and found approximately equal results regardless of whether the teachers had less training or the instruction was delivered in groups of four. Rasinski (1995) found serious methodological flaws in the Pinnell et al. study. He adjusted the scores to hold instructional time equal and found that the effect of Reading Recovery was at best only equivalent to the other treatments on measures of authentic text (Gates-McGinitie). Fincher (1991) compared the performance of children in Reading Recovery with that of children in other compensatory programs in Canton City Schools, Ohio, over a five-year period and found that common Title I programs resulted in better performance on measures using authentic text and other standardized measures.

Teaching Assistants with almost no training and minimal teaching materials with which to teach and working in less than desirable conditions, outperformed the Reading Recovery teachers when their students' overall achievement was compared. Also, Reading

Recovery teachers, when their Reading Recovery students are compared with their Chapter I students, tend to get better results with the regular Chapter I program than with Reading Recovery. This has been the case every year since 1985-86, the year Reading Recovery was implemented in Canton.

(Fincher, 1991)

Research shows that explicit instruction in phonemic awareness beginning in kindergarten followed by explicit systematic instruction in phonics combined with extensive practice reading decodable text are emerging as important factors in the effective treatment of reading disabilities. Iversen and Tunmer (1993) added a component of systematic phonics to Reading Recovery. Reading Recovery with systematic phonics was 37% more efficient. Wasik and Slavin (1993) compared the relative effect sizes achieved by five treatments for reading problems. Reading Recovery was not nearly as effective as two programs that provided explicit systematic phonics with extensive practice reading decodable text (the Success for All and Wallach and Wallach programs). Decodable text is quite different from the predictable text used for practice in Reading Recovery.

Very recently the research program of the National Institute of Child Health and Human Development (Foorman, Francis, Beeler, Winikates, and Fletcher, in press) has found that changing the regu-

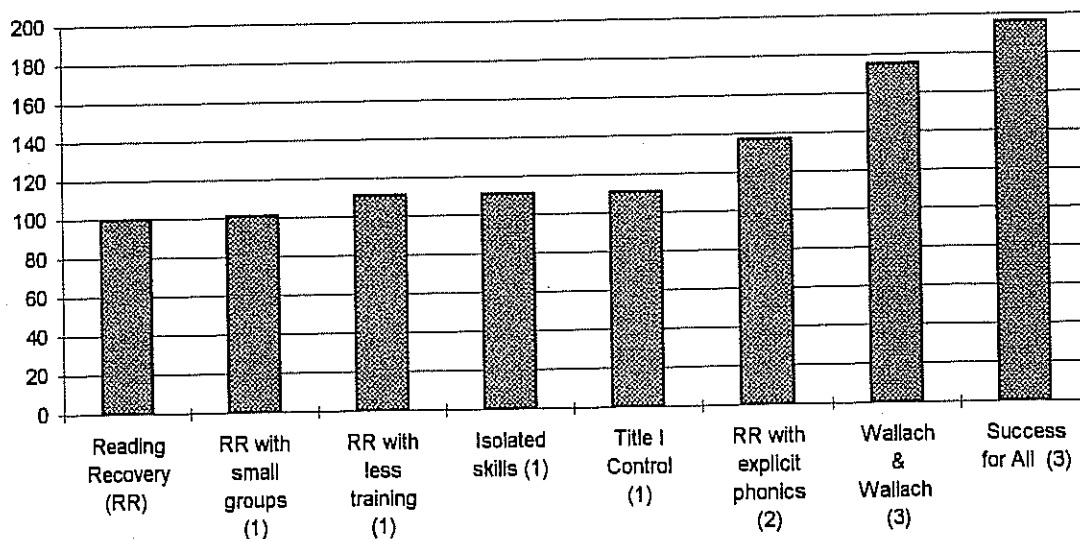
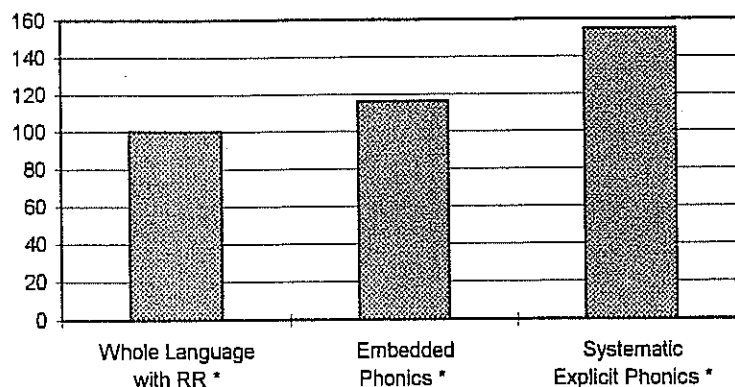


Figure 3. Relative effect size of various compensatory programs.



\* Foorman, Francis, Beeler, Winikates, and Fletcher, in press

Figure 4. Relative effect size of classwide interventions.

lar classroom program from whole language to incorporate explicit instruction in phonemic awareness and systematic phonics with decodable text is more effective than tutorial programs in reducing the occurrence of reading disabilities. Foorman et al. (in press) compared (a) whole language combined with an unlicensed Reading Recovery model, (b) embedded phonics, a semi-systematic program, and (c) explicit phonemic awareness with systematic explicit phonics and decodable text. All these treatments were delivered in the regular classroom. The explicit systematic phonic approach was more than 1 1/2 times as effective in preventing reading disabilities as whole language combined with the unlicensed Reading Recovery program (see Figure 4).

*Reading Recovery is extremely expensive and does not save other costs.*

Thirty hours of instruction for one child in Reading Recovery costs more than a full year of schooling for the child. Reading Recovery advocates argue that even when the highest cost estimates are used, the expense is cheap because the multi-year educational costs of special education and Title I are saved, as are the social costs of letting children fail to learn to read. However, best estimates indicate that approximately 90% of the children eligible for Reading Recovery services continue to need other compensatory services. Other alternative models are more effective. Many of these models are classwide and

actually cost much less, affect more students, produce higher performance, and, most importantly, change school and classroom practices so that the need for costly after-the-fact interventions are minimized. For the cost of one year of Reading Recovery in a school, class sizes could be reduced and the whole school's early literacy program could be redesigned. By adopting research-supported best practices and whole-school change, schools could significantly increase the number of students who can read authentic grade level text. Installing a more effective school-wide program is a one-time-only investment while Reading Recovery requires the same level of investment year after year.

### Research Methodology

*Does the Reading Recovery research design allow conclusions regarding program effectiveness?*

Reading Recovery includes not only an instructional program but also its own evaluation system that aligns with the program. Most of the data cited regarding the effectiveness of Reading Recovery are gathered through the Reading Recovery evaluation system. This system uses a unique pre- posttest research design and the Clay Diagnostic measures to assess student performance, both designed by Marie Clay, the Reading Recovery program developer. Close alignment of the research design, the measures, and the program, along with data collection procedures that are controlled within the Reading Recovery implementation system creates an in-

creased potential for bias in the results of an evaluation. Because most of the data available regarding the success of Reading Recovery come from its own evaluation system, the research design and the measures used in this system are discussed first.

### The Reading Recovery Research Design

The Reading Recovery research design is not adequate for concluding that Reading Recovery is a superior intervention. The research design specifies that comparison groups be selected at random from the Reading Recovery students' respective classrooms. The measures are administered to these children who then represent the average for that particular first grade class. Two types of data are used to compare the performance of the Reading Recovery children with that of the comparison group. First, the achievement of the comparison group is used to establish a band of achievement. The "band" is a half standard deviation above and below the mean in each of the areas taught to the Reading Recovery students and measured by the Clay Diag-

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**By adopting research-supported best practices and whole-school change, schools could significantly increase the number of students who can read authentic grade level text. Installing a more effective school-wide program is a one-time-only investment while Reading Recovery requires the same level of investment year after year.**

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nostic measures. If a Reading Recovery student's scores end up within this band, then the child is considered successful and is "discontinued" (Fincher, 1991). Secondly, the data are analyzed to compare the pre- post-gains made by the Reading Recovery children with the comparison group to see if the children in Reading Recovery gained at a faster than normal rate while in Reading Recovery.

This design is similar to that used in curriculum-based measurement (CBM), which is widely used for special education decision-making. However, there are two important differences: (a) in CBM the measures sample the class's curriculum to determine when a child is ready to be returned to the classroom; in Reading Recovery the measures sample the pull-out curriculum, and (b) in CBM conclusions are made regarding individual students so local norms are appropriate; in Reading Recovery local

norms are used to evaluate the effectiveness of Reading Recovery for a whole group of students. Local norms are not appropriate for program evaluation without reference to national norms, because local norms are highly variable, and there is no way to know whether an alternative program may have been more effective without an equivalent comparison group.

### The Measures

The Clay Diagnostic measures are used in the Reading Recovery evaluation system. Results obtained with these measures are somewhat misleading for two reasons: (a) content bias, and (b) unequal intervals between levels.

**Content bias.** As Wasik and Slavin (1993) and Center, Wheldall, and Freeman (1992) point out, the Clay Diagnostic measures sample the specific skills taught in the Reading Recovery program: "There is an articulation between the Reading Recovery program and the measures used to evaluate the program, suggesting that what is taught is what is measured" (Wasik & Slavin, 1993, p. 187). This is particularly true in the lower levels of the program, where assessments emphasize less authentic reading tasks and skills that are unique to Reading Recovery. The comparison children may have no experience with the kinds of tasks evaluated by these measures, while Reading Recovery children have extensive experience. Comparisons on these measures are likely to exaggerate the amount of learning for Reading Recovery children.

The primary evaluation tool in the Clay Diagnostic measures is the book-level measure, which is used to determine where a child places in the 20 levels of the instructional program booklets. It is the only measure in the battery that requires the children to read connected text. Though the text is connected, it is not authentic text. It is "predictable" text, where pictures and repetitive sentence patterns prompt the reader. Predictability is strongest at the lowest level and is gradually reduced as children progress into the higher levels. At the final 20<sup>th</sup> level the text is least predictable, but it still has predictable features limiting its authenticity. Children generally do not reach the 20<sup>th</sup> level before they are discontinued, since they only need to reach the class average to be returned to their classroom.

The national Reading Recovery data indicate that the average level at completion of Reading Recovery is only level 10 (Shanahan & Barr, 1995). At level 10, the texts are still very predictable so the children can read words without looking closely at them. The children rely more on the contextual clues, the illus-

trations and the repeated sentence patterns in the text. Children who use these contextual strategies to read are more likely to be successful in predictable text than in authentic text. Consequently, children from Reading Recovery may not read authentic text very well at all when they are returned to the classroom as "successful."

Stanovich and Stanovich (1995) report that many studies have found that authentic text is not very predictable:

It is often incorrectly assumed that predicting upcoming words in sentences is a relatively easy and highly accurate activity. Actually, many different empirical studies have indicated that naturalistic text is not that predictable. Alford (1980) found that for a set of moderately long expository passages of text, subjects needed an average of more than four guesses to correctly anticipate upcoming words in the passage (the method of scoring actually makes this a considerable underestimate). Across a variety of subject populations and texts, a reader's probability of predicting the next word in a passage is usually between .20 and .35 (Aborn, Rubenstein, & Sterling, 1959; Gough, 1983; Miller & Coleman, 1967; Perfetti, Goldman, & Hogaboam, 1979; Rubenstein & Aborn, 1958). Indeed, as Gough (1983) has shown, the figure is highest for function words, and is often quite low for the very words in the passage that carry the most information content."

(p. 90)

If authentic text is not very predictable, then children who read well in predictable text may not necessarily read well in authentic text. The strategies they have learned for reading may not generalize to real reading. These are important research questions that will be discussed in the review of empirical findings below.

**Unequal intervals.** Center, Wheldall, and Freeman (1992) point out that not only are the book-level measures biased to show positive results for the prediction strategies taught in Reading Recovery, but they are also biased to show greater growth on pre-post comparisons for lower performing children:

Data reported by Glynn et al. (1989) indicated that the relationship between the amount of instruction and reading performance was not linear with respect to text level. Over a given time period, the average increase in text level was greater for the lower level texts than for

the higher level texts (Iversen & Tunmer, in press).

(Center, Wheldall, & Freeman, 1992, p. 271)

Because the intervals between levels are smaller at the lower levels, greater gains for poorer readers in Reading Recovery may be spurious (Center, Wheldall, & Freeman, 1992). A lower-performing Reading Recovery child learns much less to move from level 1 to level 2 than an average performing child must learn to move from level 11 to 12. Even though these intervals are not equal, a Reading Recovery evaluation would interpret these as equal gains.

### Data Collection Procedures

The data collection process is not objective or independent. Those who collect and collate Reading Recovery success data have high stakes invested in the success of Reading Recovery. Reading Recovery teachers collect and collate success data for the children they teach. The supervisor uses the success data collected by the teacher to evaluate the same teacher. The supervisors then collate the data from the teachers they supervise to submit to their respective university training centers who use the data to evaluate the supervisors' performance. The national Reading Recovery directors at Ohio State University have collated the data from all the university training centers in reports to the National Diffusion Network, which has validated Reading Recovery as an effective research-based program based on these data.

Two aspects of the data collection procedures result in misleading calculations of success rates:

1. Children that the Reading Recovery teacher judges as not likely to be successful are not taken into the program. This judgment is based on entry level assessment, on a child's performance in the pre-program phase of "roaming around the known," or on other unspecified indicators. These excluded children are not counted among the children "served" by Reading Recovery, and, therefore, are not included in the calculation of the success rate.

2. Among children served some do not complete all 60 lessons. These children are also not counted in the success rate calculation. Sometimes these children are removed from Reading Recovery on the grounds that the program is not appropriate for them. Six to 7% are referred to special education (Shanahan & Barr, 1995). The others are generally referred to the Title I program. Some children fail to complete the program because the year ends before they are finished and Reading Recovery is only for first-time first graders. (Retained first graders are

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**The data collection process is not objective or independent. Those who collect and collate Reading Recovery success data have high stakes invested in the success of Reading Recovery.**

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not eligible.)

The needs of these children must either remain unserved or must be served by other compensatory programs. By repeatedly reducing the number of children counted in the total, the success rates reported for Reading Recovery are inflated.

### **Implications for This Review**

Because of the high levels of publicity that have been given the in-house evaluations of Reading Recovery and the built-in biases contained in the in-house evaluation system, the following review emphasizes the findings of independent evaluations. Two types of independent evaluations are available: (a) independent reviews of the data gathered through the Reading Recovery evaluation system, and (b) the results obtained on independent measures of children's ability to read authentic text. Even the independent reviews rely heavily on the data collected through the Reading Recovery in-house evaluation system simply because the other data are extremely limited. Hiebert (1994) and Shanahan and Barr (1995), for example, did not collect their own data on Reading Recovery but critiqued the analyses and conclusions made from data collected by other researchers, for the most part, data from the Reading Recovery evaluation system.

Very little data have been gathered comparing Reading Recovery with alternative programs or a control group. Most of these comparative studies have also been conducted by the Reading Recovery leaders, Pinnell, Huck, Lyons, and others who direct the Reading Recovery program nationally from Ohio State University. Independent evaluators include Battelle (1995) for the Ohio Department of Education, the Wake County Public School System in North Carolina (1995), Pollock (1996) for the Columbus Ohio Public Schools, and Fincher (1991) for the Canton Ohio Public Schools. These evaluators may have no stake in Reading Recovery but often include the data collected by the in-house system in their evaluations. The independence of the evaluators makes these analyses important.

### **Recent Independent Evaluations of the Reading Recovery Research Design**

The North Central Regional Educational Laboratory (NCREL), a federally supported educational laboratory responsible for interpreting educational research for the midwestern states, hired two scholars to review all the existing empirical research regarding the effectiveness of Reading Recovery. NCREL selected Rebecca Barr and Timothy Shanahan because they had articulated two opposing viewpoints regarding Reading Recovery. Barr is a noted advocate for Reading Recovery, having served on various boards for the Reading Recovery effort and as sponsor for her university's Reading Recovery training program. On the other hand, Shanahan is a noted critic of Reading Recovery, having written the first published critique of Reading Recovery research (1987).

By considering the perspectives of both sides, Shanahan and Barr's 1995 review *Reading Recovery: An Independent Evaluation of the Effects of an Early Instructional Intervention for At Risk Learners*, provides perhaps the most thorough analysis available of the data collected through the Reading Recovery evaluation system described above. Their basic finding was:

...that Reading Recovery leads to learning....It is less effective and more costly than has been claimed, and does not lead to systematic changes in classroom instruction, making it difficult to maintain learning gains. This is discouraging given program claims and its great expense. (p.1)

In addition to finding the reports of success misleading, Shanahan and Barr (1995) found unorthodox research procedures. For example, most of the Reading Recovery system data was located in unpublished technical reports produced by Reading Recovery leaders, Pinnell, Huck and others, at Ohio State University and had not undergone the peer review that is necessary to publish a study in scientific journals. A recent example of an unpublished technical report is an evaluation of Reading Recovery in Arkansas distributed by the Southern Regional Education Board (1996). This evaluation presents conclusions formed from data collected through the in-house Reading Recovery system and was not reviewed by an independent party.

All the studies Shanahan and Barr located suffered methodological problems: "We found no stud-

ies of Reading Recovery that did not suffer from serious methodological or reporting flaws—published or not” (1995, p. 961). Shanahan and Barr identified three types of problems in the Reading Recovery pre-post design, which would lead to exaggerated success rates:

[The reported learning gain] most certainly is an overestimate of typical amounts of learning from Reading Recovery for several reasons: (a) test score improvements not linked to learning are likely to occur when students with extreme scores are selected for participation; (b) normal development and learning gains typical of young children can be due to other sources of growth and education; and (c) there is systematic omission of children who are not having success in Reading Recovery. (p. 969)

The first two problems would be removed if equivalent groups of children were used as experimental controls. The systematic omission of data is a more serious problem because among those omitted are children the Reading Recovery teachers identify as ones who are not progressing well. Children who are not successful are intentionally dropped before completing the entire program. The reports then do not reflect how well Reading Recovery serves the entire population it claims to serve, nor do they provide information regarding overall class effects or school effects. Consequently, the success rates cannot be used to evaluate the effectiveness of Reading Recovery.

Probably the most serious flaw in Reading Recovery research has to do with who is included in the experimental sample. In some analyses, only discontinued students were examined, making the program appear more effective than it really is. In most of the studies, students were omitted from analysis because of serious learning problems, poor school attendance, or other similar difficulties. These omissions were often made without mention. It is impossible to provide a valid estimate of the effects of Reading Recovery unless all children who start the program are included in the eventual analysis.... Unfortunately, even two of the more sophisticated studies (Center, Wheldall, Freeman, Outhred, & McNaught, 1995; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994) that we analysed have lost as much as half of their data, without any

empirical estimate or control of the effects of these missing data. (p. 991-2)

The Ohio State programs have routinely collected information on those who are dropped for various reasons, but these data have not been taken account of in their studies or technical reports, nor have they been available to the public. Depending on the proportion of participants omitted in this fashion, this creates a substantial bias in favor of Reading Recovery gains, and there is no sound way to adjust the scores that are reported on this basis. (Shanahan & Barr, 1995, p. 966)

For these reasons, Shanahan and Barr (1995) found it impossible to use standard research procedures:

Overall, our consideration of the existing research and evaluation studies of Reading Recovery is largely qualitative. It would be difficult or impossible to conduct a thorough empirical examination of this work using procedures such as meta-analysis because there are so few studies, and those that exist usually provide insufficient information to make such analysis appropriate. (1995, p. 961)

## Equity

*Is the standard for successful completion of Reading Recovery equitable?*

The standard for successful completion is not equitable. Reading Recovery systematically results in lower expectations for children in lower achieving schools by bringing a child to only the average level of the other first-grade children in the child's class or school and not to a uniform national standard. The average level of performance of children in low income areas is approximately the 20<sup>th</sup> percentile, while the average level of children in higher income areas may be around the 80<sup>th</sup> percentile. To bring each child to the average level of the first-grade children in the child's local school leads to inequity. Children reading at only the 20<sup>th</sup> percentile in first grade are generally nonreaders and are likely to remain unsuccessful in school, while children reading at the 80<sup>th</sup> percentile in first grade are likely to be readers.

The relative notion of reading disability is problematic in America's poorest schools. In these schools accomplishing an instructional setting [class or school] average can mean returning children to the classroom with read-



ing levels in the bottom 15 to 25% of the national distribution—a level of performance that, even if maintained, makes it likely that the child will not complete school successfully. (Shanahan & Barr, 1995, p. 995)

As a statewide intervention, Reading Recovery would not be able to make readers out of all the lowest performing children. First, Reading Recovery does not make children readers. "Success" in Reading Recovery rarely means the children read. Second, low income schools with heavy concentrations of nonreaders need a school-wide intervention, not a tutorial that works with 10 to 20% of the children. Reading Recovery is least effective in the lowest performing schools because of the high proportion of students who are reading below the 25<sup>th</sup> percentile. In this case Reading Recovery can serve only a small percentage of students who are significantly behind. A large number of children who need services are left without assistance:

When there are such large proportions of low-achieving students, it can be more difficult to be successful with Reading Recovery (Smith, 1994). (Shanahan & Barr, 1995, p. 995)

Because a higher proportion of minority children live in low income areas and minority children are legally protected from educational inequality by the equal protection clause of the U.S. Constitution, Reading Recovery could potentially violate constitutional law by holding lower expectations for minority children. At least one site seems to have recognized this as a potential problem:

In New York City Reading Recovery programs, children are not discontinued until they reach national rather than local averages. (Shanahan & Barr, 1995, p. 995)

## Results

*Will Reading Recovery raise overall school achievement levels?*

If a school's goal is to raise the overall level of reading performance, Reading Recovery is not the appropriate intervention to choose. Both Reading Recovery advocates and critics agree on this point. Hiebert (1994) found that Reading Recovery had no positive effects on overall school achievement:

Despite the implementation of a program with 78,000 students from 1984-1993 in the United States, data from the three primary Reading

Recovery sites and from the longitudinal study (DeFord et al., 1990) produce an unconvincing scenario of the effects of Reading Recovery on an age cohort. (p. 23)

In a response to Hiebert, Reading Recovery promoters, Pinnell and Lyons (1995) agreed that they do not expect Reading Recovery to have an effect on overall achievement:

Implementation of the program ... in a given school does not necessarily mean an increase in mean scores but an increase of actual numbers of children at average levels .... [Reading Recovery] will not have lifted the scores of the entire age cohort! It never claimed to do this. Changes in mean scores for the total group may or may not increase; the objective of [Reading Recovery] is to have a larger group of children in the middle range. (p. 1)

*Who actually benefits from Reading Recovery?*

Reading Recovery advocates claim a very high success rate with problem children:

Approximately 75-85 percent of the lowest 20 percent of children served by Reading Recovery achieved reading and writing scores in the average range of their class and received no additional supplemental instruction (Pinnell, Lyons, & DeFord, 1988; DeFord, Estice, Fried, Lyons, & Pinnell, 1993; Swartz, Shook, & Hoffman, 1993).

(Swartz & Klein, 1996)

The independent evaluations find these claims to be exaggerated. First of all, Reading Recovery does not serve all of the lowest children. In a study of Ohio children, the mean national percentile score of children entering Reading Recovery from 1986 to 1991 was not below the 20<sup>th</sup> percentile, but was 34.5 on the comprehension subscale of the Metropolitan Achievement Test (Hiebert, 1994). Hiebert interpreted this to mean that the children selected for Reading Recovery come from the 4<sup>th</sup> quintile (20<sup>th</sup> to 40<sup>th</sup> percentile) rather than the bottom quintile (0 to 20<sup>th</sup> percentile) as claimed. This higher entry level can be explained in three possible ways: (a) Children are not accepted if they do not meet entry criteria, (b) children who do not make progress are dropped from the program, and (b) a uniform percentage of children in each school are served, regardless of the overall level of performance of children in the school.

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*Children not meeting entry level requirements are not accepted.* Reading Recovery requires that children meet certain criteria on the Clay Diagnostic Measures to enter the Reading Recovery program. In addition, children who are already identified as special education children are not accepted into the program.

Even with these tests and teachers' subjective observations, the potential of children beginning first grade is very difficult to judge. Reading Recovery includes a preprogram phase of "roaming the known" where the Reading Recovery teacher may conduct further informal analyses of the potential of children. During this time the Reading Recovery teacher may reject children who are judged unlikely to benefit from the program. Some of these rejected children are referred to special education. These children are not counted among "served children," because they are considered to have never officially begun Reading Recovery.

Reading Recovery does not report the number of low-performing children who are rejected before lesson 1 because they are not expected to benefit from the program. However, Battelle (1995) included the number of eligible children who were never served in an independent evaluation in Ohio. Eligible children who were never served included the number of rejected children as well as the number of children who never got a turn in Reading Recovery. Battelle's data indicate that together these children represent 19% of the children originally eligible for Reading Recovery.

*Children not making progress are dropped.* The Reading Recovery policy is to anticipate which children will not be successful in Reading Recovery and remove them from the program before completing the full program of 60 lessons. A child who will not benefit from Reading Recovery is to be replaced with a child whom the Reading Recovery teacher believes will benefit, by lesson 12 if possible.

Many of the children who do not seem to benefit are referred to special education. Shanahan and Barr (1995) noted that in Illinois, 7% of the children who began Reading Recovery were referred to special education and, therefore, did not complete the program; and in the Wake County Public School System, 6% were referred to special education. This is in addition to the special education children who were already identified and rejected prior to entry into Reading Recovery. Removing the lowest performing children who make little or no progress in the first several lessons increases the average performance of the remaining group of children. Those children who complete the Reading Recovery program are those children that the Reading Recovery teacher predicted would be able to match the class-

room average on the Clay Diagnostic Measures upon completion of the program.

*Reading Recovery can serve only a fraction of the children in first grade.* The claim to serve the "lowest 20 percent" refers to the local school population, not the national population. When most of the children in a school are in the bottom quintile nationally, Reading Recovery could only serve the lowest 20% of that bottom quintile, leaving 80% of the bottom quintile unserved. On the other hand, when few

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**The Reading Recovery policy is to anticipate which children will not be successful in Reading Recovery and remove them from the program before completing the full program of 60 lessons.**

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children are in the bottom quintile, Reading Recovery will serve children performing at higher levels. Because of the greater availability of Title I funds in low income schools Reading Recovery is more common in those schools.

#### *How successful is Reading Recovery?*

Children who achieve at the average level of their first-grade class on the book-level measures developed for Reading Recovery are usually non-readers, so success in Reading Recovery rarely means the child is a reader. The average book-level score of a child successfully completing Reading Recovery is level 10 (Shanahan & Barr, 1995). Children scoring at level 10 are not reading authentic text, yet these children would be counted as Reading Recovery successes.

Moreover, the success rates with the children who complete Reading Recovery, as determined by the book-level measures, are exaggerated. Shanahan and Barr (1995) reviewed the national data collected through the Reading Recovery evaluation system (22,193 children) and reported to the National Diffusion Network (DeFord, Estice, Fried, Lyons, & Pinnell, 1993). The success rate was calculated as 84% in the report. However, using the same data and including the 26% who began but did not complete Reading Recovery in the calculation, Shanahan and Barr calculated the percentage of successful children from among all the children served to be only 62%:

The percentage discontinued [successful] that was reported for the 1991-2 sample, for example, is 84%. Yet, if we were to consider the

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total number of students served, including those with fewer than 60 lessons, only 62% of the total would be found to complete the program successfully.

(p. 965)

Sixty-two percent is a high estimate because no data were included in the report to the National Diffusion Network regarding the size of the additional group of children who were eligible, but were never served (Shanahan and Barr, 1995). As noted earlier, Battelle's (1995) evaluation for the Ohio Department of Education found that this group represented 19% of the children found eligible for Reading Recovery. If the 19% who were never served are included, the success rate drops to 51%.

This figure for the national data (51%) seems a reasonable estimate because it is very close to Battelle's figure for Ohio (1995). Battelle found that only 53% of the children eligible for Reading Recovery scored at the classroom average on the book-level measures at the end of first grade. (19% were not served; 28% were served but did not meet program objectives.):

Slightly more than 200 students in 36 Ohio school districts were determined to be eligible to receive Reading Recovery services in 1990-91, but did not. Also about 300 of the nearly 875 students who received Reading Recovery services in 1990-91 did not discontinue [were not successful].

(p. 68, Battelle, 1995)

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### **Removing the lowest performing children who make little or no progress in the first several lessons increases the average performance of the remaining group of children.**

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Many reports of Reading Recovery success use the in-house evaluation system and suffer the methodological problems pointed out by Shanahan and Barr (1995). For example, the Southwest Regional Education Board (1996) recently published a report of the Arkansas data gathered through the in-house evaluation system ("Getting Elementary Schools Ready for Children: Reading First"). No independent measures were used to evaluate children's reading performance. Only the Clay Diagnostic measures were used. The report claims an 86% success

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**The average book-level score of a child successfully completing Reading Recovery is level 10 (Shanahan & Barr, 1995). Children scoring at level 10 are not reading authentic text, yet these children would be counted as Reading Recovery successes.**

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rate; however, this rate is calculated based on the smaller proportion of children who received a full program. Thirty-one percent of the children served did not receive a full program but these children were not included in the calculation of the success rate. The numbers of children who were eligible but not served was not reported, nor were the numbers of children referred to special education or otherwise dropped from Reading Recovery because of inadequate progress.

In contrast to the high success rates reported for Arkansas from the in-house evaluation system, Pollock (1996), an independent evaluator, found that only 14.7% of the children completing the program reached national norms on standardized measures in the 1995-6 evaluation of Columbus Ohio Public Schools. (This was a higher percentage than Pollock found in the previous years.) This means that only 6.5% of the children originally eligible for Reading Recovery read at grade level at the end of first grade in 1996. Eligible children represent 20% of the first grade class. To put this in perspective, out of a group of 100 children, only 1 child among the 20 eligible for Reading Recovery would read at grade level due to the Reading Recovery program. Whether other pull-out programs could do as well or better could only be determined with a comparison study.

*Does Reading Recovery do away with the need for other compensatory services?*

Reading Recovery advocates claim that Reading Recovery is so effective that Title I and special education programs are no longer needed, thus creating a savings greater than the expense of Reading Recovery (Dyer, 1992; Southern Regional Education Board, 1996). This argument assumes that by implementing Reading Recovery, children will not need assistance from any other compensatory programs.

The data indicate this assumption is false. As noted earlier, special education children are not accepted into the program and, furthermore, the program removes many children and refers them to special education.

It should be noted that Reading Recovery does not do away with early referrals for special education, as the program itself makes many such referrals.

(Shanahan & Barr, 1995, p.987)

Reading Recovery does not do away with the need for Title I services either. Children who successfully complete Reading Recovery often need additional assistance. Pollock (1996) reported that 81% of the children who completed Reading Recovery were still eligible for Title I services in Columbus in the 1995-6 school year. This means that among all children eligible for Title I before Reading Recovery, 92% were still eligible after Reading Recovery. In Columbus over an eight-year period, 31% of the children counted as successful by Reading Recovery standards were still eligible for Title I services (Pollock, 1994).

*Are the effects of Reading Recovery sustained over time?*

Advocates also claim that Reading Recovery enables children to establish a self-extending learning system that allows them to improve as readers after they are returned to the classroom. To support this claim, advocates cite any evidence of growth in reading among discontinued Reading Recovery children without comparing this growth with that of a control group. Evaluations with a control group find that children who return to the classroom as successfully "recovered" students immediately begin falling behind. Their learning rate is slower than that of other low-achieving children. For example, Glynn, Crooks, Bethune, Ballard, and Smith (1989) found that the learning rate of Reading Recovery children immediately slowed when the children were returned to the classroom and was much lower than that of other low-achieving children. Data from DeFord, Pinnell, Lyons, and Place (1990) also indicate that Reading Recovery children did not learn at a rate comparable to the average children in the class after being discontinued from Reading Recovery (Shanahan & Barr, 1995). Part of the problem may be that the children have difficulty transferring their strategies of prediction from the predictable text they read in Reading Recovery to the authentic text they might read in the regular classroom.

By third grade, even the effects found on the book-level measures have washed out. "These results suggest that by third grade, the Reading Recovery instructed groups may not be significantly different from the comparison groups as indicated by measures of text reading" (Shanahan & Barr,

1995, p.980). Hiebert (1994) found the same pattern of results at fourth grade:

Although Reading Recovery-tutored students perform better than Achievement Comparison students on an oral reading task, this difference disappears when the task is a standardized one, even one that has the limited passages of the Woodcock Reading Mastery Test—Revised.

(p. 23)

*Is Reading Recovery more effective than common Title I programs?*

Reading Recovery advocates claim that Reading Recovery is more effective than other reading programs:

Studies have shown Reading Recovery to be more effective in achieving short-term and sustained progress in reading and writing than other intervention programs, both one-to-one tutorial and small group methods (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Gregory, Earl, & ODonoghue, 1993) (Swartz & Klein, 1996)

The Reading Recovery evaluation system does not compare Reading Recovery with alternative interventions. Separate studies have found that measures using authentic text (standardized measures) generally show no advantage for Reading Recovery over other programs, even at the end of first grade. The Clay Diagnostic measures are generally the only measures that show positive effects for Reading Recovery. For example, Shanahan and Barr (1995) report: "None of the [early intervention] programs, including Reading Recovery, had any impact on standardized test performance at the end of first grade" (p. 977). Fincher (1991) compared the performance of children in Reading Recovery with that of children in other compensatory programs in Canton City Schools, Ohio, over a five-year period and found that "teaching Assistants with almost no training and minimal teaching materials with which to teach and working in less than desirable conditions, outperformed the Reading Recovery teachers when their students' overall achievement was compared." Fincher also found that when the same teachers teach Reading Recovery and Title I, the teachers get better results with the Title I program.

Wake County Public School System found that Reading Recovery students, "compared to a control group, were just as likely to be retained, placed in special education, or served in [Title] I a year later" (WCPPS, 1995, p. ii).

Battelle (1995) also compared Reading Recovery with other compensatory programs independent measures on independent measures. Battelle had a great deal of difficulty getting Ohio schools to administer and submit the results of the independent standardized measures. From the submitted data, Battelle found that at the end of the first year, Reading Recovery students scored only 3.4 percentile points higher than children receiving other common nonindividualized compensatory services in comparison schools. (These services varied considerably from pull-out programs to occasional assistance in the regular classroom.) Even though the small difference was statistically significant, it was not educationally significant according to Battelle.

One frequently cited study (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994) found Reading Recovery more effective than four alternative methods: (a) group delivered Reading Recovery, (b) Reading Recovery delivered by teachers with less training, (c) skills-based instruction without the Reading Recovery framework, and (d) a control. These were the four treatments compared:

1. Reading and Writing was a small-group tutorial program taught by certified teachers trained in Reading Recovery.
2. Reading Success was an individualized tutoring program modeled on Reading Recovery. It was taught by substitute certified teachers who had only some Reading Recovery training.
3. Isolated Skills was individualized tutoring focusing on letters, sounds, words, and text-level strategies. Instruction was based on the classroom basal system. Substitute certified teachers received a 3-day intensive training program and were encouraged to use creativity to explore skills in different ways.
4. The control group was a Title I program using group instruction that focused on practicing skills and learning core words. Teachers received no special training.

Rasinski (1995) points out 3 important methodological flaws in the Pinnell et al. study (1994):

1. Using substitute teachers to teach two of the treatments versus the more experienced teachers who are currently working in the school for the other treatments could have influenced the results.
2. The instructional time varied across treatment conditions, with Reading Recovery

children receiving significantly more instruction. Rasinski adjusted the posttest scores by the instructional time factor and found that 5 out of 6 mean scores for children in the comparison treatments were higher than the mean scores of the Reading Recovery group. This means that when the scores were adjusted to equalize instructional time, the other interventions obtained better results than Reading Recovery. (See Figure 3 in the Executive Summary.) Only the book-level measures showed consistently better results for Reading Recovery after this adjustment.

3. The comparison of individualized Reading Recovery with small group Reading Recovery did not equalize the teacher time. Two hours of instructional time for teaching 4 students in the individualized format was compared with only 1/2 hour for teaching 4 students in the small group format. Though the mean scores of both groups were essentially equal, the fact that small group Reading Recovery was four times as efficient as individualized Reading Recovery was overlooked in the report.

In light of Rasinski's criticisms, many conclusions that Pinnell et al. (1994) made cannot be accepted without further replication. These replications have not occurred.

#### *How does Reading Recovery compare with other research-based interventions?*

None of the interventions compared in the Pinnell et al. study incorporated features of effective instruction to prevent reading disabilities that have recently been identified by the National Institute of Child Health and Human Development program (Center for the Future of Teaching and Learning, 1996). Explicit phonemic awareness instruction in kindergarten with systematic, explicit phonics and extensive practice reading decodable text has had the greatest success in preventing the occurrence of reading problems. Iversen and Tunmer (1993) found that when Reading Recovery was modified to be more systematic, it was 37% more effective. Subsequently, Torgesen, Wagner, Rashotte, and Alexander (in press) found that an explicit systematic approach combined with decodable text was more effective than instruction similar to Iversen and Tunmer's modified Reading Recovery treatment.

Wasik and Slavin (1993) compared the relative effect sizes achieved by five treatments for reading

problems in five separate meta-analyses. Two programs had much larger effect sizes than Reading Recovery. Conclusions from such meta-analyses may not be as dependable because of possible differences in the control groups. However, the design of the two more effective programs is consistent with the findings of a significant body of other research, lending support to a conclusion that the two treatments identified as superior by Wasik and Slavin are indeed superior to Reading Recovery. Reading Recovery was not nearly as effective as two programs that provided explicit systematic phonics with extensive practice reading decodable text (the Success for All and Wallach and Wallach programs).

Foorman, Francis, Beeler, Winikates, and Fletcher (in press) found explicit phonemic awareness and phonics combined with decodable text much more effective with Title I children than a whole language program with an unlicensed Reading Recovery support program. The explicit systematic treatment was most effective when it was used in the regular classroom.

In order to avoid reading failure, the focus should be on prevention, not intervention. It was the classroom curriculum effect, not the tutorial method effect that was significant. The tutorial effect was not particularly strong, given the weak association between growth in word reading and number of days in tutorial."

(Foorman, Francis, Beerly, Winikates, & Fletcher, in press, p. 16)

These findings support Nicholson's recommendation: "If we ... teach letter-sound correspondences [in the regular classroom], we'll reduce the need for Reading Recovery" (Nicholson cited in O'Hare, 1995, p. 22).

In fact, many of the instructional techniques used in Reading Recovery are inconsistent with the techniques supported by evidence from scientific intervention research. The findings of the NICHD research (Center for the Future of Teaching and Learning, 1996) emphasize the value of systematic instruction in phonological skills and the alphabetic principle. The key features of systematic instruction are the following: (a) the lessons are logically organized and planned, and (b) the lessons allow for extensive practice applying phonological skills in decodable text.

Reading Recovery does not provide systematic instruction in letter-sound relationships (the alphabetic principle). Reading Recovery's own document, *Reading Recovery Executive Summary, 1984-*

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**Many of the instructional techniques used in Reading Recovery are inconsistent with the techniques supported by evidence from scientific intervention research.**

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1995 describes the unsystematic nature of the instruction in letter-sound relationships:

Our approach to phonics does not involve following some prescribed, predefined logical sequence for every student....Many children learn all they need about letter/sound relationships in the process of writing messages, other children are engaged in activities designed to extend their meager knowledge of words. (p. 8)

Reading Recovery does not use decodable text. Decodable text is composed of words that use the letter-sound correspondences the children have learned to that point and a limited number of sight words that have been systematically taught. This allows the children opportunity to practice the letter-sound relationships they have learned in the context of real reading. Reading Recovery uses predictable text which leads the children to use context clues contained in the pictures and provided by the repetitive sentence patterns instead of using sounds for the letters in the word. Predictable text does not give children the opportunity to practice their letter-sound knowledge in the context of real reading. Research shows that overuse of context to figure out unknown words, in fact, "hampers" reading acquisition (Lyon & Chhabra, 1996).

### Costs

*Is Reading Recovery cost-effective?*

Reading Recovery advocates argue that even when high cost estimates are used, the expense is cheap compared to the multi-year educational costs of special education and Title I and the social costs of letting the child fail to learn to read. Dyer (1992) claimed that although the initial set-up of Reading Recovery is costly, the savings in retentions, Title I, and Special Education services for districts over the long term is substantial. In fact, Dyer even argued that the short-term annual cost of Reading Recovery is less expensive than first-grade retention.

Dyer's figures for savings (see Table I) assume that (a) Title I and special education are completely

**Table 1. Dyer's Original Case for Cost Effectiveness with Hiebert's and Shanahan and Barr's Responses**

Table 1. Dyer's original case for cost effectiveness with Hiebert and Shanahan & Barr's response

|   | Dyer, 1992                  | Hiebert, 1994   | Shanahan & Barr, 1995                               | California audit, 1996 |
|---|-----------------------------|---|---|------------------------|
| <b>COSTS</b>                                |                             |   |   |                        |
| Teacher salary                              | \$33,015                    | \$33,015  | \$35,104<br>(1992-3 ave, AFT)                       | omitted                |
| Benefits                                    | omitted                     | omitted   | \$8425<br>(26% in 1992, Bureau of Labor Statistics) | omitted                |
| Initial Training per teacher                | omitted                     | omitted   | \$325*  | \$2000*                |
| Teacher Leader                              | omitted                     | omitted   | \$2042*   | \$4575*                |
| Training room set-up                        | omitted                     | omitted   | omitted   | omitted                |
| Yearly conference                           | omitted                     | omitted   | omitted   | omitted                |
| Travel                                      | omitted                     | omitted   | omitted   | omitted                |
| On-going support                            | omitted                     | omitted   | omitted   | omitted                |
| Substitutes during training                 |                             |   |   | omitted                |
| Instructional materials                     |                             |   | \$350*  | \$375*                 |
| Cost per teacher                            | \$33,015                    | \$33,015  | \$46,246  |                        |
| No. of children served                      | 16 (the number recommended) | 11 (actual number served)   | 8 (number discontinued)                             |                        |
| Cost per child                              | \$2063                      | \$3000  | \$4625  |                        |
| Cost per successful child at end of grade 1 |                             | \$3488<br>(86% success)   |   |                        |
| Cost per successful child at end of grade 4 |                             | \$8333<br>(36% success)   |   |                        |
| <b>SAVINGS per teacher</b>                  |                             |   |   |                        |
| Retentions                                  | 4 @ \$5208                  | Dyer's figures assume that all these programs are completely ineffective. |   |                        |
| Chapter 1 children                          | 4 @ \$4715                  |   |   |                        |
| Special education placements                | 2 @ \$9906                  |   |   |                        |

\* depreciated over 4 years

ineffective (Hiebert, 1994) and (b) Reading Recovery is always effective and children never make use of Title I or special education services. Both these assumptions are false. Furthermore, Dyer (1992) calculated that the cost per child was only \$2063. Dyer's figures omit many costs and assume that one full-time-equivalent teacher works with the recommended number of children and that the success

rate is perfect with these children.

Hiebert (1994) and Shanahan & Barr (1995) critiqued Dyer for using hypothetical information and not actual data from the Reading Recovery evaluation system regarding cost and effectiveness. Based on actual effectiveness documented in the Reading Recovery evaluation system, Hiebert and Shanahan and Barr concluded that the cost was much higher

per successful child (\$4625-\$8333). Dyer's figures and the revisions of those cost estimates are summarized below (see Table 1). Neither Hiebert nor Shanahan and Barr obtained figures for all the costs involved, though they noted that these costs include more than teacher salaries. They include the staff development and support for the teacher, the materials the teacher uses, and the set-up of the Reading Recovery teaching area. Shanahan and Barr obtained only some of these additional costs from Reading Recovery sponsors.

A recent California audit (August 6, 1996) from the Joint Legislative Audit Committee found much higher figures for some of the costs than Shanahan and Barr reported from the Reading Recovery sponsors: "The training for teacher leaders costs approximately \$18,300 plus the costs of conferences, travel, and the teacher's salary for the year that they are out of service from their district" (p. 3). The audit also reported that San Bernardino Unified School District reported per pupil costs of \$7000, which included teacher salaries in the overall cost calculation but did "not include the \$112,000 paid to the foundation at CSU San Bernardino for teacher training" (pp. 3-4).

The Wake County Public School System (WCPSS, 1996) gathered their own data and calculated a cost of \$9,211 per successful child:

The average Reading Recovery teacher serves seven students during a year, and, on average, three or four of those students read at a first-grade level by the end of the year. Annually, the cost per student for all students served in Reading Recovery in WCPSS during 1993-94 was approximately \$2,947.50 beyond the regular instructional program. Current evaluation data suggests that by the end of third grade only about two of the students served by a Reading Recovery teacher read at a third-grade level. Thus, the WCPSS has invested approximately \$9,211 for each student who is a long-term success.

Since the 1990-91 and 1991-92 comparison groups of students who did not receive Reading Recovery achieved a comparable success rate on standardized tests in third grade, and since Reading Recovery expenditures in WCPSS do not seem to have been offset by significant savings from a reduction of need for special education, retention, or Chapter 1 assistance, the program does not appear to be cost effective at this time.

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**Proper beginning reading instruction in kindergarten and early first grade is not only more effective and less costly but will substantially minimize the number of students needing individual attention.**

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Taken together, the data indicate that the cost for Reading Recovery (30 hours of instruction for one child) exceeds the national average per pupil expenditure for one full year of schooling.

We found that Reading Recovery works, but not as well as its proponents claim; that its effects largely dissipate over time; and, that it costs about the equivalent of an additional year of schooling for the children who participate—even accounting for savings in other expenditures.

(Personal communication from T. Shanahan to Assemblyman S. Baldwin, June 26, 1995)

The above cost estimates are in terms of cost per pupil. The cost per school is more useful for discussing how funds can be better allocated to meet the goal of making every child a reader. Assuming a K-5 elementary school population of 600 and a first-grade population of 100, a Reading Recovery program might work with 20 children a year. This requires nearly 4 Reading Recovery teachers or 2 full-time-equivalent teachers. (Each Reading Recovery teacher serves a national average of 5.5 children, Hiebert, 1994.) Of these 20 children, only 1 would be reading at grade level in authentic text by the end of the year (Pollock, 1996). The cost of Reading Recovery in this school would exceed \$125,000. (Two teachers cost approximately \$100,000 in today's dollars and training and implementation costs exceed \$25,000).

These Reading Recovery funds could be reallocated to achieve much greater effectiveness. Foorman et al. (in press) found that the expenditures of huge sums on tutorial programs very similar to Reading Recovery is significantly less cost-effective than implementing effective reading instruction in the classroom. Proper beginning reading instruction in kindergarten and early first grade is not only more effective and less costly but will substantially minimize the number of students needing individual attention.



To accomplish this using the same funds, one of the two FTE Reading Recovery positions (2 of 4 half-time Reading Recovery teachers) would be used to reduce class size. For example, if there were 4 first-grade classes of 25, adding one more class would reduce the size to 20. The teacher in the remaining Reading Recovery position would be more effective using research-based instruction for children who have reading difficulty. The remaining \$25,000 could be invested in a school-wide training program to change classroom instruction to the more effective practices evaluated in the Foorman, et al. study (in press). Based on the data from Foorman et al., a school could expect overall achievement levels to increase more than 1 1/2 times by this change alone. Retraining the classroom teachers could be easily accomplished with a one-time investment of \$25,000. Retooling a school to use explicit instruction in phonological skills with systematic phonics combined with decodable text is a much more cost-effective alternative. Not only would the lower 20% benefit, but the whole school would benefit from more effective instruction.

### Summary

- The Reading Recovery data reporting system is flawed.
- The standard for successful completion of Reading Recovery is not equitable.
- Reading Recovery does not raise overall school achievement levels.
- Far fewer students than claimed actually benefit from Reading Recovery.
- Children who are not expected to be successful are removed from the program and from the calculation of the success rate.
- Reading Recovery does not reduce the need for other compensatory reading services.
- Research-based alternative interventions are more effective than Reading Recovery.
- Reading Recovery is extremely expensive and does not save other costs.

### References

- Battelle, Ohio Department of Education. (1995). *Longitudinal Study of Reading Recovery: 1990-91 Through 1993-94*.
- Center for the Future of Teaching and Learning. (1996). A synthesis of research on reading from the National Institute of Child Health and Human Development. [Http://www.ksagroup.org/center](http://www.ksagroup.org/center).
- Center, Y., Wheldall, K., & Freeman, L. (1992). Evaluating the effectiveness of Reading Recovery: A critique. *Educational Psychology*, 12, 263-273.
- Center, Y., Wheldall, K., Freeman, L., Outhred, L., & McNaught, M. (1995). An experimental evaluation

- of Reading Recovery. *Reading Research Quarterly*, 30, 240-263.
- Clay, M. (1993). *Reading recovery, a guidebook for teachers in training*. Portsmouth, NH: Heinemann.
- Clay, M. M. (1979; 1985). The early detection of reading difficulties. Auckland, NZ: Heinemann.
- Clay, M. M., & Cazden, C. B. (1990). A Vygotskian interpretation of Reading Recovery tutoring. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 206-222). Cambridge, UK: Cambridge University Press.
- DeFord, D.E., Estice, R., Fried, M., Lyons, C.E. & Pinnell, G.S. (1993). *The Reading Recovery program: Executive summary 1984-92*. Columbus: The Ohio State University.
- DeFord, D.E., Pinnell, G.S., Lyons, C.A., & Place, A.W. (1990). *The Reading Recovery follow-up study, Vol. 11, 1987-89*. Columbus: Ohio State University.
- Donley, J., Baenen, N., & Hundley, S. (1993). *A study of the long-term effectiveness of the Reading Recovery Program*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.
- Dyer, P. C. (1992). Reading Recovery: A cost-effectiveness and educational outcomes analysis. *Spectrum: Journal of Research in Education*, 10(1), 110-119.
- Fincher, G. E. (1991). *Reading Recovery and Chapter I: A three-year comparative study*. Canton, OH: Canton City Schools.
- Foorman, B., Francis, D., Beeler, T., Winikates, D., & Fletcher, J. (in press). *Early Interventions for Children With Reading Problems: Study Designs and Preliminary Findings*. University of Houston.
- Glynn, T., Crooks, T., Bethune, N., Ballard, K., & Smith, J. (1989). Reading Recovery in context: implementation and outcome. *Educational Psychology*, 12(3 & 4), 249-261.
- Gregory, D., Earl, L., & ODonoghue, M. (1993). A study of Reading Recovery in Scarborough: 1990-1992. Annual Site Report of the Scarborough School District. Ontario: Scarborough School District.
- Groff, P. (1994). Reading Recovery: Educationally sound and cost-effective? *Effective School Practices*, 13(1), 65-69.
- Hiebert, Elfrieda. (1994). Reading Recovery in the United States: What Difference Does it Make to an Age Cohort? *Educational Researcher*, 23(9), 15-25.
- Iversen, S., & Tunmer, W. (1993). Phonological Processing Skills and the Reading Recovery Program. *Journal of Educational Psychology*, 85(1), 112-126.
- National Diffusion Network. (1993). 1992-93 discontinuation data (Research rep.). Columbus: Reading Recovery National Data Evaluation Center.

- Lyon, R., & Chhabra, V. (1996). The current state of science and the future of specific reading disability. *Mental Retardation and Developmental Disabilities Research Reviews*, 1, 1-8.
- Leu, D., DeGroff, L., & Simons, H. (1986). Predictable texts and interactive-compensatory hypotheses: Evaluating individual differences in reading ability, context use, and comprehension. *Journal of Educational Psychology*, 78, 347-352.
- Lyons, C.A., Pinnell, G.S., Short, K., & Young, P. (1986). *The Ohio Reading Recovery Project, Vol 4, Pilot Year 1985-86*. Columbus: The Ohio State University.
- Nicholson, T. (1991). Do children read words better in context or in lists? A classic study revisited. *Journal of Educational Psychology*, 83, 444-450.
- Nicholson, T., Lillas, C., & Rzoska, M. (1988). Have we been misled by miscues? *The Reading Teacher*, 42, 6-10.
- O'Hare, N. (1995, July). What's wrong with reading? *New Zealand Listener*.
- Perfetti, C.A. (1985). *Reading ability*. New York: Oxford University Press.
- Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal*, 90(2), 159-181.
- Pinnell, G.S., & Lyons, C. (1995). Response to Hiebert: What difference does Reading Recovery make? Unpublished manuscript.
- Pinnell, G. S., Lyons, C. A., & DeFord, D. E. (1988). *Reading Recovery: Early intervention for at-risk first graders*. Arlington, VA: Educational Research Service.
- Pinnell, G.S., Lyons, C.A., DeFord, D.E., & Bryk, A.S. (1994). Response to Rasinski. *Reading Research Quarterly*, 30(2), 272-275.
- Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly*, 29(1), 9-38.
- Pollock, J.S. (1994). *Final evaluation report: Reading Recovery program 1995-96*. Columbus, OH: Department of Program Evaluation.
- Pollock, J.S. (1996). *Final evaluation report: Reading Recovery program 1993-94*. Columbus, OH: Department of Program Evaluation.
- Rasinski, T. (1995). On the effects of Reading Recovery: A response to Pinnell, Lyons, DeFord, Bryk, and Seltzer. *Reading Research Quarterly*, 30(2), 264-270.
- Rayner, K., & Pollatsek, A. (1989). *The psychology of reading*. Englewood cliffs, NH: Prentice Hall.
- Schwartz, R., Moore, P., Schmidt, M., Doyle, M. A., Gaffney, J., & Neal, J. (1996). *Executive Summary of Research on Reading Recovery*.
- Shanahan, T. (1987). Review of *The Early Detection of Reading Difficulties*, 3rd ed. *Journal of Reading Behavior*, 19, 117-119.
- Shanahan, T., & Barr, R. (1995). Reading Recovery: An independent evaluation of the effects of an early instructional intervention for at-risk learners. *Reading Research Quarterly*, 30(4), 958-996.
- Smith-Burke, M. T., Jaggar, A., & Ashdown, J. (1993). New York University Reading Recovery project: 1992 follow-up study of second graders (Research rep.). New York: New York University.
- Southern Regional Education Board. (1996). *Getting Elementary Schools Ready for Children: Reading First*.
- Stanovich, K. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly*, 16, 32-71.
- Stanovich, K. (1984). The interactive-compensatory model of reading: A confluence of developmental, experimental, and educational psychology. *Remedial and Special Education*, 5, 11-19.
- Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-407.
- Stanovich, K. (1991). Word recognition: Changing perspectives. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 133-180). San Diego: Academic Press.
- Stanovich, K. (1994). Romance versus reality. *The Reading Teacher*, 47(4), 280-291.
- Stanovich, K., & Stanovich, P. (1995). How research might inform the debate about early reading acquisition. *Journal of Research in Reading*, 18(2), 87-105.
- Stanovich, E., West, R., & Feeman, D. (1981). A longitudinal study of sentence context effects in second-grade children: Tests of an interactive-compensatory model. *Journal of Experimental child Psychology*, 32, 185-199.
- Swartz, S. L. (1992). Cost comparison of selected intervention programs in California. San Bernardino: California State University.
- Swartz, S. L., Shook, R. E., & Hoffman, B. M. (1993). *Reading Recovery in California. 1992-93 site report*. San Bernardino: California State University.
- Swartz, & Klein. (1996). <http://www.sfusd.k12.ca.us/programs/rr/Rroverview>.
- Tunmer, W. (1989). *Does Reading Recovery Work?* Massey University.
- Wake County Public School System. (1995). *Evaluation report: WCPSS Reading Recovery, 1990-94*. Raleigh, NC: author.
- Wasik, B.A., & Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. *Reading Research Quarterly*, 28, 179-200.
- West, R., & Stanovich, K. (1978). Automatic contextual facilitation in readers of three ages. *Child Development*, 49, 717-727.

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# Questions and Conclusions from a Discussion of Reading Recovery<sup>®</sup>

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The effectiveness and cost of Reading Recovery<sup>®</sup> have become a subject for serious examination. School district response to the discussion contained in these excerpts will have a direct effect on California school district Language Arts curriculum expenditures and on the reading ability of California school children.

## Are Gains from Reading Recovery<sup>®</sup> Enduring?

It is vitally important, of course, that for an experimental remedial reading program, such as Reading Recovery<sup>®</sup>, to be adopted and funded for regular, long-term use in schools, it first must demonstrate experimentally that it generates relatively large gains for students involved in it. Such gains are of little if any consequence, however, if they soon fade away, leaving the students who achieved them no better able to read than are students who had no Reading Recovery<sup>®</sup> tutoring. It therefore is essential for Reading Recovery<sup>®</sup> to prove that the initial gains in reading that it produces are lasting in nature.

It is clear that Reading Recovery<sup>®</sup> has failed to meet this test of its effectiveness. This is to say, several disinterested independent critics of Reading Recovery<sup>®</sup> (Center et. al, 1995; Glynn, et al., 1989; Groff, 1994; Ohio Department of Education, 1995; Shanahan & Barr, 1995; Wasik & Slavin, 1993) have pointed out that most of the reading improvement gains brought on by Reading Recovery<sup>®</sup> are temporary; they "wash-out" over time. This finding is underscored by the fact that students released from Reading Recovery<sup>®</sup>, as remediated, often read so poorly that they qualify for inclusion in other remedial reading programs (Groff, 1994).

The most impressive of the studies so far of whether reading gains in Reading Recovery<sup>®</sup> endure or evaporate is the one recently commissioned by the Ohio Department of Education, and conducted by the consulting firm, Battelle, of Columbus, Ohio. The exceptionally well-designed Battelle study (Ohio Department of Education, 1995) surveyed the permanency of Reading Recovery<sup>®</sup> scores

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Several disinterested independent critics of Reading Recovery<sup>®</sup> have pointed out that most of the reading improvement gains brought on by Reading Recovery<sup>®</sup> are temporary; they "wash-out" over time.

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in many Ohio schools over a four-year school period, 1990-1994.

The Battelle Study concluded that there were initial reading gains from Reading Recovery<sup>®</sup>, greater even than those made by students in other remedial programs in use in Ohio schools at the time. "The differences in achievement level (favoring Reading Recovery<sup>®</sup>), however, were not evident in the three subsequent years" of the Reading Recovery<sup>®</sup> students schooling (Ohio Department of Education, 1995, p. 73). The average score advantage of Reading Recovery<sup>®</sup> students was not maintained at the end of the second grade," nor on "tests for the third and fourth grades" (p. 1).

## Is Reading Recovery<sup>®</sup> Cost-Effective?

As Slavin, et al. (1993) convincingly demonstrate, one teacher-one student tutoring, per se, has been proved experimentally to be the most effective instructional arrangement known. This one-to-one tutoring also is the most expensive kind of teaching, of course. School districts thus almost always must sacrifice some other educational services to students in general, omit purchases of educational materials, equipment, supplies, and housing, and/or increase regular teachers' workloads or delay their pay raises, in order to find the money necessary to provide tutoring for selected students.

Any school district or board of trustees contemplating the adoption of Reading Recovery<sup>®</sup> as a tutoring vehicle therefore must look beyond the question whether Reading Recovery<sup>®</sup> actually is the most effective program of its kind. In addition, they

must consider carefully whether the financial cost of adopting Reading Recovery® outweigh its actual contributions toward the remediation of students' reading handicaps.

In this regard, the present analysis of Reading Recovery® so far has suggested that for several reasons this tutoring program is not the most pedagogically-effective remedial reading tutoring program available. If this negative judgment of Reading Recovery® is accurate and convincing, it is double important that school officials inspect carefully the cost-effectiveness of Reading Recovery®.

Those who control whether purchase of Reading Recovery® will be made for use in schools should realize, first, that the promoters of Reading Recovery® typically downgrade its cost, depicting them as very reasonable, and therefore as apt payment for Reading Recovery®'s supposed great successes in overcoming students' reading handicaps. For example, Dyer (1992) sets the teacher salary costs per student of Reading Recovery® at \$2063. By comparison, he maintains, the cost of the federally-funded program, Title 1, is \$4715. Here Dyer wrongly assumes that all Title 1 students need 5 years of remedial reading tutoring. He also conveniently ignores other costs of Reading Recovery®. This relative low cost of Reading Recovery® is claimed by other of its advocates. For example, the cost per student in McAllen, Texas is reported as \$2538 (Salinas, et al., 1993)

In contrast to these figures, are ones more recently gathered in schools in Ohio (Ohio Department of Education, 1995). These schools estimated that the costs of Reading Recovery® are 50% higher than other (unnamed) remedial programs that they used. Earlier on, a study of Reading Recovery® in the Canton, Ohio schools found, however, that "Reading Recovery® (sic) is approximately four times as expensive as Chapter 1" (now called Title 1) over the same period of time—but less effective (Fincher, 1988, p. 20). Fincher noted that the low estimates of the cost of Reading Recovery® by its advocates fail to take into account costs of fringe benefits to Reading Recovery® teachers, materials and supplies used in Reading Recovery®, teacher training, salaries and travel expenses of Reading Recovery® program officials, and other miscellaneous financial outlays.

Hiebert (1994, p. 22) agrees that estimates of the cost of Reading Recovery® by its proponents "represent a deflated figure per student because teacher benefits have been excluded," along with start-up costs of training, and costs of training rooms. These underestimated costs of Reading Recovery® also are based on the dubious assumptions that Reading

Recovery® is successful with all students, that students never require any remedial reading instruction after they exit Reading Recovery®, that each Reading Recovery® tutor serves sixteen students, and that none of the reading handicapped students not given Reading Recovery® ever will attain proficiency in reading, Hiebert (1994) adds. Taking all these ordinarily unreported costs and lack of careful oversight of Reading Recovery® into account, Hiebert (1994, P. 22) places the "cost per successful students (in Reading Recovery®) at \$8333," or \$278 per hour of tutoring.

Shanahan and Barr's (1995) estimate of the costs of Reading Recovery® are significantly lower than that of Hiebert (1994), but higher than those offered by the proponents of Reading Recovery®. Taking into consideration fewer of Reading Recovery®'s normally ignored, but necessary, financial outlays than did Hiebert (1994), Shanahan and Barr put the cost of Reading Recovery® at \$4625 per student. The addition of Reading Recovery® thus doubles the average cost of educating a student, or triples it, if one accepts Hiebert's estimate in this regard.

Another way of deciding the economic practicality of Reading Recovery® is offered by Rasinski (1995). In his view, when investigating whether Reading Recovery® is fiscally feasible, it is necessary, first, to determine how many times larger were the reading gains generated by Reading Recovery® than were the average reading gains made by non-Reading Recovery® students. The reading gains from Reading Recovery® must double or triple (Shanahan/Barr or Hiebert) those of regular classroom instruction if the extra cost that is incurred by Reading Recovery® is to be justified.

Using Rasinski's formula, the reading gains made by students in the Pinnell, et al. (1994) investigation of Reading Recovery® thus appear to be too small to warrant the extra costs of Reading Recovery®. For example, on the two standardized tests given there, the Reading Recovery® reading scores surpassed the "direct instruction skills plan" (DRA) scores by only 9% and 9% respectively. As noted, the DRA is designed for group teaching. We therefore need to know if Reading Recovery® reading gains would double or triple gains made with DRA group teaching.

### **Public Reaction to Reading Recovery®**

Furthermore, it is likely that the high cost of Reading Recovery® creates a public relations problem for the schools. In this sense, it is predictable that people outside the educational establishment who learn of the high price of Reading Recovery®, and the severe contraction, over time, of reading

gains initially obtained with it, will protest that expenditures for Reading Recovery® are not a wise use of the limited school funds that are now available.

This potential for public remonstrance against the adoption of high-cost Reading Recovery® is exemplified in a 1995 letter from Ohio state senator Copper Snyder (chair of his senate's education committee) to the Ohio superintendent of education regarding the Battelle study of Reading Recovery®. As noted above, this study found that significant extra money spent on Reading Recovery® did not result in enduring reading gains for Reading Recov-

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ery® students. "To put it mildly, I am chagrined with findings reported" by the Battelle study, Snyder wrote. To Snyder, "Reading Recovery® is nothing more nor less than a band-aid for the first grade." I thus "am further dismayed to learn that the (Ohio) Department (of Education) apparently concludes Reading Recovery® is okay," of the general public as to the need for Reading Recovery®. Why aren't we doing the (reading instruction) job right to begin?" he asks, suspecting that "something has to be fundamentally and very basically wrong" in the way students ordinarily are taught to read.

The "something" that is "fundamentally and basically wrong" about reading instruction, to which Snyder refers, is the "Whole Language" approach to reading development that has been adopted in his state and even more so in California. The introductory remarks of the present analysis of Reading Recovery® explain why California students now are the least capable readers in the nation, and thus are prime candidates for Reading Recovery®. Here it is noted that more schools in California have made the unfortunately wrong decision to adopt WL than have schools in other states. As a consequence, California students are now the least capable readers in the nation.

It is important, as well, that future reports from local school districts that proclaim the purported successes of Reading Recovery® (e.g., Holmes, 1994) carefully consider beforehand the critiques of Reading Recovery® as made in the present analysis of it, especially those regarding: (a) the evidence that tests used to decide students' entry and exit from Reading Recovery® are not valid nor reliable for that purpose; (b) the empirical invalidity of certain Reading Recovery® practices, ones that are based on WL; (c) the lack of longevity of reading gains generated by Reading Recovery®; and (d) the need for a precise and comprehensive formula for deciding if Reading Recovery® is cost-effective, as compared with other remedial reading tutoring plans, with small group teaching in the regular classroom, or with remedial reading programs that use paraprofessional or volunteer tutors. In short, no longer acceptable at face value are statements from Reading Recovery® promoters that Reading Recovery® "remains cost-effective because of its short-term nature" (Swartz & Klein, 1994, p. 6). This is a far too simplistic view of the cost issue of Reading Recovery®, and therefore no longer can be tolerated.

## Conclusions

The conclusions that may be drawn from the present analysis of the empirical validity of Reading Recovery® can be expressed in a series of *Questions and Answers* about this remedial reading tutoring program:

*Q: Does Reading Recovery® produce gains in reading for reading handicapped first grade students?*

*A: Yes, but only initially. The preliminary advances in reading ability generated by Reading Recovery® for these students soon disappear.*

*Q: Is Reading Recovery® based solidly on the relevant experimental research findings on reading development?*

*A: No. To the contrary, Reading Recovery® is a projection of the empirically unverified "Whole Language" approach to literacy development. The principles and practices of Reading Recovery® are very similar to those of Whole Language. Whole Language has been shown clearly to be a failed instructional innovation.*

*Q: Is Reading Recovery® the best remedial reading tutoring program now available?*

*A: Probably not. Theoretically, Reading Recovery® is inferior to competing tutoring programs since they conform more to the experimental research findings than does Reading Recovery®. Empirical*

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**The “something” that is “fundamentally and basically wrong” about reading instruction, to which Snyder refers, is the “Whole Language” approach to reading development that has been adopted in his state and even more so in California.**

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evidence in this regard, gained from disinterested, independent studies of Reading Recovery® versus competing tutoring programs, is badly needed if this question is to be answered satisfactorily.

*Q: What are the major reasons why studies of Reading Recovery® by its advocates always find that Reading Recovery® is highly effective?*

A: These investigations typically do not compare Reading Recovery® with competing tutoring programs. In action, these studies often have been designed and implemented, either expressly or incidentally, so that they result in favorable outcomes for Reading Recovery®. Of note here: when disinterested researchers study Reading Recovery®, it is not found to be exceptionally effective.

*Q: How closely do Reading Recovery® tutors follow the prescriptions for its conduct laid down by Clay (1993b)?*

A: This issue has not been investigated so far. Thus, it may be that tutors in Reading Recovery® programs that produce exceptional reading gains do not carefully follow Clay’s directions in many respects. For example, these tutors may spend considerably more time on explicit instruction of word recognition skills than Clay recommends should be done. There thus may be some useful informal corrections made of the official Reading Recovery® procedures by its practitioners.

*Q: Is Reading Recovery® the most cost-effective of all remedial reading tutoring programs?*

A: Clearly not, since some competing tutoring programs use paraprofessionals or volunteers as tutors, and have a greater chance for success because they align their practices more closely to what the experimental research reveals about reading development than does Reading Recovery®. The fact that initial reading gains generated by Reading Recovery® soon fade away also negatively reflects on its costs-to-results ration.

*Q: Has Reading Recovery® become a commercial product?*

A: Some Reading Recovery® proponents claim it is not (Swartz & Klein, 1994). However, the fact that the name, *Reading Recovery®*, now is trademarked signifies that it is considered a marketable item. Clay has profited from the increasingly large sales of her books of Reading Recovery®. Centers that charge fees for training Reading Recovery® tutors have grown increasingly numerous as more and more school districts have been sold on the idea they need to adopt Reading Recovery®. By 1992, there were such commercial enterprises in 38 states (Shanahan & Barr, 1995). As well, Reading Recovery® is advertised in much the same way common consumer products are. That is, its advertisements stress its supposed advantages, while conveniently leaving undisclosed its shortcomings.

*Q: Is Reading Recovery® the best way to reverse the current decline in students’ reading ability?*

A: No remedial educational program is preferable to initial and regular teaching of reading that is based on pertinent empirical evidence, i.e., instruction that has the best chance to be effective. Thus, if school reading programs conform to the findings of experimental research on reading development, there would be much less need for Reading Recovery®, or for that matter, any other special education services.

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**More schools in California have made the unfortunately wrong decision to adopt WL than have schools in other states. As a consequence, California students are now the least capable readers in the nation.**

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*Q: Is Reading Recovery® in its present form, as prescribed by Clay (1993b), the most desirable one?*

A: No. It is clear that Reading Recovery® needs to modify the practices that Clay invented for it so that Reading Recovery® is in greater conformity with what the experimental research says about beginning reading development. However, many Reading Recovery® advocates likely will strongly resist this modification of Reading Recovery®. In this regard, they declare it their duty “to protect the integrity of the (Reading Recovery®) program” (Swartz & Klein, 1994, p. 6) from school reform.

Q: Should school boards vote to purchase Reading Recovery® purely on the basis of recommendations of school officials to do so?

A: At this point in time, only by putting blind trust in these recommendations, and by ignoring the evidence of Reading Recovery®'s pedagogical weakness, and its relative high costs, can school boards justify making this decision to adopt Reading Recovery®. School boards would act more wisely if they made sure, first, that the initial, regular teaching of reading in their schools closely conformed to the relevant empirical findings. They then should search out less expensive, more empirically relevant tutoring programs, than Reading Recovery® is, for students who make less than normal progress in reading.

### References

- Center, Y., et al. (1995). An experimental evaluation of Reading Recovery. *Reading Research Quarterly*, 30, 240-263.
- Dyer, P.C. (1992). Reading Recovery®: A cost-effective and educational outcomes analysis. *ERS Spectrum*, 10 (1), 10-19.
- Fincher, G.E. (1988). *Reading Recovery® and Chapter 1: A three-year comparative study*. Canton, OH: Canton, Ohio City Schools.
- Glynn, T., et al. (1989). *Reading Recovery® in context*. Wellington, New Zealand: New Zealand Department of Education.
- Groff, P. (1994). Reading Recovery®: Educationally sound and cost-effective? *Effective School Practices*, 13 (1), 65-69.
- Hiebert, E.H. (1994). Reading Recovery® in the United States: What difference does it make to an age cohort? *Educational Researcher*, 23 (9), 15-25.
- Holmes, J. (1994). *Reading Recovery® site report*, San Diego, CA: San Diego County Consortium. San Diego County Office of Education.
- Ohio Department of Education (1995). *Longitudinal study of Reading Recovery® 1990-91 through 1993-4*, Columbus, OH: Ohio Department of Education.
- Pinnell, G.S., et al. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly*, 29, 8-39.
- Rasinski, T. (1995). On the effects of Reading Recovery®. *Reading Research Quarterly*, 30, 264-270.
- Salinas, A., et al. (1993). *Reading Recovery® 1992-93 evaluation report*, McAllen, TX: McAllen Independent School District.
- Shanahan, T. & Barr, R. (1995). Reading Recovery®: An independent evaluation of the effects of an early instructional intervention for at-risk learners. *Reading Research Quarterly*, 30 (4) 958-996.
- Slavin, R. E., et al. (1993). *Preventing early school failure: Research, policy and practice*. Boston, MA: Allyn and Bacon.
- Snyder, C. (September 22, 1995). Letter to Dr. John Goff, Superintendent, Ohio Department of Education, Columbus, Ohio.
- Swartz, S.L. & Klein, A.F. (1994). Reading Recovery®: An overview. *Literacy, Teaching and Learning*, 1 (1), 3-7.
- Wasik, B.S. & Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. *Reading Research Quarterly*, 28, 179-200.

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(Darlene Beeman)

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# Evaluation Report:

## WCPSS Reading Recovery, 1990-1994

Wake County Public School System, Raleigh, North Carolina

### Report Summary

Reading Recovery (Reading Recovery) is an early intervention program which provides intensive one-on-one services for first-grade students who experience difficulty learning to read. Reading Recovery teachers provide daily individualized lessons for 30 minutes until the children are able to perform within the average range for their first-grade peers; a full program is generally considered 60 lessons, although sometimes the number of lessons required will vary depending on students' progress. The program's major short-term goal is to help the lowest-achieving first graders become independent readers and writers. The program's major long-term goal is to lessen the need for subsequent special help through such means as retention special education services, Chapter 1, or other programs.

### Overall Results Summary

Reading Recovery has not been able to completely meet its major short- and long-term goals in Wake County Public School System (WCPSS). Results indicate that:

- About half of all Reading Recovery students have successfully reached first-grade reading levels (two thirds of those receiving a full program), but success rates have declined across years (especially in 1993-94).
- Only one third of the 1990-91 and 1991-92 Reading Recovery students who successfully reached first-grade reading level scored at grade level as third graders on the End-of-Grade (EOG) Reading test, about the same percent as the comparison groups who received no Reading Recovery services.
- No differences were found in needs for retention, special education, or Chapter 1 two years later for 1990-91 Reading Recovery and control students. Data from the 1990-91 and 1991-92 Reading Recovery and comparison groups suggests some savings the first year after service.

- National and local cost data suggests that Reading Recovery is very expensive relative to benefits seen.

Thus, it appears Reading Recovery alone, as currently implemented, is not enough to keep many WCPSS low achievers reading at grade level. Of course, these analyses do not address the possibility that Reading Recovery might have benefits that are not apparent until high school and beyond, as found for some pre-kindergarten programs.

Results have been organized in this report around four basic policy questions. A summary for each question follows, with more detail provided in the full report.

*Question 1. To what extent does Reading Recovery bring first graders who are having difficulty with reading up to grade level?*

About half (372 or 48%) of the 772 WCPSS students served by Reading Recovery in the last three years have successfully left the program reading at the first-grade level. Of those who received a full program, 67% were successful by this criteria. Over one fourth of the students served by Reading Recovery did not receive a full program.

Reading Recovery's short-term success in WCPSS was consistent with national and state results in 1990-91, 1991-92, and 1992-93 (in terms of the percentage of students who finish the program reading at grade level), but dipped considerably below nationally reported rates in 1993-94. Success rates have declined over the four years Reading Recovery has been in WCPSS.

Reading Recovery students who received full services in 1990-91 were more likely to reach average first-grade reading levels by the end of the first grade than a control group of comparable students.

*Question 2. Does Reading Recovery impact students' need for further special assistance after first grade?*

The evidence currently available indicates Reading Recovery in WCPSS may have some positive



impact on students' need for retention or Chapter 1 reading services in grade 2, but no impact by grade 3. Further one- and two-year follow-up studies are needed before firm conclusions can be drawn on cost savings. The evidence thus far does suggest Reading Recovery alone is not enough for many students. At the student level, we found that:

- Reading Recovery students served in WCPSS in 1990-91, compared to a control group, were just as likely to be retained, placed in special education, or served by Chapter 1 in reading two years later. Results the year after service showed some inconsistent benefits for Reading Recovery over comparison groups (with 1990-91 cohort less likely to need Chapter 1 and the 1991-92 cohort less likely to be retained).
- About half of the Reading Recovery students served in 1990-91, 1991-92, and 1992-93 have needed further assistance through special education (Learning Disabled category), Chapter 1, or retention. Among those who received a full program of services, those who were successful during the program were less likely to need further help than those who were not successful (28-34% of each successful cohort versus 55-79% of each not successful cohort).
- The percentage of Reading Recovery students who needed further assistance did not decline for later cohorts as Reading Recovery and school staff became more experienced with the program. At the school level, first-grade retention rates have declined in WCPSS in both Reading Recovery and non-Reading Recovery schools. Reading Recovery may have been a contributing factor in reducing retention rates in Reading Recovery schools.

**Question 3.** *Do students who are successful in Reading Recovery stay at grade level in reading after first grade?*

Only about one third of the 1990-91 and 1991-92 Reading Recovery students showed grade-level proficiency in third grade on the EOG Reading test. Successful Reading Recovery students did not perform significantly better than those who were less successful, and Reading Recovery students overall did not perform better than comparison students (who did not participate in Reading Recovery).

**Question 4.** *Is Reading Recovery a cost-effective way to help our students who have the most difficulty learning to read succeed in school?*

An average Reading Recovery teacher serves seven students during a year, and, on average, three or four of those students read at a first-grade level by the end of the year. Annually, the cost per students for all students served in Reading Recovery in WCPSS during 1993-94 was approximately \$2947.50 beyond the regular instructional program. The cost per successful student was \$6,000 beyond the regular instructional program. Current evaluation data suggests that by the end of third grade only about two of the students served by a Reading Recovery teacher read at third-grade level. Thus, the WCPSS has invested approximately \$9,211 for each student who is a long-term success.

Since the 1990-91 and 1991-92 comparison groups of students who did not receive Reading Recovery achieved a comparable success rate on standardized tests in third grade, and since Reading Recovery expenditures in WCPSS do not seem to have been offset by significant savings from a reduction of need for special education, retention, or Chapter 1 assistance, the program does not appear to be cost effective at this time.

## Recommendations

Early intervention programs like Reading Recovery continue to hold promise, but the WCPSS program has not fully met its potential to date. Large-scale expansion of the program does not seem warranted at this time. In fact, based on national research, rapid expansion could diminish the chances for sound implementation and success. We recommend that the Reading Recovery program be strengthened to optimize the chances for short- and long-term success. Whatever changes are made should be implemented in a way to allow a systematic study of their effects. Some of the critical issues raised by these research results are the depth of coverage in each school, the number of partial programs, possible follow-up with Reading Recovery "graduates," and variations or alternatives to Reading Recovery. A brief discussion of each issue follows.

The breadth and depth of Reading Recovery coverage should be explored once again. When the program began, the decision was made to cover as many schools as possible, but not with great depth. In most cases, one teacher was provided per school. That decision meant that Reading Recovery has not come close to the 15-20% coverage recommended by

the originators of the program, and that the teachers have worked with more lower-achieving students than is true in districts with different policies. Providing more teachers at fewer schools would allow a better test of the true potential for RR's success in WCPSS.

The number of students receiving partial programs must be kept at a minimum, since they consume program resources but have a lower chance for success. The number of students with partial service could be reduced in a variety of ways. Some options to consider include finding ways to complete programs, perhaps through two lessons per day, or summer lessons teachers miss because of other duties.

Long-term results suggest some continuing support to former Reading Recovery students (through classroom teachers, tutors, or Chapter 1) might be necessary to sustain reading at grade level. It is essential that the classroom teachers continue to build on the success students have in Reading Recovery: Reading Recovery teachers may be able provide expanded training to primary-level teachers on how to accomplish this. In addition, periodic checks

of Reading Recovery graduate's skills and "booster" lessons as necessary are worth consideration.

While Reading Recovery has been successful with some children, other alternatives or variations may be more cost effective or helpful to students long-term. New Title 1 guidelines for next year allows schools more flexibility in choosing ways to serve students. For example, Early Reading groups, a variation of Reading Recovery using small groups, have been used thus far in WCPSS as a companion program (for those on a waiting list) and not an alternative to Reading Recovery. Some schools may opt to use this less expensive group variation instead of Reading Recovery, or to try Reading Recovery in an after-school model (to avoid loss of instructional time for students). Alternatives will be included in a new publication coming from E&R called *What Works with Low Achievers? A Resource Guide*. If schools opt to implement a variation or alternative to Reading Recovery, effects could be systematically compared to Reading Recovery schools (especially those with at least 15% coverage) and no intervention at grade 1.

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# Thirty Years of NICHD Research: What We Now Know About How Children Learn to Read

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*The Center for the Future of Teaching and Learning is a new, private, nonprofit organization dedicated to turning the teaching practices that are known to work into practices that are widely used. As a society, we have set increasingly high standards for what all California students should know and be able to do. We cannot expect students to reach those goals, however, without well-prepared, creative and knowledgeable teachers. But the vast amount of best teaching practice information gathered over the years remains scattered and locked away in isolated classrooms, research institutes and individual education support organizations. Until now, there was no effective means of spreading that knowledge in meaningful, effective ways. As its name implies, the Center is the one place where teachers, students, parents, union leaders, principals, superintendents, state officials, educators, researchers, university officials, policymakers and funders can turn for best-practice information and collaborative research opportunities in professional development.*

## A Note about the NICHD Research Program

The National Institute of Child Health and Human Development (NICHD) educational research program, initiated 1965, began to focus more on reading difficulties as it became clear how extensive the reading problem was in the general population. The 1985 Health Research Extension Act resulted in a new charge to the NICHD to improve the quality of reading research by conducting long-term, prospective, longitudinal, and multidisciplinary research. Reid Lyon led the new charge by closely coordinating the work of over 100 researchers in medicine, psychology, and education in approximately 14 different research centers. (Numbers vary from year to year.)

A major problem with reading research in the past was that findings often did not replicate. One researcher would get one result, another researcher would get the opposite result. Lyon and colleagues identified that the key problem in obtaining replicability was that researchers were studying different samples of children. Lyon established detailed sampling requirements for the research and increased scientific rigor in other areas. Consequently, the NICHD research program has produced a growing body of highly replicable findings in the area of early reading acquisition and reading difficulties that have been reported in over 2,000 refereed journal articles since 1965.

## How the NICHD Research Program is Different

To appreciate fully the significance of the NICHD findings it helps to understand the level of scientific rigor used to guide the formation of conclusions from the research. Reid Lyon coordinates the parallel investigation of similar questions across several centers. Under Lyon's leadership, the researchers determine that the questions have been answered only when the findings replicate across researchers and settings. Findings with a high degree of replicability are finally considered incontrovertible findings and then form the basis for additional research questions. Funding is awarded the research centers through a competitive peer review process. A panel of researchers who are not competing for the research funds award the funds after evaluating competing proposals according to specific criteria. Each research study within the NICHD network must follow the most rigorous scientific procedures.

**True scientific model.** The NICHD studies do not embrace any *a priori* theory, but test all theories against one another at different points in time. In a true scientific paradigm, theories are tested by doing everything to try to prove the theory incorrect. This contrasts with the usual nature of research in education, where untested hypotheses are often presented as proved theories before any testing has occurred.

**Long-term duration.** The average length of a study has been 8 years, ranging in length from 3 years to 31 years. In these longitudinal studies, the growth of children from preschool through adulthood has been evaluated. Currently, several large-scale, 5-year longitudinal treatment intervention studies are underway. This longer-term design allows evaluation of the effects of different instructional variables on later reading performance.

**Sampling procedures.** The sampling procedures ensure that all subgroups in the population (all ethnic groups, a full range of IQ levels, and so on) are included in sufficient numbers to provide a window to the population as a whole and provide information regarding the relationship of reading disabilities to other variability in individuals such as IQ. To evaluate the relationship between IQ and reading disabilities, for example, the research subjects must proportionately sample different IQ bands. Most studies involve around 200 subjects representing variation within specified dimensions. Children who do not speak English have been excluded from the NICHD research samples to this point. After basic reading instruction issues have been resolved for teaching children with some knowledge of English, including bilingual children, the research questions will turn to treatment for children who do not know English and are beginning to learn it as a second language.

**Researcher bias.** Researcher bias is reduced by the sheer number of people involved in the NICHD program. For example, at only one NICHD-funded research center, the one at Yale University, the following researchers are involved: Jack Fletcher, David Francis, Rafael Kloorman, John Gore, John Halahan, Robert Constable, Leonard Katz, Barbara Foorman, Bonita Blachman, Dorothy Aram, Alvin Liberman, Ken Pugh, Michael Studdert-Kennedy, Donald Shankweiler, Karla Stuebing, Keith Stanovich, Linda Siegel, and Louisa Moats. In addition, researchers at the different NICHD centers communicate frequently regarding their findings, checking each other's data and testing alternative explanations with additional studies.

**Contrast with other educational research.** The NICHD research program differs from much of the earlier research in its scientific rigor. Table 1 helps illustrate the contrast by summarizing several studies that reported conclusions that conflict with those of the NICHD. The studies in Table 1 are laudable for attempting to evaluate competing theories and were sometimes even two years in duration, quite long as educational studies go. Yet the studies are still too short in duration to evaluate the effects of the different treatments on the children's actual

ability to read with joy and understanding. In nearly all of the studies in Table 1 the children never progressed far enough in their reading to use a measure of independent reading comprehension to evaluate their learning. The important question of how different approaches to beginning reading instruction ultimately impact authentic reading remains unanswered in these studies.

Many of the measures used to evaluate the children's learning had no established validity as predictors of reading comprehension. For example, children who used multiple cueing systems or who said they valued understanding more than getting the words right, were given higher scores in many of the studies in Table 1. Whether or not this performance would correlate with later reading performance was not established at the time of the research.

With the NICHD research we now know that the values given the responses on these measures should have been reversed. What was considered desirable performance on miscue analyses actually indicates a poor comprehender, rather than a good comprehender. Children who are poor readers make greater use of two of the three cueing systems, syntax and semantics (context), than good readers. Good readers make greater use of the graphophonic cueing system, as indicated by the fact that they read fluently and accurately without rereading. Readers who get words right are better comprehenders than readers who guess using context to figure out words. Most likely the children who scored highest on these measures would become the poorest readers, based on NICHD studies of good and poor readers.

Even when the skills measured do predict better reading later, such as knowing the names of the letters, teaching children these skills does not necessarily guarantee that these children will be better readers later on. Though many of the studies in Table 1 were over two years duration, the time frame was still too short to see the nature of the impact of the instruction on reading comprehension.

In contrast, the NICHD longitudinal treatment studies now in progress are five years in duration and have already used reading comprehension measures to evaluate instructional variables in the second year of the studies. In addition, the sample sizes are much larger in the NICHD research studies. For example, the kindergarten study by Foorman and her colleagues (in press) involved 260 kindergarten children. Their first- and second-grade study in eight Title I schools involved 375 subjects. Their special education study of children in the lower 25% involved 113 children with reading disabilities. The study of children in the lower 10% at the Florida

**Table 1. Research Supporting Conclusions that Conflict with the NICHD Research Findings**

| Date | Researchers              | Population sampled                      | N in whole language group          | N in skills-based group           | Duration | Reading comprehension measure included?                        |
|------|--------------------------|---|------------------------------------|-----------------------------------|----------|--|
| 1985 | Ribowsky                 | 2 K classes in parochial school         | 26                                 | 27                                | 1 yr     | No   |
| 1989 | Kasten, Clark, & Nations | 2 Preschool & 2 K classes               | 54                                 | 66                                | 1 yr     | No   |
| 1990 | Stice & Bertrand         | At-risk 1st & 2nd graders in 10 classes | 25 (5 from each class)             | 25 (5 from each class)            | 2 yrs    | The SAT was administered, but no significant difference found. |
| 1991 | Freppon                  | 4 1st grade classes, wealthy, white     | 12                                 | 12                                | 4 mths   | No   |
| 1993 | McIntyre                 | 1st grade, varied                       | 1 (also 1 in Reading Recovery)     | 1                                 | 2 yrs    | No   |
| 1994 | McIntyre & Freppon       | low SES groups                          | 3                                  | 3                                 | 2 yrs    | No   |
| 1995 | Dahl & Freppon           | 4 classes                               | 12 focal Ss<br>21 on some measures | 7 focal Ss<br>12 on some measures | 8 mths   | No   |

\*N= number of subjects (Ss) in each treatment group.

Treatment Center involved 180 children (Torgesen et al., in press). The larger samples in the NICHD research included a full range of IQ levels, ethnic groups, and included lower income children. As Table 1 shows, the largest study reporting contradictory conclusions included only 100 subjects. Most of the studies involved much smaller samples.

### Developing a New Understanding of Reading Difficulties

The use of the general term "learning disabilities" in research practice seems to have hindered our ultimate understanding of the causes, developmental courses, and outcomes of the specific types of difficulties subsumed within the LD category. Lyon (1995a) and Stanovich (1993) argue that the term learning disability is too broad to be of any scientific or clinical value. Instead, the general term learning disability, for research purposes, should be replaced with a specific definition of each type of learning disability (e.g., a learning disability in basic reading skills, a learning disability in mathematics calcula-

tion, a learning disability in written expression, and so on).

Much of the recent NICHD research has focused on identifying the nature of reading disabilities and the causes. Using modern neuroimaging technology, medical researchers have identified a unique signature on the brain scans of persons with reading problems. These unique brain scans seem to reflect an inability to work with phonemes in the language. This lack of phonemic awareness seems to be a major obstacle to reading acquisition. Children who are not phonemically aware are not able to segment words and syllables into phonemes. Consequently, they do not develop the ability to decode single words accurately and fluently, an inability that is the distinguishing characteristic of persons with reading difficulties.

About 40% of the population have reading problems severe enough to hinder their enjoyment of reading. These problems are generally not developmental and do not diminish over time, but persist into adulthood without appropriate intervention.

Because the percentage is so large, an arbitrary cut-off point of 20% was selected for the purpose of labelling children as disabled in basic reading skills. The difference between a child who has a learning disability in reading and a child who is simply a poor reader is only a difference in the severity of the problem.

The most reliable indicator of a reading problem is an inability to decode single words. Lyon (1994, 1995a) suggests that the best way to determine if this inability is "unexpected" is to compare the performance of a child with that of other children his or her age and / or compare reading ability to academic performance in other domains (e.g., listening comprehension, verbal expression, mathematics, written expression). The definition suggests that traditional methods for identifying a reading disability, such as looking for an IQ-achievement discrepancy, are not as reliable (Lyon, 1994; Lyon, 1995a).

Phonological processing is the primary ability area where children with reading difficulties differ from other children. It does not seem to matter whether the children have an IQ-achievement discrepancy in reading or not. Phonological processing encompasses at least three different components. Each component and a sample assessment are described in Table 2. Of these three major phonological processing skills, phonological awareness appears to be the most prevalent linguistic deficit in disabled readers.

### Research on Treatment for Reading Difficulties

#### What is Developmentally Appropriate?

Treatment intervention research has shown that appropriate early direct instruction seems to be the best medicine for reading problems. Reading is not developmental or natural, but is learned. Reading disabilities reflect a persistent deficit, rather than a

developmental lag in linguistic (phonological) skills and basic reading skills. Children who fall behind at an early age (K and grade 1) fall further and further behind over time. Longitudinal studies show that of the children who are diagnosed as reading disabled in third grade, 74% remain disabled in ninth grade (Fletcher, et al., 1994; Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992; Stanovich, 1986; Stanovich & Siegel, 1994). Adults with reading problems exhibit the same characteristics that are exhibited by children with reading problems.

These findings contradict the prevalent notion that children will begin to learn to read when they are "ready." *The concept "developmentally appropriate" should not suggest delaying intervention, but using appropriate instructional strategies at an early age—especially in kindergarten.* Although we now have the ability to identify children who are at-risk for reading failure, and we now understand some of the instructional conditions that must be considered for teaching, the majority of reading disabilities are not identified until the third grade.

#### Early Identification and Treatment

The best predictor in K or 1<sup>st</sup> grade of a future reading disability in grade 3 is a combination of performance on measures of phonemic awareness, rapid naming of letters, numbers, and objects, and print awareness. Phonemic awareness is the ability to segment words and syllables into constituent sound units, or phonemes. Converging evidence from all the research centers show that deficits in phonemic awareness reflect the core deficit in reading disabilities. These deficits are characterized by difficulties in segmenting syllables and words into constituent sound units called phonemes—in short, there is a difficulty in turning spelling into sounds.

Lack of phonemic awareness seems to be a major obstacle for learning to read (Vellutino & Scanlon,

**Table 2. Three Important Components of Phonological Processing and Sample Assessments**

| Component Skill   | Assessment                                     |
|---|--|
| Phonological awareness                                    | E.g., say 'cat' without the /t/ sound.         |
| Phonological recoding in lexical access<br>(Rapid naming) | Name objects, letters, colors quickly.         |
| Phonological recoding in working memory                   | Repeat sentences, words, or digits accurately. |

1987a; Wagner & Torgeson, 1987). This is true for any language, even Chinese. About 2 in 5 children have some level of difficulty with phonemic awareness. For about 1 in 5 children phonemic awareness does not develop or improve over time. These children never catch up but fall further and further behind in reading and in all academic subjects (Fletcher, et al., 1994; Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992; Stanovich, 1986; Stanovich & Siegel, 1994).

Instruction using the following types of phonemic awareness tasks has had a positive effect on reading acquisition and spelling for nonreaders: rhyming, auditorily discriminating sounds that are different, blending spoken sounds into words, word-to-word matching, isolating sounds in words, counting phonemes, segmenting spoken words into sounds, deleting sounds from words (Ball & Blachman, 1991; Byrne & Fielding-Barnsley, 1990; Cunningham, 1990; Foorman, Francis, Beeler, Winikates, & Fletcher, in press; Lie, 1991; Lundberg, Frost, & Petersen, 1988; Vellutino & Scanlon, 1987b; Yopp, 1988).

Explicit instruction in how segmentation and blending are involved in the reading process was superior to instruction that did not explicitly teach the children to apply phonemic awareness to reading (Cunningham, 1990). Kindergarten children with explicit instruction in phonemic awareness did better than a group of first graders who had no instruction, indicating that this crucial preskill for reading can be taught at least by age 5 and is not developmental (Cunningham, 1990).

In a study by Ball and Blachman (1991), 7 weeks of explicit instruction in phonemic awareness combined with explicit instruction in sound-spelling correspondences for kindergarten children was more powerful than instruction in sound-spelling correspondences alone and more powerful than language activities in improving reading skills.

In a study by Foorman, Francis, Beery, Winikates, & Fletcher (in press), 260 children were randomly assigned to a revised kindergarten curriculum ( $n=80$ ) and a standard curriculum ( $n=160$ ) consisting of developmentally appropriate practices described by the state of Texas' essential elements for kindergarten. The revised curriculum sought to prevent reading disabilities by teaching phonemic awareness for 15 minutes a day using the Lundberg, Frost, and Petersen (1988) curriculum from Sweden and Denmark. Children in the revised curriculum made significant gains in phonemic awareness over the year. Foorman et al. found that the greatest gains occurred when the explicit instruction moved into teaching the sound-spelling relationships concur-

rently with the instruction in phonemic awareness.

### Explicit, Systematic Instruction in Sound-spelling Correspondences

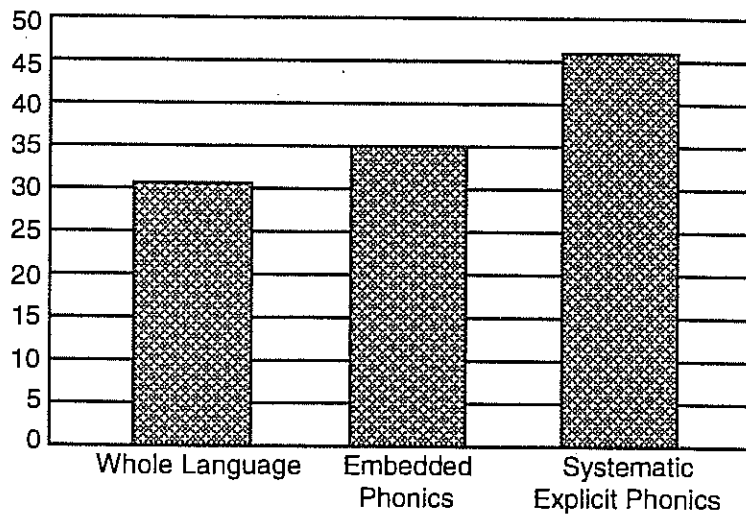
Phonemic awareness alone is not sufficient. Explicit, systematic instruction in common sound-spelling correspondences is also necessary for many children (Adams, 1988; Ball & Blachman, 1991; Byrne & Fielding-Barnsley, 1990; Foorman et al., in press; Mann, 1993; Rack, Snowling, & Olson, 1992; Snowling, 1991; Spector, 1995; Stanovich, 1986; Torgesen et al., in press; Vellutino, 1991; Vellutino & Scanlon, 1987a). Foorman, Francis, Novy, & Liberman (1991) found that more intensive instruction in sound-spelling relationships during reading (45 minutes per day) was more effective than less daily instruction in sound-spelling relationships (sound-spelling instruction occurring only during spelling and not during reading).

Instruction in specific sound-spelling relationships was more effective than a strategy for using analogous word parts on transfer to new words and on standardized reading measures (Lovett, Borden, DeLuca, Lacerenza, Benson, & Brackstone, 1994). Torgesen et al. (in press) also found that explicitly teaching the sound-spelling relationships was superior to teaching explicitly using word families and word analogies and superior to an implicit approach.

Foorman, Francis, Beery, Winikates, and Fletcher (in press) found that explicit, systematic instruction in sound-spelling relationships in the classroom was more effective in reducing reading disabilities than a print-rich environment characterized by interesting stories, even with children who had benefited from phonemic awareness instruction in kindergarten.

[Explicit, systematic instruction in sound-spelling relationships] brought economically disadvantaged, low-achieving first and second graders close to the national average in reading on the Woodcock-Johnson-R, whereas whole language instruction placed these [Title] 1 students near the 25th percentile. Children scoring below the 25th percentile are often identified as reading disabled under traditional diagnostic criteria. These results suggest that [explicit, systematic instruction] in sound-spelling patterns in first and second grade classrooms can prevent reading difficulties in a population of children at-risk of reading failure.

(Foorman et al., in press)



Foorman, Francis, Winikates, and Fletcher (in press)

Figure 1. Percentile scores on Woodcock-Johnson Broad Measure of Reading Comprehension

Figure 1 graphically displays the effects on reading comprehension for the three treatments Foorman et al. compared. The whole language treatment offered children a print-rich environment with interesting stories. The embedded phonics treatment included a more structured approach to phonics in a print-rich environment. The systematic, explicit phonics approach included phonemic awareness instruction, explicit instruction in sound-spelling relationships, and extensive practice in decodable text. Details of the explicit, systematic approach are described in the next section.

Foorman et al. (in press) also found that changing instruction from whole language to explicit, systematic phonics at the classroom level was more effective in reducing the occurrence of reading problems than any of three types of one-on-one tutorial programs that were evaluated. Foorman and her colleagues concluded that in order to avoid reading failure, the focus should be on prevention, not intervention.

It was the classroom curriculum effect, not the tutorial method effect that was significant. The tutorial effect was not particularly strong, given the weak association between growth in word reading and number of days in tutorial. But at least the tutorial may have kept children from falling further behind in read-

ing. These curriculum effects have important implications for urban school districts with large numbers of students at risk for reading failure. The morbidity of reading failure and subsequent placement in special education can possibly be reduced with explicit, systematic phonics in the alphabetic code during first grade. (p. 16)

#### Prediction From Context is not a Useful Strategy for Word Recognition

Research quite clearly shows that overemphasizing prediction from context for word recognition can be counterproductive, possibly delaying reading acquisition. Stanovich and Stanovich (1995) recently summarized the research findings regarding the predictability of authentic text:

An emphasis on the role of contextual guessing actually represents a classic case of mistaken analogy in science and has been recognized as such for over a decade....It is often incorrectly assumed that predicting upcoming words in sentences is a relatively easy and highly accurate activity. Actually, many different empirical studies have indicated that naturalistic text is not that predictable. Alford (1980) found that for a set of moderately long expository passages of



text, subjects needed an average of more than four guesses to correctly anticipate upcoming words in the passage (the method of scoring actually makes this a considerable underestimate). Across a variety of subject populations and texts, a reader's probability of predicting the next word in a passage is usually between .20 and .35 (Aborn, Rubenstein, & Sterling, 1959; Gough, 1983; Miller & Coleman, 1967; Perfetti, Goldman, & Hogaboam, 1979; Rubenstein & Aborn, 1958). Indeed, as Gough (1983) has shown, the figure is highest for function words, and is often quite low for the very words in the passage that carry the most information content. (p. 90)

Stanovich and Stanovich (1995) also summarize the findings regarding the role of context in reading acquisition. Of the three cueing systems frequently mentioned in reading (semantic, syntactic, and graphophonemic cues), the semantic and syntactic cueing systems seem to play a minor role. Recent eye movement research indicates that good readers do not sample the text and predict to recognize words efficiently, but rather see every single letter on the page.

The key error of the whole language movement is the assumption that contextual dependency is always associated with good reading. In fact, the word recognition skills of the good reader are so rapid, automatic, and efficient that the skilled reader need not rely on contextual information. In fact, it is poor readers who guess from context—out of necessity because their decoding skills are so weak. (p. 92)

In the NICHD intervention studies (Foorman et al., in press; Torgesen et al., in press) teaching children to use context and prediction as strategies for word recognition resulted in greater numbers of reading disabilities than instruction that taught children to use their sound-spelling knowledge as the primary strategy for word recognition.

### Major Implications for Early Reading Instruction

Below are the key principles of effective reading instruction identified in the research along with concrete examples of what these principles mean. These examples are taken directly from the research studies. The research findings indicate that to prevent reading problems classroom teachers should do the following:

#### 1. Begin teaching phonemic awareness directly at an early age (kindergarten).

Children who are able to recognize individual sounds in words are phonemically aware. Phonemic awareness can be taught with listening and oral reproduction tasks similar to those listed below. When concurrent instruction in sound-spelling relationships occurs, growth in the development of phonemic awareness seems to accelerate. Teachers should initiate instruction in phonemic awareness before beginning instruction in sound-spelling relationships and continue phonemic awareness activities while teaching the sound-spelling relationships.

There is little correlation between developmental stages and phonemic awareness. Every school child is ready for some phonemic instruction. In fact, if the children who fall behind do not begin receiving explicit teacher-initiated instruction, they are very likely to continue falling further and further behind. Phonemic awareness and other important reading skills are learned and do not develop naturally. The earliest direct interventions have been initiated in kindergarten with very positive results. How preschoolers respond to instruction is a question currently under investigation.

#### Examples of Phonemic Awareness Tasks

- Phoneme deletion: What word would be left if the /k/ sound were taken away from cat?
- Word to word matching: Do *pen* and *pipe* begin with the same sound?
- Blending: What word would we have if you put these sounds together: /s/, /a/, /t/?
- Sound isolation: What is the first sound in *rose*?
- Phoneme segmentation: What sounds do you hear in the word *hot*?
- Phoneme counting: How many sounds do you hear in the word *cake*?
- Deleting phonemes: What sound do you hear in *meat* that is missing in *eat*?
- Odd word out: What word starts with a different sound: *bag*, *nine*, *beach*, *bike*?
- Sound to word matching: Is there a /k/ in *bike*?

Stanovich, 1994

## 2. Teach each sound-spelling correspondence explicitly.

Not all phonic instructional methods are equally effective. Telling the children explicitly what single sound a given letter or letter combination makes is more effective in preventing reading problems than encouraging the child to figure out the sounds for the letters by giving clues. Many children have difficulty figuring out the individual sound-spelling correspondences if they hear them only in the context of words and word parts. Phonemes must be separated from words for instruction.

Explicit instruction means that a phoneme is isolated for the children. For example, the teacher shows the children the letter *m* and says, "This letter says /mmm/." In this way a new phoneme is introduced. A new phoneme and other phonemes the children have learned should be briefly practiced each day, not in the context of words, but in isolation. These practice sessions need only be about 5 minutes long. The rest of the lesson involves using these same phonemes in the context of words and stories that are composed of only the letter-phoneme relationships the children know at that point.

## 3. Teach frequent, highly regular sound-spelling relationships systematically.

Only a few sound-spelling relationships are necessary to read. The most effective instructional programs teach children to read successfully with only 40 to 50 sound-spelling relationships. (Writing can require a few more, about 70 sound-spelling relationships.) The chart (see box) is not taken from any particular program but represents the 48 most regular letter-phoneme relationships. (The given sounds for each of the letters and letter groups are either the most frequent sound or occur at least 75% of the time.)

To teach systematically means to coordinate the introduction of the sound-spellings with the material the children are asked to read. The words and stories the children read are composed of only the sound-spelling relationships the children have learned, so all the children must be taught using the same sequence. The order of the introduction of sound-spelling relationships should be planned to allow reading material composed of meaningful words and stories as soon as possible. For example, if the first three sound-spelling relationships the children learn are *a*, *b*, *c*, the only real word the children could read would be *cab*. However, if the first three sound-spelling relationships were *m*, *a*, *s*, the children could read *am*, *Sam*, *mass*, *ma'am*.

*The 48 Most Regular  
Sound-Letter Relationships*

|     |            |     |             |     |                  |
|-----|------------|-----|-------------|-----|------------------|
| a   | as in fat  | g   | as in goat  | v   |                  |
| m   |            | l   |             | e   |                  |
| t   |            | h   |             | u-e | as in use        |
| s   |            | u   |             | p   |                  |
| i   | as in sit  | c   | as in cat   | w   | "woo" as in well |
| f   |            | b   |             | j   |                  |
| a-e | as in cake | n   |             | i-e | as in pipe       |
| d   |            | k   |             | y   | "yee" as in yuk  |
| r   |            | o-e | as in pole  | z   |                  |
| ch  | as in chip | ou  | as in cloud | kn  | as in know       |
| ea  | beat       | oy  | toy         | oa  | boat             |
| ee  | need       | ph  | phone       | oi  | boil             |
| er  | fern       | qu  | quick       | ai  | maid             |
| ay  | hay        | sh  | shop        | ar  | car              |
| igh | high       | th  | thank       | au  | haul             |
| ew  | shrewd     | ir  | first       | aw  | lawn             |

## 4. Show children exactly how to sound out words.

After children have learned two or three sound-spelling correspondences, begin teaching them how to blend the sounds into words. Show them how to move sequentially from left to right through spellings as they "sound out," or say the sound for each spelling. Practice blending words composed of only the sound-spelling relationships the children have learned every day.

## 5. Use connected, decodable text for children to practice the sound-spelling relationships they learn.

The findings of the NICHD research emphasize that children need extensive practice applying their knowledge of sound-spelling relationships to the task of reading as they are learning them. This integration of phonics and reading can only occur with the use of decodable text. Decodable text is composed of words that use the sound-spelling correspondences the children have learned to that point

and a limited number of sight words that have been systematically taught. As the children learn more sound-spelling correspondences, the texts become more sophisticated in meaning, but initially they are very limited. Only decodable text provides children the opportunity to practice their new knowledge of sound-letter relationships in the context of connected reading.

Texts that are less decodable do not allow the integration of the phonological knowledge the children gain with actual reading. For example, the first sentence children read in a meaning-based program that added an unintegrated phonic component was: "The dog is up." The sound-letter relationships the children had learned up to this point were: d, m, s, r, and t. This is how much of the sentence the children could read by applying what they had learned in the phonic component: "— d — — —." In this case, it is impossible for the children to use their phonics knowledge to read.

Here is a different example: "Sam sees a big fist." The sounds the children have learned to this point are: a, s, m, b, t, ee, f, g, and i. This is how much of the sentence the children can read using the sound-spelling relationships they have learned: "Sam sees a big fist." This sentence is 100% decodable. Here the children can apply the sound-spelling relationships they have learned to their reading of this sentence, so the phonics component is integrated into the child's real reading. Only decodable text provides children a context for using their new knowledge of sound-spelling relationships in the context of real reading.

Text that is less decodable requires the children to use prediction or context to figure out words. Much research has evaluated the effectiveness of prediction as a strategy for word recognition. Though prediction is valuable in comprehension for predicting the next *event* or predicting an *outcome*, the research indicates that it is not useful in word recognition. The following passage is a sample of authentic text (from Jack London). The parts of the text that are omitted are the parts that a child was unable to decode accurately. The child was able to decode approximately 80% of the text. If prediction is a useful strategy, a good reader should be able to read this easily with understanding:

He had never seen dogs fight as these w\_\_ish  
c\_\_f\_\_t, and his first ex\_\_t\_\_t him  
an unf\_\_able l\_\_n. It is true, it was a  
vi\_\_ ex\_\_, else he would not have  
lived to pr\_\_it by it. Curly was the  
v\_\_. They were camped near the log

store, where she, in her friend\_\_ way, made  
ad\_\_ to a husky dog the size of a full-  
\_\_ wolf, th\_\_ not half so large as \_he.  
\_\_ere was no w\_\_ing, only a leap in like a  
flash, a met\_\_ clip of teeth, a leap out equal\_\_  
swift, and Curly's face was ripped open from  
eye to jaw.

It was the wolf manner of fight\_\_, to st\_\_  
and leap away; but there was more to it than  
this. Th\_\_ or forty huskies ran \_o the spot and  
not com\_\_d that s\_\_t circle. But did not  
com\_\_d that s\_\_t in\_\_, not the  
e\_\_ way with which they were licking their  
chops. Curly rushed her ant\_\_, who  
struck again and leaped aside. He met her  
next rush with his chest, in a p\_\_ash\_\_  
that tum\_\_ed her off her feet. She never  
re\_\_ed them. This was \_\_at the  
on\_\_ing huskies had w\_\_ for.

The use of predictable text, rather than this authentic text, might allow children to use prediction to figure out a passage. However, this strategy would not transfer to real reading, as the above passage demonstrates. Predictable text gives children false success. While this false success may be motivating for many children, ultimately they will not be successful readers if they rely on text predictability to read.

## 6. Use interesting stories to develop language comprehension.

The use of interesting, authentic stories to develop language comprehension is not ruled out by this research. Only the use of these stories *as reading material* for nonreaders is ruled out. Any controlled connected text, whether it is controlled for decodability or for vocabulary, will not be able to provide entire coherent stories in the early stages of reading acquisition. During this early stage of reading acquisition, the children can still benefit from stories that the teacher reads to them. These teacher-read stories can play an important role in building the children's oral language comprehension, which ultimately affects their reading comprehension. These story-based activities should be structured to build comprehension skills, not decoding skills.

**Balance, but don't mix.** The sixth feature, using real stories to develop comprehension, should be balanced with the decoding instruction described in the first five features. The comprehension instruction and the decoding instruction are separate from each other while children are learning to decode, but both types of instructional activities should occur.

In other words, comprehension and decoding instruction should be balanced. A common misconception regarding the balance that is called for by the research is that the teacher should teach sound-spelling relationships in the context of real stories. This mixture of decoding and comprehension instruction in the same instructional activity is clearly less effective, even when the decoding instruction is fairly structured. The inferiority of single instructional activities with mixed goals (embedded phonics) has been demonstrated in several studies (Foorman et al., in press; Foorman, Francis, Novy, & Liberman, 1991; Torgesen et al., in press).

During the early stages of reading acquisition, children's oral language comprehension level is much higher than their reading comprehension level. The text material used to build children's comprehension should be geared to their oral language comprehension level. The material used to build their decoding should be geared to their decoding skills, with attention to meaning. Though decodable text can be meaningful and engaging, it will not build children's comprehension skills nor teach them new vocabulary to the extent that might be needed. Comprehension strategies and new vocabulary should be taught using orally presented stories and texts that are more sophisticated than the early decodable text the children read. The teacher should read this text to the children and discuss the meaning with them. After the children become fluent decoders, they can apply these comprehension strategies to their own reading.

### **Other Important Research Questions and Findings**

The scope of the NICHD research program is much broader than identifying effective methods for treating reading difficulties. Some of these research questions and the findings are briefly described below.

**Research Question:** What individual variables affect reading acquisition?

**Finding:** Bilingualism does not interact with reading acquisition. If children know some English, they learn to read in the same way that other children learn. There is no evidence that some children with reading difficulties need a different approach. The greater the severity of the problem, the more explicit, systematic, and carefully planned the instruction needs to be along the parameters defined above. So far the only variable found that interacts with read-

ing acquisition is ethnic group. Significantly more African-American children have lower levels of phonemic awareness and respond significantly better to direct instruction in phonemic awareness than other ethnic groups. Researchers are still testing the replicability of this finding.

**Research Question:** Are there medical reasons to explain why 20 to 40% of the population do not naturally develop phonemic awareness?

**Finding:** Yes, sophisticated modern brain research using neuroimaging and other technologies show a unique brain signature for many, but not all, children without phonemic awareness. This neuroimaging research is being conducted at several NICHD sites, thus providing the opportunity for replication.

**Research Question:** Are reading disabilities inherited?

**Finding:** Twin studies have found strong evidence for genetic etiology of reading disabilities, with deficits in phonemic awareness reflecting the greatest degree of heritability. There is also behavioral genetic evidence for degrees of heritability for letter processing.

**Research Question:** How does ADD relate to learning disabilities?

**Finding:** Disorders of attention and reading disabilities often coexist, but the two disorders appear distinct and separable with respect to the effects of attention-deficit disorder (ADD) on cognitive tasks. For example, it has been found that ADD children perform poorly on rote verbal learning and memory tasks, but relatively well on naming and phonemic awareness tasks. The converse appears to be the case for children with reading disabilities.

**Research Question:** Are more boys than girls reading disabled?

**Finding:** Despite the widely held belief that boys are more likely to have reading disabilities than girls, research has shown that as many girls as boys have difficulties learning to read. More boys are identified by teachers in school because of their tendency to be more rowdy and active than girls.

## Future Directions

The NICHD research program has made a great deal of progress in the investigation of reading difficulties. These findings are potentially of great benefit to most children. However, the work is not done and not all the issues are resolved. There are still children with reading disabilities in the most successful interventions described above. Future research will investigate effective treatments for teaching children who have no knowledge of English to read English. The on-going longitudinal intervention studies sponsored by the NICHD will be bringing important new knowledge to the field in the continuing effort to make every child a reader at an early age.

### A New Definition of Dyslexia

Scientists from NICHD and other scientists as well as leaders from the National Center for Learning Disabilities and the Orton Dyslexia Society Research Committee collaborated to develop an improved definition of disabilities in basic reading skills based on the most recent research in the field. Characterizing the definition as a "working" definition reflects the need to alter the definition in light of continuing advances in research and clinical knowledge. The working definition is as follows:

Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterized by difficulties in single word decoding, usually reflecting insufficient phonological processing. These difficulties in single word decoding are often unexpected in relation to age and other cognitive and academic abilities; they are not the result of generalized developmental disability or sensory impairment. Dyslexia is manifest by variable difficulty with different forms of language, often including, in addition to problems with reading, a conspicuous problem with acquiring proficiency in writing and spelling (The Orton Dyslexia Society Research Committee, April, 1994).

## References

- Alford, J. (1980, May). *Predicting predictability: Identification of sources of contextual constraint on words in text*. Paper presented at the meeting of the Midwestern Psychological Association, St. Louis.
- Aborn, M., Rubenstein, H., & Sterling, F. (1959). Sources of contextual constraint upon words in sentences. *Journal of Experimental Psychology*, 57, 171-180.
- Adams, M. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Ball, E. W., & Blachman, B. A. (1991). Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? *Reading Research Quarterly*, 26(1), 49-66.
- Byrne, B., & Fielding-Barnsley, R. (1990). Acquiring the alphabetic principle: A case for teaching recognition of phoneme identity. *Journal of Educational Psychology*, 83, 451-455.
- Cunningham, A. E. (1990). Explicit versus implicit instruction in phonological awareness. *Journal of Experimental Child Psychology*, 50, 429-444.
- Dahl, K.L., & Freppon, P. (1995). A comparison of inner-city children's interpretations of reading and writing instruction in the early grades in skill-based and whole language classrooms. *Reading Research Quarterly*, 30, 50-74.
- Fletcher, J., Shaywitz, S., Shankweiler, D., Katz, L., Liberman, I., Stuebing, K., Francis, D., Fowler, A., & Shaywitz, B. (1994). Cognitive profiles of reading disability: Comparisons of discrepancy and low achievement definitions. *Journal of Educational Psychology*, 86(1), 6-23.
- Foorman, B., Francis, D., Beeler, T., Winikates, D., & Fletcher, J. (in press). Early interventions for children with reading problems: Study designs and preliminary findings. *Learning Disabilities: A Multidisciplinary Journal*.
- Foorman, B., Francis, D., Novy, D., & Liberman, D. (1991). How letter-sound instruction mediates progress in first-grade reading and spelling. *Journal of Educational Psychology*, 83(4), 456-469.
- Francis, D., Shaywitz, S., Stuebing, K., Shaywitz, B., & Fletcher, J. (1996). Developmental lag versus deficit models of reading disability: A longitudinal, individual growth curves analysis. *Journal of Educational Psychology*, 88(1), 3-17.
- Freppon, P.A. (1991). Children's concepts of the nature and purpose of reading in different instructional settings. *Journal of Reading Behavior*, 23(2), 139-163.
- Gough, P. (1983). Context, form, and interaction. In K. rayner (Ed.), *Eye movements in reading* pp. 331-358. Cambridge, MA: MIT Press.

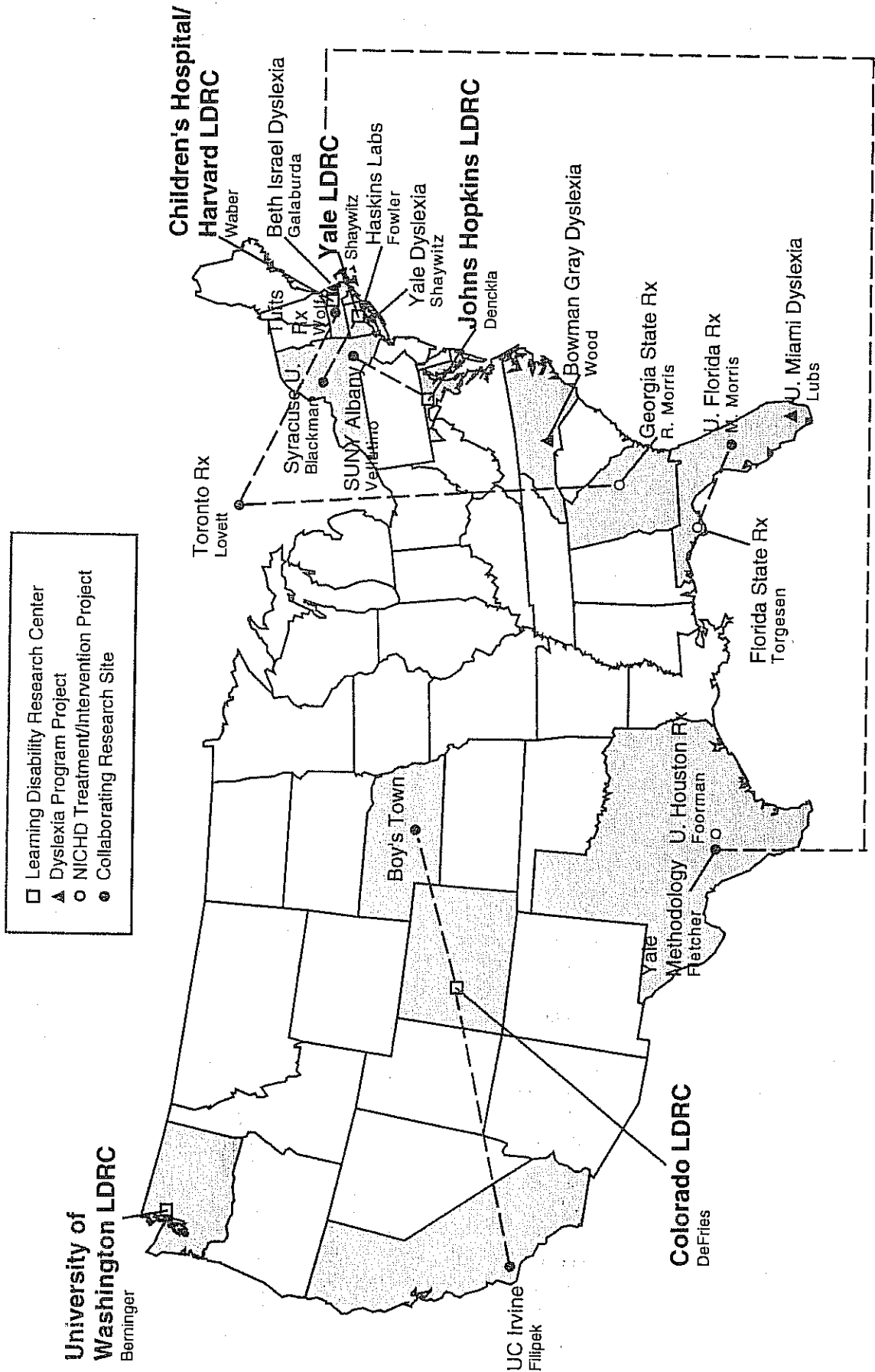
- Hiebert, E. H., Colt, J.M., Catto, S.L., & Gary, E.C. (1992). Reading and writing of first-grade students in a restructured Chapter 1 program. *American Educational Research Journal*, 29, 545-572.
- Iversen, S., & Tunmer, W. (1993). Phonological Processing Skills and the Reading Recovery Program. *Journal of Educational Psychology*, 85(1), 112-126.
- Kasten, W.C., & Clarke, B.K. (1989). Reading / writing readiness for preschool and kindergarten children: A whole language approach. Sansibel: Florida Educational Research and Development Council (ED 312 041).
- Kaufman, A.S., & Kaufman, N.L. (1985). *Kaufman Test of Educational Achievement*. Circle Pines, MN: American Guidance Service.
- Lie, A. (1991). Effects of a training program for stimulating skills in word analysis in first-grade children. *Reading Research Quarterly*, 26(3), 234-250.
- Lovett, M., Borden, S., DeLuca, T., Lacerenza, L., Benson, N., & Brackstone, D. (1994). Treating core deficits of developmental dyslexia: Evidence of transfer of learning after phonologically- and strategy-based reading training programs. *Developmental Psychology*, 30(6), 805-822.
- Lundberg, L., Frost, J., & Petersen, O. (1988). Effects of an extensive program for stimulating phonological awareness in preschool children. *Reading Research Quarterly*, 23, 263-284.
- Lyon, R., & Alexander, D. (1996). NICHD research program in learning disabilities. In S. Horowitz (Ed.), *Their World*, p 13-15. New York, NY: National Center for Learning Disabilities.
- Lyon, G.R., & Chhabra, V. (1996). The current state of the science and the future of specific reading disability. *Mental Retardation and Developmental Disabilities Research Reviews*, 2, 2-9.
- Lyon, G.R. (1993). *Treatment effectiveness for the learning disabled*. Request for Applications (93-009). Bethesda, MD: The National Institute of Child Health and Human Development.
- Lyon, G.R. (1994). *Frames of reference for the assessment of learning disabilities: New views on measurement issues*. Baltimore, MD: Paul H. Brookes.
- Lyon, G.R. (1995a). Toward a definition of dyslexia. *Annals of Dyslexia*, 45, 3-27.
- Lyon, G.R. (1995b). Research initiatives in learning disabilities: Contributions from scientists supported by the National Institute of Child Health and Human Development. *Journal of Child Neurology*, 10, 120-126.
- Lyon, G.R., Gray, D., Kavanagh, J., Krasnegor, N. (Eds.) (1993). *Better understanding learning disabilities: New views from research and their implications for education and public policies*. Baltimore, MD: Paul H. Brookes.
- Mann, V. A. (1993). Phoneme awareness and future reading ability. *Journal of Learning Disabilities*, 26(4), 259-269.
- McIntyre, E., & Freppon, P. (1994). A comparison of children's development of alphabetic knowledge in a skill-based and a whole language classroom. *Research in the Teaching of English*, 28, 391-417.
- Miller, G., & Coleman, E. (1967). A set of thirty-six prose passages calibrated for complexity. *Journal of Verbal Learning and Verbal Behavior*, 8, 851-854.
- Perfetti, C.A., Goldman, S., & Hogaboam, T. (1979). Reading skill and the identification of words in discourse context. *Memory and Cognition*, 7, 273-282.
- Rack, J. P., Snowling, M. J., & Olson, R. K. (1992). The nonword reading deficit in developmental dyslexia: A review. *Reading Research Quarterly*, 27(1), 29-53.
- Ribowsky, H. (1985). The effects of a code emphasis approach and a whole language approach upon emergent literacy of kindergarten children. Alexandria, VA: Educational Document Reproduction Service (ED 269 720).
- Rubenstein, H., & Aborn, M. (1958). Learning, prediction, and readability. *Journal of Applied Psychology*, 42, 28-32.
- Shaywitz, S., Escobar, M., Shaywitz, B., Fletcher, J., & Makuch, R. (1992). Evidence that dyslexia may represent the lower tail of a normal distribution of reading disability. *New England Journal of Medicine*, 326(3), 145-150.
- Snowling, M. (1991). *Dyslexia: A cognitive developmental perspective*. Oxford: Basil Blackwell.
- Spector, J. E. (1995). Phonemic awareness training: Application of principles of direct instruction. *Reading & Writing Quarterly*, 11, 37-51.
- Stanovich, K., & Siegel, L. (1994). Phenotypic performance profile of children with reading disabilities: A regression-based test of the phonological-core variable-difference model. *Journal of Educational Psychology*, 86(1), 24-53.
- Stanovich, K. (1993). The construct validity of discrepancy definitions of reading disability. In G.R. Lyon, D. Gray, J. Kavanagh, N. Krasnegor (Eds.) (1993). *Better understanding learning disabilities: New views from research and their implications for education and public policies*. Baltimore, MD: Paul H. Brookes.
- Stanovich, K. (1994). Romance and reality. *The Reading Teacher*, 47(4), 280-291.
- Stanovich, K., & Stanovich, P. (1995). How research might inform the debate about early reading acquisition. *Journal of Research in Reading*, 18(2), 87-105.
- Stanovich, K.E. (1986). Matthew effects in reading:

- Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-407.
- Stice, C.F., & Bertrand, N.P. (1990). Whole language and the emergent literacy of at-risk children: A two-year study. Nashville: Center of Excellence, Basic Skills, Tennessee State University (ED 324 636).
- Torgesen, J.K., Wagner, R., Rashotte, C.A., Alexander, A.W., & Conway, T. (in press). Preventive and remedial interventions for children with severe reading disabilities. *Learning Disabilities: A Multidisciplinary Journal*.
- Vellutino, F. R. (1991). Introduction to three studies on reading acquisition: Convergent findings on theoretical foundations of code-oriented versus whole-language approaches to reading instruction. *Journal of Educational Psychology*, 83(4), 437-443.
- Vellutino, F. R., & Scanlon, D. M. (1987a). Linguistic coding and reading ability. In S. Rosenberg (Ed.), *Advances in applied psycholinguistics* (pp. 1-69). New York: Cambridge University Press.
- Vellutino, F. R., & Scanlon, D. M. (1987b). Phonological coding, phonological awareness, and reading ability: Evidence from a longitudinal and experimental study. *Merrill-Palmer Quarterly*, 33(3), 321-363.
- Wagner, R.K., & Torgesen, J. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. *Psychological Bulletin*, 101, 192-212.
- Yopp, H. K. (1988). The validity and reliability of phonemic awareness tests. *Reading Research Quarterly*, 23(2), 159-176.

### The NICHD Research Sites

| Location  | Director(s)                | Affiliates  |
|---|----------------------------|---|
| University of Colorado                              | John DeFries               | University of Denver<br>University of California, Irvine<br>Harvard University                      |
| Bowman-Gray School of Medicine, North Carolina      | Frank Wood                 |   |
| Haskins Laboratories                                | Carol Fowler               |   |
| Yale University                                     | Bennett and Sally Shaywitz | Keith Stanovich's team at the Ontario Institute for Studies in Education                            |
| University of Miami                                 | Herbert Lubs               |   |
| Beth Israel Hospital/<br>Harvard University         | Albert Galburda            |   |
| University of Houston                               | Jack Fletcher              |   |
| University of Washington, Seattle                   | Virginia Berninger         |   |
| Harvard University / The Children's Hospital-Boston | Deborah Waber              |   |
| John Hopkins University                             | Martha Denckla             | Vellutino and Scanlon's team at the State University of New York                                    |
| Florida State University                            | Joseph Torgesen            |   |
| University of Houston                               | Barbara Foorman            |   |
| Georgia State University                            | Robin Morris               | Maureen Lovett's team at the University of Toronto;<br>Maryanne Wolfe's at Tufts University, Boston |

# NICHD LD Research Network





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# Our Son and Reading Recovery

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*Editor's note: Nancy and Cameron James and their son, Joseph James, have filed suit against the Upper Arlington City School District Board of Education in Ohio (case # C2-97-172). The defendants are William Schaefer, Superintendent; Linda Readey, School Board President; Edward Seidel, Mark Sheriff, Thomas C. Wilson, III, and Steve Sikora, School Board members. The following letter written by Cameron James to Superintendent William Schaefer has been entered as evidence (Exhibit B) in the trial and explains the James' complaint.*

Dr. Bill Schaefer, Superintendent  
Upper Arlington City Schools  
1950 North Mallway  
Columbus, OH 43221

May 13, 1996

Re: Joseph James  
DOB: August 30, 1979

Dear Dr. Schaefer:

Pursuant to the Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act, this is a request for a special education due process hearing in order to secure retroactive and prospective tuition for our son's special education at the Kildonan School.

To understand the history leading to this request, please allow me to describe our son's public school experience and present school situation.

Words can never describe how proud I am to be the father of Joseph Albert James. My wife and I named him for his great grandfathers: Joseph Romas, an Italian immigrant who valued education and Albert F. Cameron, an educator who at one time was an Ohio School District Superintendent.

My son has lived up to his two namesakes. In spite of a severe handicapping condition he has learned. In the process, he has and continues to demonstrate a level of determination and perseverance worthy of admiration. From the time he started school, Joe has had to deal with a world of intolerance, humiliation, repeated failure, lost childhood, living away from his family, lack of self esteem, a desire to run and hide, no self confidence and the fear of being worthless.

Joe was born on August 30, 1979. He was our third child. His older sister was Nancy Susanne and his big brother was Arthur Louis. Together we liked to refer to our family as "The James Gang."

My wife and I often talked about how different and individual each of our children was. Nancy

Susanne was incredibly vocal. Arthur Louis was quiet and intense and Joseph Albert was our happiest child. He seemed to be gifted with a happy-go-lucky attitude and he was always laughing. When I picture Joe in mind as an infant or toddler I see a face filled with a great big smile.

I worked at a television production company and my wife dedicated herself to raising our family. These early years in Joe's life were exciting and enriching. They were filled with family activities. My wife read to our children almost daily. They went to story time at the public library and participated in church groups and community activities.

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**Joseph Albert was our happiest child. He seemed to be gifted with a happy-go-lucky attitude and he was always laughing.**

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Sometimes my job required children as talent in videotape or slide shows. So Joe and his siblings got to go on location and be involved in my work. Joe always behaved professionally and he demonstrated a good ability to listen and to follow directions.

As a preschool child Joe had difficulty producing certain sounds. He would often mispronounce a word or use word in the wrong context. Because we have a family history of dyslexia we had Joe tested by Dr. Stewart. Dr. Stewart diagnosed Joe as dyslexic in July of 1985, before Joe entered kindergarten.

My wife and I had grown up and lived most of our lives in Upper Arlington. Although I had not experienced much academic success in school, we had great confidence in the education the Upper Arlington School System could provide for our children.

At the time Joe started kindergarten, at Barrington Elementary School, my wife provided the school with Dr. Stewart's report and discussed Joe's learning disability with his classroom teacher, the school

nurse and administrative staff. The school system did not provide an evaluation or I.E.P. [Individual Education Plan] for Joe and he was not served.

My wife specifically asked Lou Willis, vice principal, about testing Joe and Mrs. Willis told my wife Joe was really too young to be tested.

I wish I had just one day to live over again in my life. It would be Joe's first day of kindergarten. I would hold Joe's hand and walk into the school. We would go directly to Principal Ted Oakley's office and I would not let go of Joe's hand until I was certain that Joe James would be served appropriately.

Joe's kindergarten year seemed uneventful. I really didn't notice a big change in Joe's personality.

Just before Joe's first grade year was to begin, his teacher contacted my wife and told her that Joe qualified for the Reading Recovery program and Joe would receive one-on-one instruction, daily, from Joetta Beaver. My wife reminded Joetta that Joe was dyslexic. However, Joetta said, "I don't want to hear about his dyslexia. I'm going to recover Joe."

Joetta Beaver had been our daughter's classroom teacher. She was also a teacher leader in Reading Recovery. We thought she knew what she was doing. We considered Joetta and the other educators at Barrington as the "experts" in deciding what to do about Joe's reading difficulties.

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**Just before Joe's first grade year was to begin, his teacher contacted my wife and told her that Joe qualified for the Reading Recovery program and Joe would receive one-on-one instruction, daily, from Joetta Beaver. My wife reminded Joetta that Joe was dyslexic. However, Joetta said, "I don't want to hear about his dyslexia. I'm going to recover Joe."**

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Today, I have learned that Reading Recovery was probably the worst thing that we could have done to Joe. Due to Joe's dyslexia he had no natural phonological awareness and a poor visual memory. Instead of an intensive, systematic, phonological method like Orton-Gillingham, the Reading Recovery method teaches the child to use picture and context clues, and tries to get the child to memorize sight words. Every day, Joetta taught Joe to guess at words based upon what he saw in the pictures and his understanding of the sentence context.

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**Today, I have learned that Reading Recovery was probably the worst thing that we could have done to Joe.**

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Joe did not learn to read with the Reading Recovery method, but he did practice guessing at words day after day. This has had a devastating effect on Joe's learning to read. Every time he would guess and be wrong he felt he had failed. This will emotionally effect Joe the rest of his life.

Joe got so frustrated that year that it changed his personality. Joe our happiest child was gone and Joe became a child who feared failure. Joe began to judge himself by his peers. They could read and he couldn't. Joe's self esteem dropped through the floor. Joetta was so determined to recover Joe that she indicated to us that she had kept him in the Reading Recovery program "twice as long" as normal. Joe finally got so upset that he refused to go to Reading Recovery and Joetta stopped her sessions.

My son had more than 100 Reading Recover lessons before Joetta referred him to special education.

I have learned that Joetta had an above average interest in proving the success of Reading Recovery. I believe this is why she specifically wanted Joe in the program and why she so aggressively used the method with him. The Ohio State University Department of Education was instrumental in bringing Reading Recovery to the United States from New Zealand. Joe was one of the first students, in this country, to use this significantly modified New Zealand approach. I consider Reading Recovery, at the time it was used on Joe, to be experimental. We were never informed of this.

Joetta was one of the very first Reading Recovery teachers. She was a Reading Recovery teacher leader. She worked closely with Carol A. Lyons at the Ohio State University. After Joetta taught Joe, she published research on Reading Recovery. She participated in speaking engagements regarding Reading Recovery. She received peer recognition for her work with Reading Recovery. I believe Joetta had a professional and emotional stake in proving the success of Reading Recovery. I do not know to what extent, if any, she had benefited financially from her role with Reading Recovery. However, I perceive that Joetta had a conflict of interest when it came to deciding what would be the best method to use with a dyslexic child. I keep asking myself was Joe used as a guinea pig for Joetta's research?

Two crucial years had passed for Joe, at the end of the first grade the school system finally tested him

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and we were notified of an I.E.P. meeting. At this time my wife and I had heard about the Orton-Gillingham method of teaching reading. Prior to going to Joe's I.E.P. meeting we spoke with Jane Renner of the State of Ohio, Department of Special Education regarding what we could request for Joe. Our understanding of what Jane told us was that we could not request a specific program. We could describe the type of program we thought Joe needed.

At the I.E.P. meeting my wife described in great detail the type of method we thought Joe needed. It should be a multi-sensory, intense, systematic, phonetic approach. The other members of the I.E.P. team reacted as if they had never heard of this method. They all shared the view that "Joe had difficulty with parts-to-whole." They suggested

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**Joe our happiest child was gone and Joe became a child who feared failure. Joe began to judge himself by his peers. They could read and he couldn't. Joe's self esteem dropped through the floor.**

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that if you tried to teach Joe the parts he would just become more confused and frustrated. No matter how we tried to get them to try the approach we thought Joe needed they would come back to the theme of Joe having difficulty with parts-to-whole.

As I look back on that meeting it is clear to me that the school system could not provide an appropriate education for Joe. The only people the school had on staff believed in the whole language philosophy. No one was trained in methods that would have taught Joe how to read. No one knew how to teach Joe the parts. That's why Joe was having "difficulty with parts-to whole."

At Joe's I.E.P. meeting, instead of the team focusing on why Reading Recovery had failed Joe, the focus was on why Joe had failed Reading Recovery. To my wife and me the educators on Joe's I.E.P. team were the experts in deciding what was appropriate for Joe. None of them ever challenged the appropriateness of using Reading Recovery with our dyslexic child. None of them ever challenged the appropriateness of using a whole language approach with our dyslexic child.

I believe the educators on Joe's I.E.P. team had a conflict of interest because the school followed only one instructional philosophy: whole language. Reading Recovery fit the school's whole language mold. An intensive, systematic, phonics approach to teaching reading did not fit the school's mold.

I did not understand back then, but I see now that Joe was a little boy, trying his best. Regardless of how hard he tried he could not fit the mold. Joe could not learn from the way he was being taught any more than a deaf child could learn without an interpreter or a child with paralyzed legs could learn without a wheelchair.

I do not know how Joe survived. Each day he walked down the street from our home to Barrington School knowing he faced another day of failure. And all the time his parents, and teachers, the people he admired most, kept telling him "if you just try a little harder, Joe, you will learn."

Joetta Beaver taught the Barrington School classroom teachers Reading Recovery. Joetta also taught Reading Recovery to the Special Education tutors at Barrington. So, even though Joe was officially out of Reading Recovery it was still the primary philosophy behind the method used to try to teach Joe how to read.

I can imagine how worthless Joe must have felt because he didn't fit the mold. The other kids laughed at him and called him stupid. I remember Joe telling about how it embarrassed him when his teacher graded his paper at her desk, while other kids were around. Once, after the kids did a writing assignment, the teacher asked them to exchange papers with classmates. The kid who got Joe's paper laughed about how bad it was in front of the class.

Joe's skills fell further and further behind those of his peers. He was a little boy with almost no friends. He didn't want to go to camp because they might ask him to read. He refused to go to the shopping center with some boys once because he couldn't read the menu board at the restaurant in the food court. We had to make sure the youth minister would not call upon Joe to read from the Bible before he would go to Sunday school. Joe was a loner, preferring just to stay at home. Home was safe for Joe. Out in the rest of the world he was in constant fear of being discovered. He could not read and Joe believed it was his

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**Joetta was one of the very first Reading Recovery teachers. ...After Joetta taught Joe, she published research on Reading Recovery. She participated in speaking engagements regarding Reading Recovery. She received peer recognition for her work with Reading Recovery. ...I keep asking myself was Joe used as a guinea pig for Joetta's research?**

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fault.

When Joe started second grade in 1987, we hired a private Orton-Gillingham tutor. Joe met with Mrs. Anne Schlichter once a week during the entire school year and following Summer and Fall. Joe's progress was sporadic because the classroom instruction did not support the tutoring instruction. Joe was instructed to use picture clues and context clues. Sounding out words, or using phonics was discouraged. How confusing this must have been for Joe.

**At Joe's I.E.P. meeting, instead of the team focusing on why Reading Recovery had failed Joe, the focus was on why Joe had failed Reading Recovery. None of them ever challenged the appropriateness of using Reading Recovery with our dyslexic child. None of them ever challenged the appropriateness of using a whole language approach with our dyslexic child.**

That Fall, due to a family illness, we had to discontinue the Orton-Gillingham tutoring. Joe's mother was not able to take him to tutoring or work with him at home. After my wife's recuperation, Joe resumed the Orton-Gillingham tutoring from the end of his third grade until November of Joe's fourth grade. At that time we enrolled Joe in Marburn Academy where he would receive Orton-Gillingham instruction daily.

During the first four years of Joe's schooling, kindergarten through third grade, we trusted the educators at Barrington. By the beginning of fourth grade Joe was drowning and we realized that the educators at Barrington would never teach Joe how to read.

First: Joe's classroom teacher stopped my wife in the school hallway. She appeared panicked. She said she didn't know what to do about Joe. His skills were so far behind the rest of the class. My wife asked for an I.E.P. meeting and one was scheduled.

Second: When my wife went to the I.E.P. meeting she was informed that the meeting was not an I.E.P. meeting. This was a disappointment to my wife because she felt Joe was treading water and if something was not done quickly Joe would drown. By not holding an I.E.P. meeting we perceived the school's lack of commitment to Joe.

Third: My wife stayed and talked to the educators, that day, anyway. At that time, the classroom teacher brought out Joe's writing journal. My wife pointed out that Joe was using the book backwards and asked why his teacher had not taught him the correct way to write in it. She was told that it was important for children to learn through discovery and that eventually Joe would learn the correct way to use the writing journal. The message to us was that if Joe stayed at Barrington he would receive little direct instruction. We believed Joe needed direct step by step instruction. The message was clear, at Barrington this type of instruction was not going to happen.

Fourth: At that same meeting Joetta Beaver said she had done a Reading Recovery test of Joe, that day, which showed him reading at a book level equivalent to less than a first grader. Any trust we ever had in the educators was gone. In spite of all the hours and hours of tutoring and Reading Recovery, over four years, Joe's skills had shown no growth.

Fifth: The school psychologist, Paula Ford, said to my wife: "...Joe is just going to have to learn there are other ways to get information besides reading."

The school system might as well have sent us a telegram saying, "Joe James will never learn to read in the Arlington School System."

What were we supposed to do? What would any parent do?

Our child was suffering terribly. He was not learning. He was not even treading water. He was drowning and emotionally crumbling in front of our eyes. We felt overwhelmed. We had to do something and the school system only offered a failed approach.

The school system had tried to teach Joe for four years without success. To us, the educators were now giving up and telling us we should accept the fact

**If a school system only believes in one instructional philosophy, how does a handicapped child receive an individualized education?**

that Joe was never going to learn to read.

I.E.P. meetings were ineffective. No matter how hard we tried to get the I.E.P. team to agree on an intensive, systematic, phonics method for Joe, they would not provide it.

If a school system only believes in one instructional philosophy, how does a handicapped child receive an individualized education?

In our family, important conversations always took place at our dining room table. Joe and I sat there that night and talked about school. Joe did not want to leave Barrington. I said, "Joe, you only get one chance to learn and I don't think they know how to teach you at Barrington." Joe finally agreed. He said he would go to Marburn Academy for one year, learn to read, and then return to Barrington.

At the beginning of this letter I wrote that I was proud to be the father of Joe James. Even though Joe was only ten years old he faced a major life decision. Joe demonstrated great courage in choosing to leave Barrington. To him it meant facing the ultimate humiliation and total rejection from his peers. Joe could hide no longer. He would be discovered. His worthlessness would be revealed to his whole world. Joe knew the pain. He faced it with courage and with faith in the love of his parents.

How can adults understand how Joe felt? What might make an adult feel totally humiliated and worthless? Having their spouse file for divorce? Being fired from their job? Going blank during an important speech? Each of us knows a situation we fear facing. Just the thought of being in that situation makes your body turn cold preparing for shock. At the age of ten Joe James had to come to terms with what he feared most. On his last day at Barrington, Joe's teacher let him say good-bye to his classmates. A year or two later I videotaped Joe and he talked about his disability and school. Joe joked about it all until I asked him to tell me what he said to his classmates on his last day at Barrington. Joe broke down and cried. I could see that Joe will experience the pain his whole life.

Joe started Marburn Academy in November. At the end of the school year Paula Ford, the Upper Arlington psychologist, went to Marburn and tested Joe. During his five month at Marburn Joe experienced a year's growth in reading. To me this meant Joe was on the right course for the first time since he started school. It meant that Paula Ford might be wrong about Joe having to learn there are other ways to get information besides reading. Joe could learn to read when he received an appropriate education.

The reading teacher, who had been successful with Joe, moved away. His next year at Marburn was not successful and my wife and I began to have concerns. Very few teachers have appropriate training to teach the dyslexic. Because of the severity of Joe's dyslexia he needed a more intensive remedial program. After much consideration we decided to look for a boarding school for dyslexics.

Seventh grade was spent at The Gow School. The Gow School is the oldest college preparatory school

for dyslexic young men. We considered The Gow School because my wife knew the headmaster through The Orton Dyslexia Society. When we inquired about the school we were told that they use the Gow method for reading and we were told that the "Gow" was just like the Orton-Gillingham.

It's really painful to look back on the day we visited Gow. Joe told the admissions director that he needed someone to help him with any reading activity. "Do you understand that I can't do my homework in study hall because I can't read well enough

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**At the beginning of Joe's eighth grade and first year at Kildonan, he was reading on a third grade level. Today, Joe is in the tenth grade at Kildonan, reading on a seventh grade level. Joe has chosen to return to Kildonan each year. He knows they teach the way he learns.**

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to do my homework by myself?" He answered, "Don't worry, we have proctors in study hall that will help you." As the school year progressed, the Gow school called to tell me that the school wanted to hire a tutor for Joe so he could get the additional attention the school could not provide. This would be an additional expense since this service was over and above their regular program. We consented but the tutor left the position and the school did not or could not replace her before the end of the school year. In retrospect, almost a whole year went by before Gow realized that Joe was a severe, non-reading and non-writing dyslexic.

When we arrived on the last day of school, we were handed Joe's testing results. Joe had regressed. My wife and I requested Mr. Sweet's attention and asked him if he had an explanation for the lack of progress. Mr. Sweet said, "No."

That summer, Joe suffered great depression. Depression over loss. I can't think how that must have felt. Joe saw failure everywhere he turned. He would not accept returning to Gow. He told us he would kill himself first. Joe, his mother and I looked to a psychologist for help. He confirmed Joe's depression and asked us to find a different placement. The psychologist felt that The Gow School was not meeting Joe's needs.

At the same time, we asked Anne Schlichter to reevaluate and work with Joe during the summer months. Mrs. Schlichter also found that Joe had regressed.

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**I will always feel cheated that my son had to be educated so far away from home. I will always feel pain for Joe's lost childhood. I will always regret that my public school didn't know how to teach my son. I will always be angry that my public school wouldn't listen to my wife or me.**

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My wife checked around and decided to look at the Kildonan School. We woke Joe up early one morning and told him to pack a bag for overnight. Joe and his mother were flying to Hartford and then driving to Amenia, New York to visit The Kildonan School.

After testing and tour of the school grounds Joe had opportunity to observe a one-on-one Orton-Gillingham tutor session.

Joseph's mother will never forget that day because at the end of their visit Joe looked at his mom and said, "If you send me here next year, my skills will leap." Joe was accepted. My wife called me from the airport before their return home. I asked her how it went and with tears in her voice she said, "I have new hope that we found the right school for Joe."

At the beginning of Joe's eighth grade and first year at Kildonan, he was reading on a third grade level. Today, Joe is in the tenth grade at Kildonan, reading on a seventh grade level. Joe has chosen to return to Kildonan each year. He knows they teach the way he learns. When he started Kildonan two and a half years ago, he couldn't write well enough to score on the Ayres Copying Speed, last May he scored on a third grade, sixth month level. That's more than a three year gain in two years.

The Kildonan School saved our son's life. He is beginning to deal with the emotional issues of being

dyslexic. He is learning to be an independent student. Joe knows he is not at the end of his remedial growth. Joe, his mother and I are just beginning to realize Joe's true potential.

If it wasn't for Kildonan, I shudder to think where we might be today. Would Joe have found unacceptable ways to escape his pain? If Joe would have received an appropriate education during the early, critical years, Joe would not have to be growing up without me. Separation has been very difficult but this selfless act has made the single most important difference in his life.

Joe continues to meet the challenges of being dyslexic in a society based on language. Research shows us that if you don't provide appropriate remediation for the dyslexic before the age of 8, they will have life long difficulties with language.

I will always feel cheated that my son had to be educated so far away from home. I will always feel pain for Joe's lost childhood. I will always regret that my public school didn't know how to teach my son. I will always be angry that my public school wouldn't listen to my wife or me.

To date, I have invested in excess of \$150,000.00 in Joe's education. Next year's tuition will be another \$29,000. This letter is a request for a due process hearing to secure reimbursement of prior expenses and tuition for next year. If you can resolve this without the necessity of a due process hearing, then that would be most appreciated.

If you cannot resolve this without a due process hearing, my attorney is Jennifer Joseph, 88 E. Broad Street, Columbus, Ohio 43215, she can be reached at 224-3111 and Peter Wright, 4104 E. Parham Road, Richmond, Virginia 23228-2734, and he can be reached at 804-755-3000. In consideration of summer vacation schedules and in order to allow sufficient time to discuss settlement, I hereby waive the 45 day rule.

Respectfully,  
Cameron James

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# Who'll Teach Danielle to Read?

Patricia Pullen  
Jackson-Via Elementary School  
Charlottesville, Virginia

When I served on the Child Study Committee at Jackson-Via Elementary School, I was responsible for testing only the students in my second grade special education class for the mildly mentally handicapped who needed triennial evaluations. But the resource teacher responsible for assessment of other students, gave the members several choices the year Danielle was referred. "Either I can stop teaching and test all these referrals. Or I can just complete the assessments late and defy federal guidelines."

The principal had another alternative. The other members of the committee would also be responsible for testing referred students, writing educational assessments, and presenting the data at the eligibility meetings. Because I taught Danielle's first cousin, Alice, who was a foster child in Danielle's home, the committee assigned me Danielle.

Danielle was a second grader referred because her reading was seriously delayed, and because she was disruptive in class. I thought she was funny, but I could understand why someone rapping in reading group might be considered a pain. She was the smallest second grader in four classes, wore her hair beaded and braided, and resembled a miniature Diana Ross. "I got the genes for being little," she informed me one morning. "My momma's small." Her mother, Marie, was indeed small, 4'11", and weighed 80 pounds.

Marie also lived with a man who routinely beat her and the children. I called protective services when I found open sores on Alice's back. After investigation, social services filed a complaint against the live-in boyfriend for beating the girls with a belt. After counseling, he reformed and stopped beating the children. Instead, he made them eat roaches. He also continued to abuse Marie, including throwing her in the dumpster because he said she was "garbage."

Alice never missed a day of school. Nor did her sister who was also in foster care with Marie. But Danielle was absent at least one day a week. The visiting teacher determined that Danielle stayed home to take care of Marie when her boyfriend beat her. Or she stayed home because she was afraid that

if she went to school, the boyfriend would kill her mother while she was away.

However, she never missed a day during the two weeks that I struggled to find thirty minute time slots to test her. She bounced to my room every morning and asked, "What time we gonna do it today?"

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**Danielle was a second grader referred because her reading was seriously delayed, and because she was disruptive in class.**

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The second day I tested her she said, "I gotta talk to you."

I mistakenly thought that Danielle wanted to delay my taking her back to her class, to prolong the attention garnered from having an adult all to herself. But Danielle wanted information. Why were we testing her? What would happen to all the questions she was answering? Who would "correct" the tests? She didn't stop asking questions until I had covered the eligibility process.

"Then, at that meetin', they'll put me in your class?" she asked.

"I don't think so, Danielle. My class is for kids who are mentally retarded." At that time, mentally retarded was the legal classification for children with mild handicaps.

"I know that!" she said. "Marie done whipped my butt for teasing Alice about being retarded."

I told her about the other possibilities if she qualified for services, including the class for children with learning disabilities, resource, etc. Each time I listed another option, she shook her head.

"Nope," she said. "I'm holding out for your class."

"Why?" I asked.

"'Cause the kids in your class can read," she said.

"I don't read so good. You know that."

When I told her that I was not magic, and that she

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**I realized that her skills were only marginally worse than the others reading with her.**

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could learn to read in another classroom if she would stop cutting the fool, she said, "Nope, don't think so. Alice reads better'n me and she retarded! In fact, she reads better'n anyone in my class. That's humblin'"

I promised to try to get her some help, but I also told her that I felt certain she wouldn't qualify for my class.

"I don't think you're retarded, Danielle."

"Of course I ain't retarded. What's that got to do with anything."

After I had completed testing, Danielle came to my room almost every morning until the eligibility meeting. "Can I be in your class yet?" she asked. "Or have they decided yet?" We began to mark off the days on my calendar, counting down to eligibility. Over the years, I had grown calluses over my pride, accepted the fact that parents considered my class the pariah class, learned not to gasp when moms or dads bemoaned the despised label. I had provided tissues for the tears and shoulders for the pain of hearing that they had a "retarded" child. I had refused to have my title printed in the paper because someone might read the article, connect me with one of my students, and tease them. After spending years counseling parents who struggled with the word "retarded," trying to help parents and students to accept the label, I was in awe of Danielle's straightforwardness born of her eagerness to learn to read. It was puzzling to comfort someone because she wanted to be retarded but wasn't!

My observation in the regular class confirmed Danielle's testing results, which showed that her phonics skills were nonexistent, her sight vocabulary was small, and that she had no strategies for decoding words unfamiliar to her. She gave up easily and often asked for help. She demonstrated the same decoding problems in the classroom. But then so did all the other students in her reading group. I realized that her skills were only margin-

ally worse than the others reading with her. Her behavior was worse. She was a clown, an instigator, and sometimes an aggressor, but her reading skills were not appreciably worse than the others. And she had not exaggerated when she claimed that my second grade students read better than her group in the regular class. They did!

With the exception of a student with many characteristics of autism, my students participated in a Direct Instruction program for reading, and they were learning. The students in the regular classroom participated in a phonics-based basal reading program, but the school system was fast moving toward the whole language approach. Danielle was lost, and she knew it.

The data presented at the eligibility meeting confirmed my suspicions. Danielle was delayed in all areas, had the IQ of a slow learner, and had adaptive

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**And she had not exaggerated when she claimed that my second grade students read better than her group in the regular class. They did!**

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behavior scores comparable to other children her age. She did not qualify for services in any of the self-contained classes in the system. After reviewing the data, and listening to Marie beg for help for Danielle, the committee found Danielle eligible for services as a resource student.

Marie wasn't sure how she was going to tell Danielle that she was not going to be a student in my class. "She's waitin' at home for me to tell her what you decided, and she's gonna be disappointed."

If truth be told, I was disappointed too. It's not often that I encounter a student as motivated as Danielle, as aware of her shortcomings, or as clear about how to rectify these deficiencies.

The next morning, she came to my room. "I know all about that meetin' yesterday," she said. "Guess you won't be comin' to pick me up any more," she sighed.

Before I could respond, she crawled into my lap, rested her head against me, and asked, "Do you reckon I'll ever learn to read?"



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# What Would You Expect?

P.J. Toburen

At the end of First Grade, Mikell was identified as a student with a learning disability in the area of Reading with secondary concerns in the area of written language. He exhibited many of the "classic" characteristics of a student with a learning disability; he was very active, easily distracted and impulsive. He had excellent verbal skills and his measured IQ was very high.

As an adopted child, Mikell was very much wanted. From the day he came home with them, his parents invested a lot of time and energy in reading with him, playing games with him and nurturing his growth.

The school urged his parents to see a doctor about medication for Mikell. They had good reason to resist the suggestion. Mikell's birth mother had been drug and alcohol addicted. His parents were concerned about the long lasting effects of his prenatal exposure to addictive substances and were very reluctant to introduce any medication unless it was vital. You can imagine how disappointed they were when, by the end of the first grade, Mikell had failed to learn to read.

During the middle of second grade, a terrible tragedy occurred. At age 43, Mikell's dad died of a massive heart attack. Mikell and his dad had been very close companions. The intensity of this loss for Mikell is hard to describe. In addition, Mikell's mom was torn apart by her sudden loss.

Mikell is now in third grade. It's been a year since his dad died. He has not been put on medication and the school has not initiated any interventions. If you were asked to guess, how would you expect him to be performing in school now?

I am very happy to tell you that on his last report card, Mikell received all A's. His current teacher has a reputation for being tough so I think it's likely that he earned those grades. She thinks Mikell should be tested again. She is relatively sure he would qualify for the gifted program.

What made this happy ending possible in a scenario that, in most cases, in most schools, would have yielded failure? To a large degree, I think Direct Instruction did! You see, I am Mikell's tutor. For the past year and a half, I have worked with Mikell for one-half hour per day. We did Reading Mastery, Fast Cycle and then, Reading Mastery III. Now we are working our way through Reasoning and Writing C and Spelling Mastery C. Mikell has become a life-long learner who is on task and motivated. Mikell's teacher says that he talks about me and he talks about his other friends. My favorite of his comments about me is that he thinks he'll keep coming to me until he goes to college because he's sure I'll still have something to teach him!

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# Evaluating the Effectiveness of Reading Recovery: A Critique

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There is current concern in many Western countries that literacy levels are falling, with unacceptably high proportions of 7-year-olds seemingly unable to read. A widely publicised and accepted solution to the problem of early reading failure has been the Reading Recovery Programme based on the work of Marie Clay. Following the program's widespread implementation in Clay's native New Zealand, it has also been enthusiastically adopted in parts of the USA, Canada, Australia and in the UK.

There are obvious dangers in the widespread use of a programme, however apparently conceptually sound, which has not received the benefits of stringent empirically based evaluations. This is not unusual for educational innovations, which are famous for their cycle of early enthusiasm, widespread dissemination, subsequent disappointment and eventual decline—the classic swing of the pendulum (Slavin, 1989). Until the Reading Recovery Programme has been shown, by methodically appropriate evaluations, to be both an effective and a cost-effective answer to early reading failure, its implementation should proceed with caution. The aim of this paper is to examine critically the evaluation studies completed to date.

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**Until the Reading Recovery Programme has been shown, by methodically appropriate evaluations, to be both an effective and a cost-effective answer to early reading failure, its implementation should proceed with caution.**

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## Reading Recovery

Reading Recovery is a preventative early intervention programme designed to accelerate the progress of young readers who have failed to profit from 12 months of reading instruction (Clay, 1987; 1991). It comprises a carefully designed set of interlocking principles and actions requiring the support of a school system to ensure and sustain quality results. To work effectively, Reading Recovery must achieve change along four dimensions:

1. Behavioural change on the part of the teachers;
2. child behavior change achieved by teaching;
3. organizational changes in schools achieved by teachers and administrators; and
4. social/political changes in financing by controlling authorities (Clay, 1985).

It is thus a systems-based intervention which differentiates it from other programmes designed to help children who have reading difficulties. The Programme offers intensive one-to-one instruction for those children identified by their teachers and a Diagnostic Survey Battery as being of the lowest achieving in their class groups following their first year in school. It aims to reduce reading failure by through early intervention and to accelerate the progress of at-risk children, bringing them up to the class average level within the shortest possible time. Reading Recovery aims to help children become independent learners by assisting them to acquire the self-improving, self-teaching or boot-strapping systems and strategies learned so effortlessly by their successful peers (Clay, 1985). By its focus on early intervention and strategy building, it is designed to enable children who have successfully

completed the Programmes to profit from ongoing classroom teaching without the need for future costly remediation.

During daily 30-minute individualised lessons with specially trained Reading Recovery teachers, selected at-risk children are tutored to help them develop the kinds of strategies good readers use. This approach, which does not require specific, costly materials, combines the use of reading and writing experiences, careful selection of reading material and interaction with a teacher who closely assesses and monitors progress. Reading Recovery teachers, typically selected from successful teachers of junior classes, are trained in systematic observation and analysis of reading/writing behaviours. Teacher development (Knowledge and skills) and, most particularly, problem-solving abilities are fostered through an apprenticeship/in-service training model. In Reading Recovery the teacher is expected to know the child's prior learning history in detail and to use this knowledge to design instruction for each child individually (Clay and Cazden, 1990).

Typical Reading Recovery lessons include seven activities, usually in the following order:

1. Re-reading of two or more familiar books.
2. Independent reading of the previous day's new book from which the teacher takes a running record or miscue analysis.
3. Letter identification.
4. Writing a story the child has composed which includes emphasis on hearing sounds in words (phonemic awareness component).
5. Re-assembling a cut-up story.
6. Introducing a new book.
7. Reading the new book.

Decisions regarding the exit of children from Reading Recovery are based upon attainment of a reading level appropriate to the class to which they are being returned, and/or reaching a reasonable degree of independence in reading, and/or a certain time in the Programme (usually a maximum of 20 weeks). Generally, an average of 8-10 children per year per Reading Recovery teacher will complete the Programme within this time span, while about 25%-30% are withdrawn if they fail to make the expected rate of progress. (For a fuller account of Reading Recovery see Clay, 1987; Clay and Cazden, 1990.)

### Evaluations of Reading Recovery

A number of evaluations of Reading Recovery have been undertaken in New Zealand (Clay, 1985;

Glynn, *et al.*, 1989), in Ohio, USA (Pinnell, *et al.*, 1988; Pollack, 1989), in Britain (Pluck, 1989), and in Australia (Wheeler, 1986; Geekie, 1988; Rowe, 1989). As it is argued (Clay, 1987) that the success of implementation of the Programme across different educational systems depends upon behavioural change on the part of the teachers and children and organisational change in schools, it is proposed to examine the completed evaluations with respect to these variables.

Reading Recovery was designed for implementation in New Zealand and its basic theoretical underpinnings are consonant with the reading instruction policy that operates in that country. For example, students in their first year of school in New Zealand receive a formal, carefully articulated programme of reading instruction with emphasis upon matching student reading level with appropriate text level. As a systems intervention, therefore, the Programme's chances of success in New Zealand are more pronounced than in other countries, where the interaction between the innovation and the host educational system may be less cohesive. The tenets of the Programme,

1. that children receive one year's formal teaching instruction prior to Programme entry;
2. that successfully discontinued students be returned to regular classrooms sensitive to the aims of the Programme; and
3. that Reading Recovery teachers act as a resource to both classroom teacher and Programme graduate,

are predicated upon a commonality between the early intervention programme and the reading programme operating in the regular class.

Despite this cohesion between the intervention programme and the educational philosophy operating in New Zealand, a recent qualitative case study analysis in two New Zealand schools has delineated considerable variability in the level of interdependence between schools and the Programme, with significant implications for the maintenance of skilled reading (Robinson, 1989). Robinson has also criticised Clay's own evaluation (Clay, 1985) for its focus on student outcomes rather than on the contextual variables so critical to the Programme's overall effectiveness. She states that, while some graduates of the Programme may have become independent readers, others remain "vulnerable to the contingencies, expectations and opportunities provided by the classroom teachers" (Robinson, 1989, p. 42) who respond differentially to the resource role of the Reading Recovery teacher.

Furthermore, there has also been criticism of the data pertaining to student outcomes in Clay's evaluation of Reading Recovery (Clay, 1985). Certainly, there appears to be no doubt that low progress students, exposed to an intensive individualized early intervention programme based on sound theoretical principles, make greater gains, from pre-test to post-test, on all Clay Diagnostic Tests than a reference group of higher achieving students receiving no individualized instruction. However, no information is provided about their progress on tests other than the Clay Battery in order to test for generalization of reading skills. In addition, the Reading Recovery group on whom Clay based her results included only those students who had been successfully discontinued from the Programme. It excluded the 25%-30% of children who failed to benefit and were withdrawn from the Reading Recovery Programme, thus possibly inflating the reported effectiveness of the intervention.

Another major criticism leveled at Clay's research design has concerned the failure to assign children randomly to experimental and control groups. While the experimental group contained those children who scored most poorly on the Diagnostic Tests, the reference group comprised a selection of the remaining low progress students in the same school population who had been administered the same test battery, but whose initial reading scores were higher. Nicholson (1989) questions the validity of Clay's inferences that progress on the part of the poorer readers could be explained necessarily by participation in Reading Recovery. It is possible, he claims, that without a randomly assigned control group, Clay is proceeding beyond the evidence. Many children who score poorly on early tests make accelerated progress even without intervention. Thus, it could be that the results of the Reading Recovery group were "due to error in the initial selection of children for intensive intervention" (Nicholson, 1989, p.5). Nicholson also questions the use of multiple *t*-tests in Clay's statistical analysis which is a less stringent procedure than the use of multivariate analysis and less appropriate when students are being compared over time on a number of correlated dependent variables.

The most recent evaluation of Reading Recovery conducted in New Zealand by Glynn, *et al.* (1989) also has student outcomes as a major focus. While the report included information on the organization and implementation of Reading Recovery in schools, it did not monitor changing teacher or school practices, variables critical to the long term effectiveness of the Programme and the development and the

maintenance of skilled reading. It did report, however, the level of effective communication between Reading Recovery teachers, executive staff and regular classroom teachers was extremely variable, a finding also noted by Robinson (1989) in her case study analysis. There were clear indications that there was little formal monitoring of discontinued students in the Reading Recovery schools examined. Consequently, Reading Recovery teaching practices will have only minimal impact upon regular class teachers until large numbers of Reading Recovery teachers are returned to the classroom as regular teachers. Thus, even in an educational system where school land intervention aims are most congruent, interdependence between Programme and school organization is not systematically formalised.

With respect to student outcomes, Glynn *et al.*'s (1989) evaluation has highlighted a number of conflicting issues which need too be addressed. Unlike the Clay (1985) evaluation, Glynn and his associates also compared Reading Recovery students and a comparison (though not a control) group on a measure of syntactic awareness, as well as on book levels. Post-test results indicated that there were immediate gains in book level favouring the Reading Recovery group but there was no difference between the Reading Recovery students and the other low progress group on the measure of syntactic awareness. Furthermore, maintenance tests using book levels on both groups 12 months after discontinuation from the Programme indicated non-significant differences between the Reading Recovery group and the other low progress readers. To quote the authors of the study: "the net gain which is attributed to Reading Recovery appears to be quite modest by a year or so after the discontinuation" (Glynn *et al.*, 1989, pp. 83-84).

Glynn *et al.* have offered an explanation of the 'wash-out' effect in terms of a discrepancy between tested reading book level and class reading group book level at discontinuation. These discrepancies were greater for the target children, suggesting that low motivation levels might explain the reduced benefits from Reading Recovery. However, a more fundamental explanation has been advanced by Tunmer (1990) and Chapman and Tunmer (1991). These authors maintain that the book level discrepancies between Glynn *et al.*'s Reading Recovery group and the comparison students were too slight to be either statistically or educationally significant. They argue that it is possible that the Reading Recovery Programme does not systematically address essential metalinguistic skills, such as phonological

awareness, phonological recoding and syntactic awareness, which are considered too directly associated with skilled fluent reading (Bradley & Bryant, 1985; Stanovich, 1986; Tunmer, *et al.*, 1988; Tunmer, 1990; Chapman & Tunmer, 1991). Indeed, when a modified Reading Recovery group received explicit code instruction based on the work of Bryant and Bradley (1985), the students in this group achieved discontinuation levels more quickly than students in a standard Reading Recovery group (Iversen & Tunmer, *in press*). Lack of systematic instruction in metalinguistic skills could possibly account more accurately for Glynn *et al.*'s failure to uncover any differences on syntactic awareness between Reading Recovery students and low progress comparison students immediately upon discontinuation. It is also possible that it has led to the lack of gain maintenance, as measured by reading book level, in their follow up data.

It could be that if explicit metalinguistic skill training were implemented systematically at an early stage in the Programme, those children currently 'withdrawn' from Reading Recovery, because of failure to progress, could also be 'recovered'. If such modifications resulted in a less intensive programme (see Iversen and Tunmer, *in press*) with a greater proportion of successful graduates, then the cost-effectiveness of this intervention would be so much greater.

In reply to Tunmer's earlier criticisms, Clay (1991) has argued that, in effect, the Reading Recovery Programme has achieved its stated aims by raising the reading levels of low progress children to those of the average band at an accelerated pace and then maintaining them at the level of their age peers. It must be remembered, however, that Glynn *et al.*'s comparison group did not comprise children of average reading ability. It consisted of children matched as closely as possible to the Reading Recovery group, but who did not gain admission to the Programme. Consequently, although their book level scores were initially higher than those of the target children, they could still be regarded as low rather than average readers. Furthermore, the Reading Recovery group used for both short-term and long-term comparisons in Glynn *et al.*'s study would have had the very lowest progress readers removed, as those children who fail to benefit from the intervention are withdrawn from the Programme. This factor must always be kept in mind when making group comparisons. Clay, herself, has also pointed out the lack of equivalence between the two groups in the study, which invalidate the nature of the comparison (Clay, 1991). Unless students are randomly assigned to

either a Reading Recovery Programme or to an alternative intervention, any evaluation will suffer from this lack of internal validity.

This problem of randomisation has been addressed by the Ohio State group of evaluators in their second longitudinal study (Pinnell, *et al.*, 1988). They randomly assigned the lowest 20% of readers in 12 schools to either a Reading Recovery Programme ( $N=136$ ) or to an alternative control condition ( $N=51$ ). While the Reading Recovery Programme followed the traditional format of 30 minutes daily individualised tuition, the alternative compensatory programme involved small groups of 10-12 students with some individual instruction of unspecified duration.

The results of this evaluation, using both successfully and unsuccessfully discontinued students, indicated that those children in the Reading Recovery Programme scored significantly higher than the control group on all Clay Diagnostic measures. The experimental group also made greater gains on a standardised test of basic skills, although the numbers of students in the comparison programme, in this test, had decreased by almost 50% due to repeated absence. While these results certainly indicate the efficacy of Reading Recovery for low progress students, they must still be viewed with some caution. The two groups of students were not exposed to equivalent conditions, as one programme was completely individualised, while the other involved predominantly small group instruction. In addition, half of the children in the Reading Recovery Programme were from regular classrooms taught by Reading Recovery teachers, where it must be assumed that congruence between classroom programme and intervention was at its greatest. Although the evaluators stated that there was no difference between the students in Reading Recovery from Reading Recovery classrooms and those from traditional classrooms, there is no indication as to when "the rather elaborate design to detect any such possible impact" was carried out (Pinnell *et al.*, 1988, p. 28). Unfortunately, from this study, it is difficult to delineate the characteristics of the Reading Recovery Programme that constitute its efficacy. Was its success due to the components included in the Reading Recovery intervention *per se*, to the greater congruence between intervention and regular classroom programme or to a combination of these elements? Until an alternative individualised programme is compared with Reading Recovery, with random allocation of low progress children to each programme, this fundamental question cannot be satisfactorily answered.

As one of the essential features of the Reading Recovery Programme is its claimed ability to transform early failing readers into skilled independent readers, the longitudinal results of the Ohio group are particularly interesting. When the data are presented in raw unit differences in terms of book levels, they consistently favour the experimental over the control group in both first year and second year follow up (Wasik & Slavin, 1990). However, when the data are converted to effect sizes (Wasik & Slavin, 1990), there is a progressive diminution until, by the end of the second year, the differences between the two groups are almost negligible. Wasik and Slavin explain this paradox in terms of the yearly increases in standard deviation size of the text reading level measure which makes the same raw difference a smaller percentage of the standard deviation. Thus, the actual size of the difference remains a static (assuming the measure is an equal interval scale), but the importance of the difference is reduced. For example, a difference of 3 months on a standardised test is very much more significant at the end of the first grade than at the end of the fourth grade. This negligible effect size is an extremely important reservation, as, given the possibility that design factors also advantaged the Reading Recovery group (seeing as the lowest achieving children were withdrawn from the Programme), the cost-benefits of the Programme need to be further investigated. The cost per child of Reading Recovery was significantly greater than the cost of any alternative compensatory programme used in Ohio. Thus, if, in effect, longitudinal results remain problematic in terms of real group differences while cost-effectiveness remains high, conclusions about its efficacy must also remain somewhat qualified. When the evaluation in Ohio was concluded, Bermel (1987) stated that:

due to the comparative (sic) high cost for the Program, funding should remain at the current level until a higher percentage of pupils can be discontinued from the Program, not be retained in grade, and not need further compensatory education. (p. 21)

With respect to systemic and organisational change, the Ohio evaluation tended to highlight the actual implementation of the Reading Recovery Programme, rather than the effect that the Reading Recovery implementation had on the individual school system. Thus, it was not possible to determine the way in which the host educational system (in Columbus, Ohio) interacted with the Programme. Clay, herself (1987), indicated that each Reading

Recovery teacher tended to adjust the latter part of the Reading Recovery instruction to complement the basal text approach of most regular teachers in Columbus. Thus, it could be anticipated that slightly different programmes operated for children going back to Reading Recovery regular classrooms than for those who were not, and further monitoring procedures could also have varied. An absence of such qualitative data from the study is regrettable in the light of such a complex and costly intervention as Reading Recovery.

Another small-scale evaluation documenting the implementation of Reading Recovery outside of New Zealand is provided by Pluck (1989) in one British infants school. The progress of four students receiving the Reading Recovery Programme was compared with that of four higher achieving students who comprised a non-randomised comparison group undertaking an alternative unspecified programme, which may not have included a daily individualised session. While obviously no test of statistical significance could be applied, there is no doubt that the experimental group scored appreciably higher on all Clay Diagnostic tests, and, indeed, reached average level of performance on these measures. No other tests were administered to the students, no longitudinal data for maintenance of skills were presented, no variable apart from students outcomes on Clay measures was addressed in the report and no details of the alternative programme were provided.

The next evaluation study to be reviewed is that conducted by Wheeler (1986) of the field trials of Reading Recovery in Central Victoria, Australia. The form of the evaluation closely paralleled that of Clay's (1985) and also documented the effective progress of the lowest achievers of the age cohort who were admitted into the Reading Recovery Programme and discontinued successfully. On completion of the Programme, these students achieved levels on Clay Diagnostic test similar to those of an average comparison group not assigned to any intervention programme. However, the experimental group excluded about 25% of those students initially assigned to Reading Recovery who failed to achieve satisfactorily despite at least 18 weeks in the programme.

In his evaluation report, the author stated that the absence in Victoria schools of a uniform approach to early literacy, as occurs in New Zealand, did not appear to have influenced the effectiveness of the Programme. However, it is clear that children in Victoria had generally lower book level skills on entry to the Programme, compared with those in New Zealand, and were returned to their class-

rooms at a lower book level than was typical in either New Zealand or Columbus, Ohio. This was no doubt due to the lower average levels that operated in Victoria regular classrooms into which the Reading Recovery students were returned. As these lower discontinuation levels might affect the continued independence of successful Reading Recovery graduates in Victoria, a longitudinal study to document the maintenance of skilled fluent reading would certainly be worth undertaking. However, the report did not address this issue nor any systemic or organisational change that the implementation of Reading Recovery in Victoria may have engendered.

A recent Victorian Report (Rowe, 1989) has examined the long-term effectiveness of Reading Recovery in three Victorian educational regions with 147 students from Year 1 to Year 5. While the results indicate that students' achievement in reading was not significantly influenced by their teachers' exposure to Literacy Programmes, the variation of Reading Recovery students' test and profile scores was smaller than that of their non-Reading Recovery peers both in schools where Reading Recovery programmes were instituted and in schools not using the Programme. However, these results must, once again, be viewed with caution. There is no doubt that the student participating in the Reading Recovery Programme appeared to be doing markedly better on reading achievement than the lowest 25% of readers who did not receive Reading Recovery. Indeed, this was particularly evident by Year 5 (10-year-olds), suggesting that the initial early intervention was successful in transforming the original low progress students into independent readers. However, lack of random allocation, possible error in original selection of students and the operation of a regression effect all make direct comparisons somewhat dubious. Furthermore, the fact that 25%-30% of the initial Reading Recovery group may have been withdrawn because of poor progress and transferred to the comparison group may also affect the variability at the lower end of the continuum. Finally, by Year 5, the researchers had accessed only 24 of the original 124 students who commenced the Reading Recovery Programme in 1984. It is possible that these students, whose schooling history appeared to be relatively stable, were not necessarily representative of the original cohort of low progress readers. It is also interesting to note that the variability of scores for the comparison peers in Reading Recovery schools and for those student whose schools did not participate in the Programme was extremely similar, suggesting little systemic flow-over effect from the implementation of Reading Recovery at school level.

### Limitations of Testing Measures Used in Previous Evaluations

All the evaluations discussed so far have generally used the Clay Diagnostic measures for pre- and post-test comparisons and book level scores for maintenance of effects. As Wasik and Slavin (1990) have noted, these measures were designed by the developers of the Programme and, therefore, may be biased in favour of the kinds of skills taught in the Programme. This is particularly probable at the low levels of the Text Reading level measure, where assessments focus on concepts about print, using pictures and patterns to assess story content and other skills specifically taught in Reading Recovery. There could also be an additional problem in using text level disparity between Reading Recovery and comparison groups as evidence of the effectiveness of the Reading Recovery Programme. Data reported by Glynn *et al.* (1989) indicated that the relationship between amount of instruction and reading performance was not linear with respect to text level. Over a given time period, the average increase in text level was greater for the lower level texts than for the higher level texts (Iversen & Tunmer, in press). Thus, the greater gains recorded for the Reading Recovery students, who were the poorest readers and accessed the lower level texts, may be spurious. While the Ohio evaluations (Pinnell *et al.*, 1988) did use a standardised measure to discriminate between control and experimental groups at the end of the first grade, book level measures at were only used to assess maintenance effects at the end of second and third grade. The superiority of students exposed to Reading Recovery over low progress students receiving no individualised tuition has been well documented on book level measures at discontinuation from Reading Recovery. Caveats have been raised, however, about the validity of both short- and long-term effects as measured by book level, and it is imperative that other standardised and criterion-referenced tests be used to compare groups both at discontinuation and 12 months after graduation from the Programme.

In their study, Glynn *et al.* included, in their assessment battery, a criterion-referenced Cloze test measuring syntactic awareness in order to examine the efficacy of Reading Recovery in its teaching of metalinguistic skills. The researchers reported that, on discontinuation, there was no difference between control and experimental groups on this particular measure—a disappointing result as Reading Recovery aims to provide struggling student with divers strategies to extract meaning from print. The failure of Reading Recovery students to record significantly higher scores on this measure has been tentatively

explained by the fact that, while the Programme addresses many key components of early reading instruction, it does not target, through systematic instruction, the metalinguistic skills of phonological awareness, phonological recoding and syntactic awareness, which are considered to be directly associated with skilled fluent reading (Stanovich, 1986; Tunmer *et al.*, 1988; Bryant *et al.*, 1989; Tunmer, 1990), as previously noted.

One metalinguistic component—phonological awareness—is certainly addressed in the Programme through the use of the Elkonin technique in spelling sequences. Research has shown, however, that children initially read and spell words in quite different way (Bradley & Bryant, 1979; Bryant & Bradley, 1980). Furthermore, Thompson *et al.* (1991), as cited by Iversen and Tunmer (*in press*), found that knowledge of phoneme-to-letter correspondence acquired through spelling did not automatically transfer as a source of knowledge for letter-to-phoneme correspondence in reading. The problem of generalisation for children with learning difficulties has already been well documented (Ward & Gow, 1982; Swanson, 1988; 1989, cited in Iversen and Tunmer, *in press*). Consequently, while the phonemic awareness component of Reading Recovery is certainly necessary, it may not be sufficient without explicit instruction for low progress students to acquire mastery over the letter-to-phoneme correspondence required for reading.

"Phonemic awareness, on its own, does not guarantee that a child will learn to read" (Robinson, 1989, p. 96). It has been shown to be an essential precursor, but it must also be accompanied by instruction in phonological recoding, which enables low progress children to acquire the graphophonic correspondence necessary to decipher unfamiliar words (Bradley & Bryant, 1985; Stanovich, 1986; Tunmer, *et al.*, 1988; Tunmer, 1990). In order to develop this ability, children at risk of reading failure should not only receive systematic phonic instruction but should also be exposed to texts which contain words with regular, decodable spelling patterns (Adams, 1990). The skill of phonological recoding is best measured by presenting children with a list of pseudo-words, and success of pseudo-word decoding has been found by Adams (1990) to be one of the best predictors of skilled fluent reading in children. It must be remembered that systematic phonic instruction is not a component of Reading Recovery programmes, texts are not selected for their inclusion of regular, decodable spelling patterns and a test of pseudo-words is not part of the Clay Diagnostic Battery. Thus, while Reading Recovery stresses the importance of using all sources of information available to

access meaningful text, it may not provide enough systematic instruction in the metalinguistic skills of phonological awareness, phonological recoding and syntactic awareness for students to acquire these processes. This is possibly why Glynn *et al.* (1989) observed no differences between Reading Recovery students and a comparison group on a test of syntactic awareness, and why these authors and others (Wasik & Slavin, 1990) have failed to find maintenance effects in their longitudinal studies.

### Concluding Comments

It is important that further evaluations are performed which address some of the conceptual and methodological weakness already highlighted in this review. In the first place, it is critical to assign students randomly to either Reading Recovery or to an alternative (ideally individualised) programme to establish equivalence of subjects. Secondly, in order to answer the criticisms of Wasik and Slavin (1990) and Chapman and Tunmer (1991), standardised and criterion-referenced tests, which also focus on metalinguistic skills should be used as well as Clay Diagnostic Tests at discontinuation and at follow up. This is essential, as there is also some evidence that text level scores are not an entirely reliable measure. Robinson (1989) found inconsistencies between text level scores for some students obtained at discontinuation by Reading Recovery teachers and by their class teachers upon return to the regular classroom. Thirdly, the problem of withdrawn students and those students not successfully discontinued must be addressed when examining the overall efficiency and cost-effectiveness of the Reading Recovery Programme, as these students represent a significant minority of children entering the Programme. Fourthly, in response to Clay's own tenets, the effects of the Programme on the educational system in general and the host school in particular should also be investigated.

An evaluation of Reading Recovery in New South Wales primary schools, currently being undertaken by the authors for the New South Wales Department of School Education, has attempted to address some of these methodological issues. Twelve low-progress students, in each of 10 schools studied, have been randomly allocated to either Reading Recovery or to the resource assistance typically provided to Year 1 at-risk students. Furthermore, all students, irrespective of group assignment, have been administered the Clay Battery of Tests and an additional battery which includes norm and criterion-referenced tests of both reading achievement and metalinguistic skills. The evaluation has, however, other limitations which we hope can still be



redressed at some future time. In the first place, Reading Recovery has not been compared with an alternative individualised programme, so the results can only demonstrate its efficacy in terms of the remediation students typically receive in their schools, which is rarely individual or daily and not always systematic. Thus, no information can be provided on the functional components of the Programme, nor whether another individualised programme with a different mix of activities may be equally effective. Secondly, it has not been possible to look at cost-effectiveness. This could be achieved by examining another individualised programme conducted by in-school staff and trained volunteers which accessed a greater number of students as equally effectively at a lower cost. However, the maintenance of the skills acquired in the Programme is being currently monitored by a longitudinal follow up, so that it will now be possible to see whether the implementation of Reading Recovery for low progress readers results in the development of independent skilled reading comparable with that of regular peers and superior to that of a control low progress group. A report of this evaluation study is currently being prepared for publication.

In summary, the research evidence reported so far suggests that there is little doubt that students who have been exposed to Reading Recovery make impressive short-term gains in reading words in context relative to comparison groups who have not had the benefits of daily, individualised tutoring. However, it is not possible, from the evaluations so far, to establish whether it is the conceptual model/programme content or simply the individualised instruction which is associated with short-term reading gains after exposure to Reading Recovery. Consequently, it is important that further controlled evaluations of Reading Recovery are performed, addressing the twin issues of effectiveness and cost-effectiveness, and which compare both short-term and long-term effects of an alternative early intervention reading programme, predicated upon a different conceptual model, with the Reading Recovery Programme. Such evaluations would highlight whether the components of the Reading Recovery Programme are more effective than the components of a less costly alternative individualised intervention. While the twin issues of programme effectiveness and cost-effectiveness remain unresolved, the implementation of Reading Recovery should, perhaps, proceed with greater caution.

## References

- Adams, M.J. (1990) *Beginning to Read: thinking and learning about print* (Cambridge, MA, MIT press).
- Bermel, S. (1987) *Final Evaluation Report: compensatory language experiences and Reading Recovery Program, 1985-1986* (Columbus, Ohio, Columbus Public Schools).
- Bradley, L. & Bryant, P. E. (1979) The independence of reading and spelling in backward and normal readers, *Developmental Medicine and Child Neurology*, 21, pp. 504-514.
- Bradley, L. & Bryant, P. E. (1985) *Rhyme and Reason in Reading and Spelling* (Ann Arbor, University of Michigan Press).
- Bryant, P. E. & Bradley, L. (1980) Why children sometimes write words which they cannot read, in: U. Firth (Ed.) *Cognitive Processes in Spelling*, pp. 335-370 (London, Academic Press).
- Bryant, P. E. & Bradley, L. (1985) *Children's Reading Problems* (Oxford, Blackwell).
- Bryant, P. E., Bradley, L., Maclean, M. & Crossland, J. (1989) Nursery rhymes, phonological skills and reading, *Journal of Child Language*, 16, pp. 407-428.
- Chapman, J.W. & Tunmer, W.E. (1991) Recovering Reading Recovery, *Australian and New Zealand Journal of Development Disabilities*, 17, pp. 59-71.
- Clay, M.M. (1985) *The Early Detection of Reading Difficulties*, 3rd Edn (Auckland, Heinemann).
- Clay, M.M. (1987) Implementing Reading Recovery: systemic adaptations to an educational innovation, *New Zealand Journal of Educational Studies*, 22, pp. 35-58.
- Clay, M.M. (1991) Syntactic awareness and Reading Recovery: a response to Tunmer, *New Zealand Journal of Educational Studies*, 26, pp. 87-91.
- Clay, M.M. & Cazden, C.B. (1990) A Vygotskian interpretation of 'Reading Recovery', in: L.C. Morl (Ed.) *Vygotsky and Education: instructional implications and applications of socio-historical education* (Cambridge, UK and New York, Cambridge University Press).
- Geekie, P. (1988) *Evaluation Report on the Reading Recovery Field Trial in Central Victoria, 1984* (University of Wollongong, NSW, Centre for Studies in Literacy, Faculty of Education).
- Glynn, T., Bethune, N., Crooks, T., Ballard, K., & Smith, J. (1992) Reading Recovery in context: implementation and outcome, *Educational Psychology*, 12 (384), pp. 249-261.
- Glynn, T., Crooks, T., Bethune, N., Ballard, K., & Smith, J. (1989) *Reading Recovery in Context* (Wellington, New Zealand Department of Education).
- Iversen, J.A. & Tunmer, W.E. (in press) Phonological processing skills and the reading recovery program, *Journal of Educational Psychology*.
- Nicholson, T. (1989) A comment of 'Reading Recovery', *New Zealand Journal of Educational Studies*, 24, pp. 95-97.

- Pinnell, G.S., DeFord, E.E. & Lyons, C.A. (1988) *Reading Recovery: early intervention for at-risk first grade readers* (Arlington, VA, Educational Research Service).
- Pluck, M. (1989) Reading Recovery in a British infant school, *Educational Psychology*, 9, pp. 347-358.
- Pollack, J.S. (1989) *Final Evaluation Report. Compensatory Language Experiences and Reading Clear-Reading Recovery Program* (Columbus, OH, Columbus Ohio Public Schools' Department of Program Evaluation).
- Robinson, V. (1989) Some limitations of systemic adaptation: the implementation of Reading Recovery, *New Zealand Journal of Educational Studies*, 24, pp. 35-45.
- Rowe, K.J. (1989) 100 Schools Project. Summary Report of Second Stage Results. (Melbourne, Australia, School Program Division, Ministry of Education).
- Slavin, R.E. (1989) Pet and the pendulum: faddism in education and how to stop it, *Delta Kappan*, 70(10), pp. 752-758.
- Stanovich, K.E. (1986) Matthew effects in reading: some consequences of individual differences in the acquisition of literacy, *Reading Research Quarterly*, 21, pp. 360-406.
- Tunmer, W.E. (1990) The role of language prediction skills in beginning reading, *New Zealand Journal of Educational Studies*, 25, pp. 95-114.
- Tunmer, W.E., Herriman, M.L., & Nesdale, A.R. (1988) Metalinguistic abilities and beginning reading, *Reading Research Quarterly*, 23, pp. 134-158.
- Ward, J., and Gow, L. (1982) Programming generalisation: a central problem area in educational psychology, *Educational Psychology*, 2, pp. 231-248.
- Wasik, B.A. & Slavin, R.E. (1990) Preventing Early Reading Failure with One-to-One Tutoring: a best-evidence synthesis (Johns Hopkins University, Baltimore, Centre for Research on Effective Schooling for Disadvantaged Students).
- Wheeler, H.G. (1986) *Reading Recovery: Central Field Trials, 1984* (Bendigo, Bendigo College of Advanced Education).

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**LIST OF DEMONSTRATION SITES:** We wish to maintain an on-going list of school sites with exemplary implementations and impressive student outcomes. Submit the name of the exemplary school or classrooms, the names of the programs being implemented, and contact information so that visitations may be arranged.

**TIPS FOR TEACHERS:** Practical, short products that a teacher can copy and use immediately. This might be advice for solving a specific but pervasive problem, a data-keeping form, a single format that would successfully teach something meaningful and impress teachers with the effectiveness and cleverness of Direct Instruction.

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## MANUSCRIPT PREPARATION

Authors should prepare manuscripts according to the third revised edition of the *Publication Manual of the American Psychological Association*, published in 1983. Copies may be ordered from: Order Department  
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1200 Seventh St., N.W.  
Washington, DC 20036

Send an electronic copy, if possible, with a hardcopy of the manuscript. Indicate the name of the word-processing program you use. Save drawings and figures in separate files. Electronic copy should replace text that is underlined according to the APA format, with italic text.

**Illustrations and Figures:** Please send drawings or figures in a camera-ready form, even though you may also include them in electronic form.

Completed manuscripts should be sent to:

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Editor, *Effective School Practices*

PO Box 10252

Eugene, OR 97440

Acknowledgement of receipt of the manuscript will be sent by mail. Articles are initially screened by the editor for content appropriateness. Then sent out for review by peers in the field. These reviewers may recommend acceptance as is, revision without further review, revision with a subsequent review, or rejection. The author is usually notified about the status of the article within a 6- to 8-week period. If the article is published, the author will receive five complimentary copies of the issue in which his or her article appears.

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## Recommended Resources

**School's Out: The Catastrophe in Public Education and What We Can Do About It** (1993) by Andrew Nikiforuk.  
ISBN: 0-921912-48-X  
Price: \$19.95 from Macfarlane Walter & Ross  
37A Hazelton Avenue  
Toronto, CA M5R 2E3  
Ask for it at your local bookstore.

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**Beginning to Read: Thinking and Learning About Print** (1990) by Marilyn Jager Adams (A summary by the Center on Reading).  
Price: \$7.50  
Mail orders to: Center for the Study of Reading  
University of Illinois  
51 Gerty Cr.  
Champaign, IL 61820

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**Direct Instruction Reading** (Revised, 1990)  
by Douglas Carnine, Jerry Silbert, & Ed Kameenui.  
Price: \$40.00  
Order from: MacMillan Publishing  
1-800-257-5755  
ISBN: 0-675-21014-3

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**Antisocial Behavior in Schools: Strategies and Best Practices** (1995) by Hill Walker, Geoff Colvin, & Elizabeth Ramsey.  
Price: \$28.70  
Order from: Brooks/Cole Publishing Co.  
1-408-373-0728 (ext 137)  
Fax: 1-408-375-6414  
Email:  
adrienne\_carter@brookscole.com  
(Complimentary copies sent for review for college course. Send request on letterhead.)

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**Failing Grades (Video) and Annotated Bibliography** (1993) featuring Joe Freedman, M.D. & Mark Holmes, Ph.D.  
Price: \$17.95  
Order from: Society for Advancing Research  
c/o VICOM Limited  
11603-165 Street  
Edmonton, Alberta  
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**If Learning Is So Natural, Why Am I Going To School?** (1994) by Andrew Nikiforuk.  
Price: \$16.99 from Penguin  
ISBN: 0-14-02.4264-3  
Ask for it at your local bookstore.

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**Becoming a Nation of Readers** (1985)  
The Report of the Commission on Reading.  
Price: \$7.50  
Mail orders to: Center for the Study of Reading  
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51 Gerty Cr.  
Champaign, IL 61820

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**Direct Instruction Mathematics** (Revised, 1990) by Jerry Silbert, Douglas Carnine, & Marcy Stein.  
Price: \$40.00  
Order from: MacMillan Publishing  
1-800-257-5755  
ISBN: 0-675-21208-1

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**Interventions for Achievement and Behavior Problems** (1991) by 74 contributors, edited by Gary Stoner, Mark Shinn, & Hill Walker.  
Price: \$52.00  
Order from:  
National Association of School Psychologists  
8455 Colesville Road, Suite 1000  
Silver Spring, MD  
ISBN: 0-932955-15-0

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**Higher Order Thinking: Designing Curriculum for Mainstreamed Students** (1992) edited by Douglas Carnine and Edward J. Kameenui.  
Price: \$24.00 (prepaid orders postage-free)  
Order #5199 from: PRO-ED  
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