An Analysis of *Rx for Discovery Reading*®
for Elementary Students Below Grade Level in Reading

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"Reading is the fundamental skill upon which all formal education depends. Research now shows that a child who does [not] learn the reading basics early is unlikely to learn them at all. Any child who does [not] learn to read early and well will not easily master other skills and knowledge, and is unlikely to ever flourish in school or in life" (Moats, 1999, p. 5). Approximately twenty percent of students in elementary schools nationwide have significant struggles in learning to read; another twenty percent lack the ability to read fluently enough to be able to engage in reading independently. Twenty-five percent of the adult population in America lacks the basic literacy skills that are required to succeed in a typical job (Moats, 1999). The question becomes: "What is the best way to teach this ability to construct meaning from the written text?"

In the history of American education, reading instruction has varied. With the pendulum swinging between explicit teaching of phonics to using whole language exclusively, there are millions of children who traversed through their academic careers continuing to struggle with the acquisition of efficient reading ability (Cowen, 2003, p. vii).

In 1997, Congress instructed the National Institute of Child Health and Human Development to convene a national panel of reading experts (National Institute of Child Health and Human Development [NICHHD], 2000). Their task was to "assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read" (NICHHD, 2000, p. 1-1).

The National Reading Panel (NRP) showed that there are five specific areas of reading instruction that impact teaching children to read. Instruction in phonemic awareness, phonics, fluency, vocabulary and comprehension was shown to be the most effective and complete program of reading education (NICHHD, 2000).

Background of the Study

Rx for Discovery Reading® is a program developed by the National Institute for Learning Development that includes each specific area of reading instruction delineated by the NRP. The program was initiated as a stream-lined intervention for small group implementation for students below grade level in reading. For the study, the focus was on phonemic awareness, phonics, and fluency, lower-level skills of reading that impact the student's reading deficits. The program includes *The Blue Book Method, Sounds of Speech*, and *Sounds of Reading*.

Problem Statement

Because this is a new intervention that has not been previously studied, this research project sought to answer the following question: What is the effect of the *Rx for Discovery Reading* program on the reading abilities of second, third, fourth, and fifth graders who were below grade level in reading?

Professional Significance of the Study

When the NRP was initially established, the task was to find why so many students' "educational careers are imperiled because they do not read well enough to insure understanding" (Snow, Burns, & Griffin, 1998, p. 1). When reading instruction is effective, it is built on a foundation of many factors. Although reading's main purpose is obtaining meaning from print, understanding the alphabetic code is foundational. Students must develop an understanding of the sound/symbol concept as well as have practice with a variety of texts to develop fluency. Background knowledge, including vocabulary acquisition, helps form meaning and interest in written text. Procedures for monitoring comprehension must be taught. Interest and motivation in reading also need to be developed (Snow, et al., 1998; NICHHD, 2000). Each of these areas is an integral part of *Rx for Discovery Reading*.

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Phonological Processing:

Phonological awareness is the broad area of understanding the sound/symbol relationships of the alphabetic code. Phonological awareness is the ability to generate rhymes, identify and work with syllables, and identify and work with onsets and rimes in syllables (Armbruster & Osborn, 2001).

Phonemic awareness is the more specific end of the phonological awareness spectrum. Phonemic awareness provides a foundation for learning to read and spell (Gillingham & Stillman, 1997). At this level, the student is able to focus on and manipulate individual sounds involving identification, isolation, segmentation, deletion, addition, substitution, categorization, and blending to create new words. (Armbruster et al., 2001). "Phonemic awareness can be developed through systematic practice in categorizing words on the basis of common beginning, middle, and end sounds" (Pressley, 1998, p. 98). The NRP found that phonemic awareness can be taught and learned in a relatively short amount of time (NICHHD, 2000; International Reading Association [IRA], 2002). After participating in a program of intense phonemic awareness instruction that is purposeful and deliberate for eleven to fifteen hours, a student may have significant gains in phonological processing (IRA, 2002; Yopp & Yopp, 2000). Phonemic awareness instruction is more effective when it focuses on one to two types of phoneme manipulation. It is also more beneficial when used in a small group setting in which children benefit from listening to others in the group and receiving feedback from the instructor (Armbruster, et al., 2001; NICHHD, 2000; Mathes, Denton, Fletcher, Anthony, Francis, & Shatschneider, 2005).

Fluency:

A fluent reader is one who reads with prosody, focusing on the meaning of the language and has developed automaticity in processing the form of the language (Snow, et al., 1998; IRA, 2002). These are considered the central elements of reading fluency (Kuhn & Stahl, 2000). When a student continues to struggle with decoding the language, the student exhibits slow, choppy reading, depending on decoding skills to decipher words. Most of the student's cognitive abilities are spent processing the form of the language. Consequently, fluency cannot be established and comprehension of the material is inhibited (Snow, et al., 1998; NICHHD, 2000; Armbruster, et al., 2001; Samuels, 2002; Pikulski & Chard, 2005).

Fluency instruction for struggling readers needs to include a variety of strategies. These strategies include repeated and monitored oral reading, which improves fluency and overall reading achievement (Armbruster, et al., 2001, p. 24; NICHHD, 2000; Pikulski & Chard, 2005). Assisted reading (Neurological Impress Method) or reading while listening allows students to hear and practice fluent reading, practicing until they can read the text fluently with prosody (Rasinski, 2006; Pikulski & Chard, 2005; Osborn & Lehr, 2003). Increased amount of reading is important because as words are encountered repeatedly, improvement in word recognition, speed, ease of reading and comprehension is developed (Samuels, 2002, p. 174; Pikulski & Chard, 2005). Continued practice reading "sight words" so that automaticity is developed is also an important strategy. The "sight word" variable is strongly related to text reading rate (Torgesen, et al., 2006; Pikulski & Chard, 2005).

Repeated Oral Reading:

Repeated oral reading is a strategy in which students read and reread a selection of text many times to improve reading fluency. Improvement is developed in prosody, word recognition accuracy and reading speed (Samuels, 2002). "Through repeated readings, even dysfluent readers are more able to capture the prosodic and syntactic essence of the text, thus improving the surface-level processing of the passage as well as text comprehension" (Rasinski, 2006, p. 14). "The greater support given to readers through repeated readings of instructional text in various venues and with various procedures, children are able to learn from material that they initially read with significant difficulty" (Stahl & Heubach, 2005).

Significant growth in reading level and reading rate has been found when students read repeated readings of phonics, sight phrases, and oral reading of text selections for as little as five minutes at a time (Mercer, Campbell, Miller, Mercer, & Lane, 2000; Dowhower, 1987). It is more effective when the succession of readings have overlapping words, developing reading speed as students gain recognition and automaticity decoding familiar words (Rashotte & Torgesen, 1985). "Each passage is read only four times, because research by O'Shea, Sindelar, & O'Shea (1985) has shown that most of the gains in reading speed, word recognition, error reduction, and expression in oral reading are acquired by the fourth reading" (Samuels, 2002, p. 178).

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Neurological Impress Method:
The Neurological Impress Method is used to improve prosody. The instructor reads aloud in unison with the student (Heckelman, 1969). It is one of the easiest and most cost-effective methods of developing fluency. The teacher positively reinforces the student's reading throughout the exercise. Students participating in this method for as few as three to seven hours over a few weeks made significant gains in reading fluency (Flood, Lapp, & Fisher, 2005; Rasinski & Hoffman, 2003; McAllister, 1989).

Sight Words:
Direct instruction of sight words can impact student reading rate and fluency. Skilled readers develop a large volume of sight words. Teaching the words directly with immediate feedback aids students in the acquisition and retention of words. By developing a sight word vocabulary, a student reads more fluently (Tucker, 1989; Singh & Singh, 1988; Frantantoni, 1999).

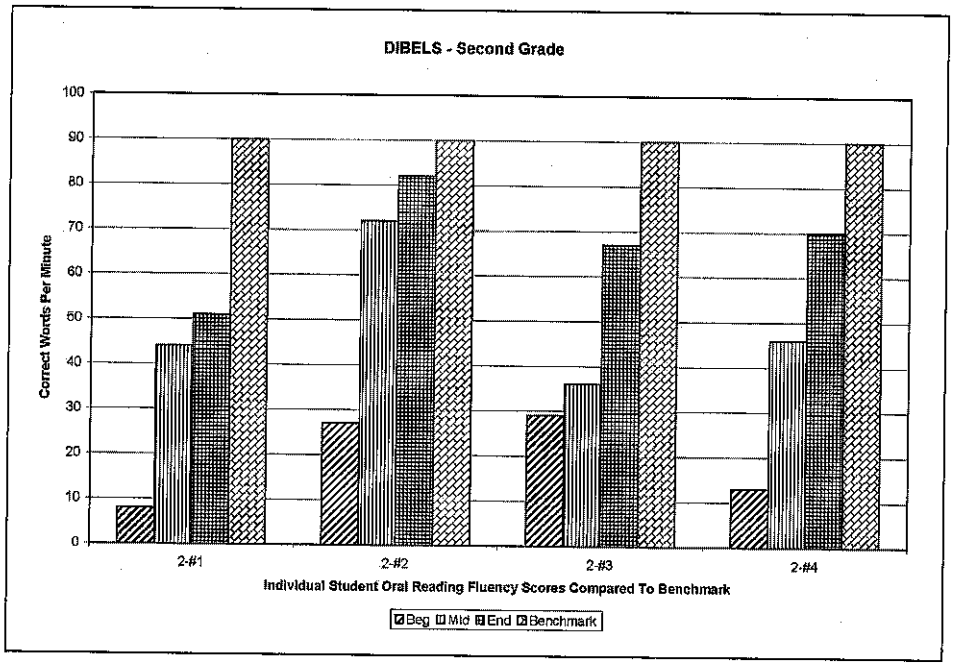
Small Group Instruction:
Small group instruction is an effective model in learning to read.. Children benefit from being able to listen to the other students' responses with feedback from the teacher (Armbruster & Osborn, 2001). "Struggling readers need more time in small groups in which instruction is targeted to their level of competence" (Walpole, Justice, & Invernizzi, 2004, p. 279). By making task demands match with student competence, small group instruction promotes more effective student engagement, affording more student success (Walpole, et al., p. 279).

Overview of Methodology of the Study

Subjects:
The twenty-nine second- through fifth-grade subjects in this field test attended private parochial schools in a variety of areas in the United States and Canada. They represented Caucasian, African-American and Latin ethnicity. The criterion for placement was achievement below grade level in reading, based on the annual standardized test scores. Each educational therapist worked with a small group of three to four students.

Instruments:
The field test was a quasi-experimental study using pre- and post-test standard scores. The Kaufman Test of Educational Achievement, Second Edition (KTEA-II) standard reading battery and supplemental reading subtests ascertained the current levels in letter/word recognition, nonsense word decoding, phonological awareness, word recognition fluency, and decoding fluency. Also included was the Gray Oral Reading Test (GORT) to ascertain oral reading proficiency. The Dynamic Indicators of Basic Early Literacy Skill (DIBELS), curriculum-based measures, was administered three separate times. DIBELS includes a set of measures that are standardized and individually administered for assessing early literacy development.

Procedures:
Prior to the beginning of the new school year, the educational therapists screened students in order to identify subjects for participation. The program was implemented throughout the school year. The subjects met for two forty-five minute sessions weekly for a total of fifty sessions. The DIBELS was administered during pre-testing, after the twentieth session and after the last session. The post-testing was completed following the fiftieth session.



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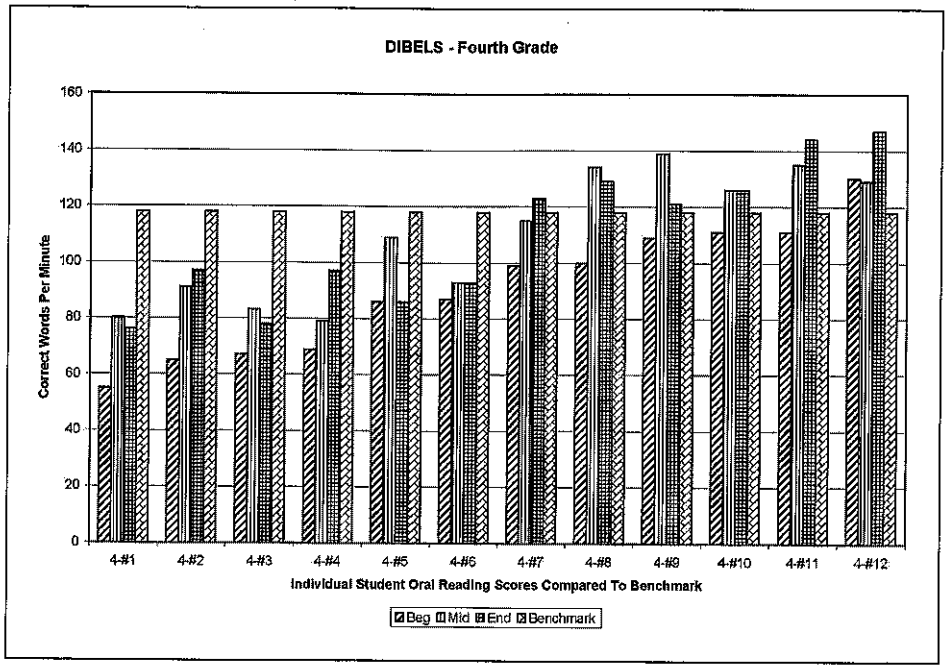

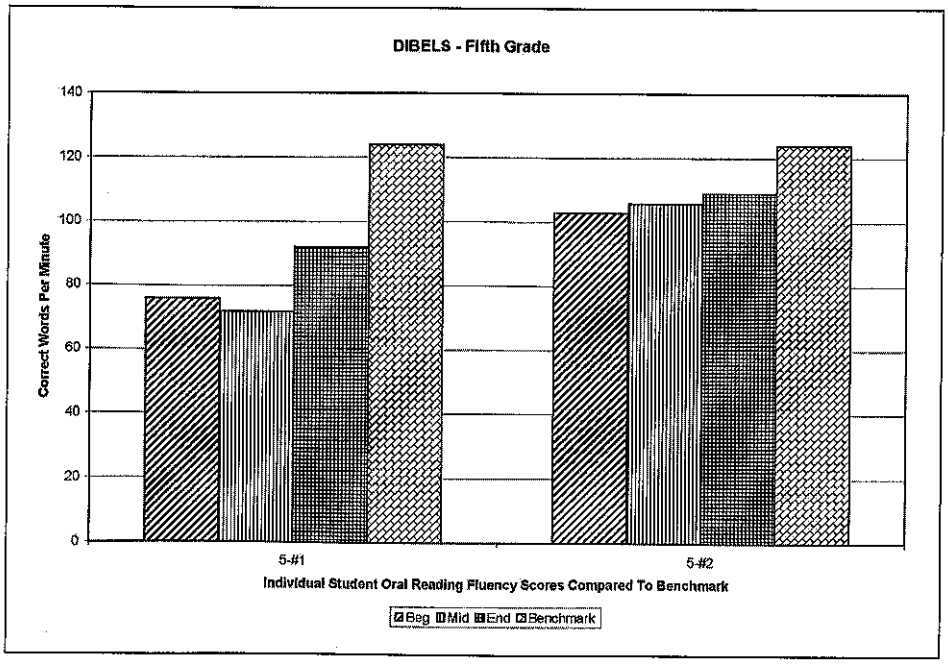

The Results of the Study

The means of the pre- and post-test standard scores were compared using paired samples t tests to determine if the means differed significantly from one another. In the areas of phonological processing, phonics, and fluency, the t tests showed a statistically significant difference between the pre-test and the post-test standard scores. The mean scores of the subtests Phonological Awareness, Letter-Word Recognition, and Non-Word Decoding increased by ten standard scores points. Decoding Fluency increased by seven standard score points. *Continued on Page 8*

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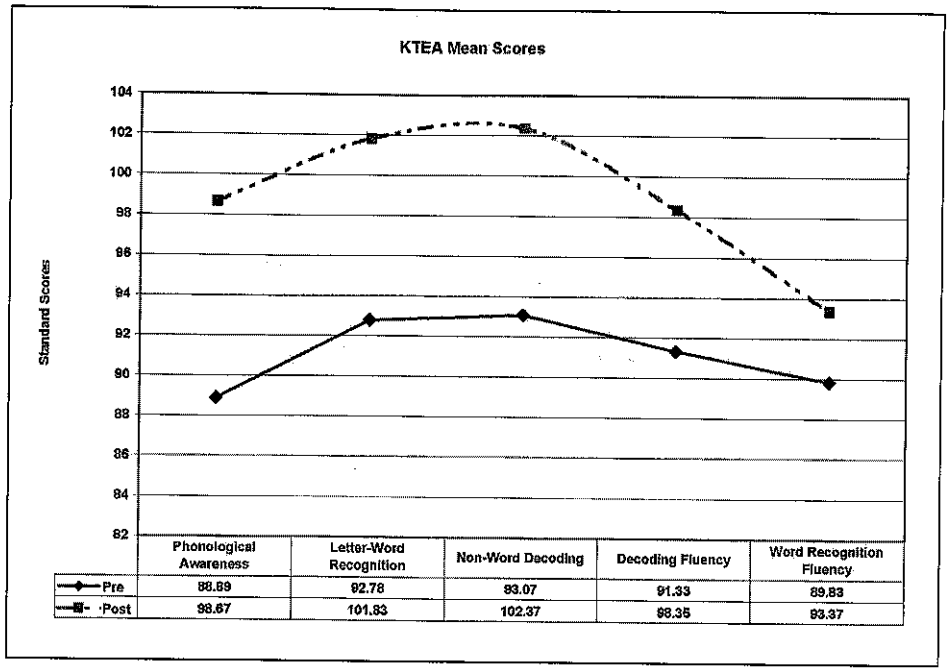
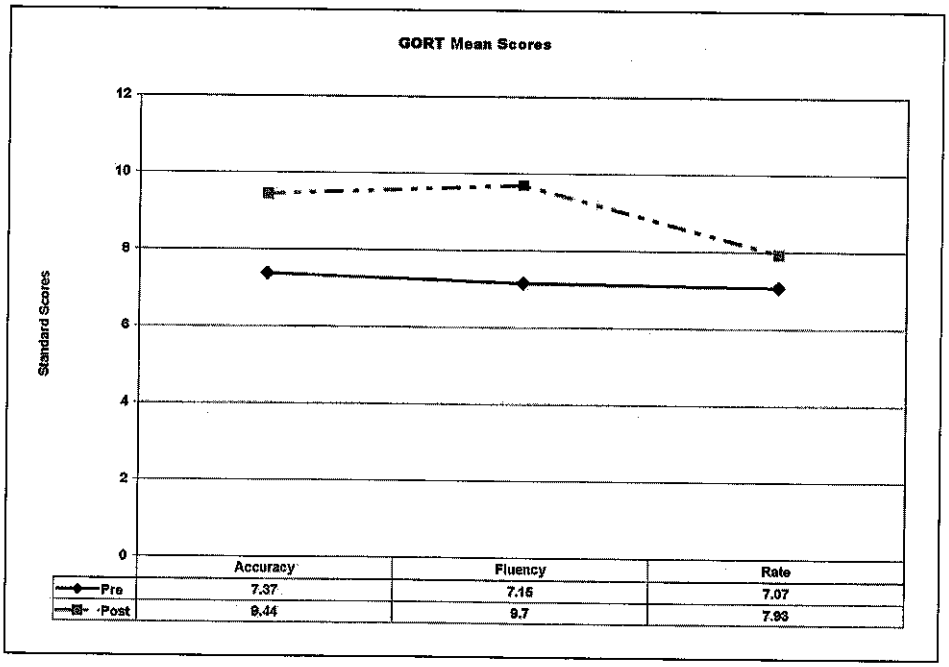


	Phonological Awareness	Letter-Word Recognition	Non-Word Decoding	Decoding Fluency	Word Recognition Fluency
Pre	88.89	92.78	93.07	91.33	89.83
Post	98.67	101.83	102.37	98.35	93.37



	Accuracy	Fluency	Rate
Pre	7.37	7.15	7.07
Post	9.44	9.7	7.93

Conclusions

In today's educational environments, educators are faced with an incredible number of students struggling with the inability to acquire proficient reading skills. Because of a growing amount of research in the field of reading, there are unprecedented opportunities for educators to help students become better readers. *Rx for Discovery Reading* provides a research-supported intervention. It is hoped that more educators will become involved in providing this intervention to impact the lives of children.

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Meeting the Desired Ends

Kathy Hopkins, Ed.D.

The declared mission of NILD is to build the confidence and competence of those who struggle to learn by training educators and developing programs. This mission has become so familiar to me and to my staff that we sometimes rehearse it in our dreams! It captures the essence of why we are here and has become a benchmark of accountability to measure our success.

My wonderful board of directors holds me accountable to the mission and specifically to defining the words "confidence" and "competence". These are what the board has defined as the "Ends Policies". We must measure these attributes to determine whether our mission is achieving results. This is an overview of these policies, as they pertain to academics, social development, and citizenship. Successful learners:

- develop skills/abilities to continue life-long learning
- develop reading and math skills at or above grade level
- demonstrate improvement in reasoning and memory
- demonstrate the ability to focus and attend
- demonstrate grade level achievement in standardized measures
- improve their interactive language skills
- view themselves as capable and become more confident about their academic abilities
- demonstrate self-discipline in planning, organizing and implementing strategies toward desired goal
- become valuable contributors to their school and communities

For years we have collected program data from our member schools. Our files are quite full after 25 years of data collection! Some of the new data has been used for dissertations and research studies. As we have now incorporated a new and revised testing battery to measure our mission's level of success, we are adding some new components to the data we ask you to send us each spring. One will involve a checklist that students complete. Actually, we have simplified your work and made the data reporting less time-consuming for you. The Woodcock-Johnson III Tests of Achievement and subtest scores will answer many of the research questions for us as will the WISC-IV entry and exit tests. In all these things, our primary goal is to make sure that we are measuring the Ends set by the board.

One exciting new search we are beginning with Jay Graham, our Chief Development Officer, is called Project Find. Its purpose will be to find students who completed their NILD programs and are now successful in a particular profession or life skill. Jay will start with former students from the Norfolk area to make connections with these individuals so that we will have more specific data to celebrate. You may be asked to help us with this.

As you reflect upon your current and past students, see the NILD Ends statements as a guide to your practice. Our work is powerful and effective and we must capture the essence of our mission: to build competence and confidence in those who struggle to learn. I cannot imagine a more worthwhile enterprise for those who have been called to teach. Thank you for your accurate records-keeping and your faithful responses to our requests for data. It makes a difference!

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