

School District of the City of Pontiac  
**Orton Gillingham Project: 1997-98**  
**Program Evaluation**  
**Summary Report**

by  
Susan F. Axelrad-Lentz, Ph.D.  
Greentree Research and Development Services  
August, 1998

Following a comprehensive Professional Development program, groups of interested teachers in both Special and General Education Classrooms began implementation of the techniques of the Orton Gillingham program. To assess student outcomes, students were tested on both phonetic sounds in isolation and words. The word test was comprised of both nonsense words and real English words, termed "red" words.

Assessments were given at the beginning of the year (pre-test), in the middle of the year (midterm), and at the end of the year (post-test). Pre-tests were administered in September, midterms during the period from January through March, and post-tests were given during May and June.

A second word list was introduced to students mastering the first word list at the midterm and repeated in the final assessment. A third word list was introduced in the final assessment. These tests included more difficult words.

The breakdown by grade level, teacher, and school appears as the first attachment. Participating students were enrolled in kindergarten through fifth grades. Grades three, four, and five were combined for analysis.

Not all students were tested on all tests in all three time periods. Tables detailing the number tested and the mean score by grade level follow. Nonsense and red words are presented separately as well as in combination.

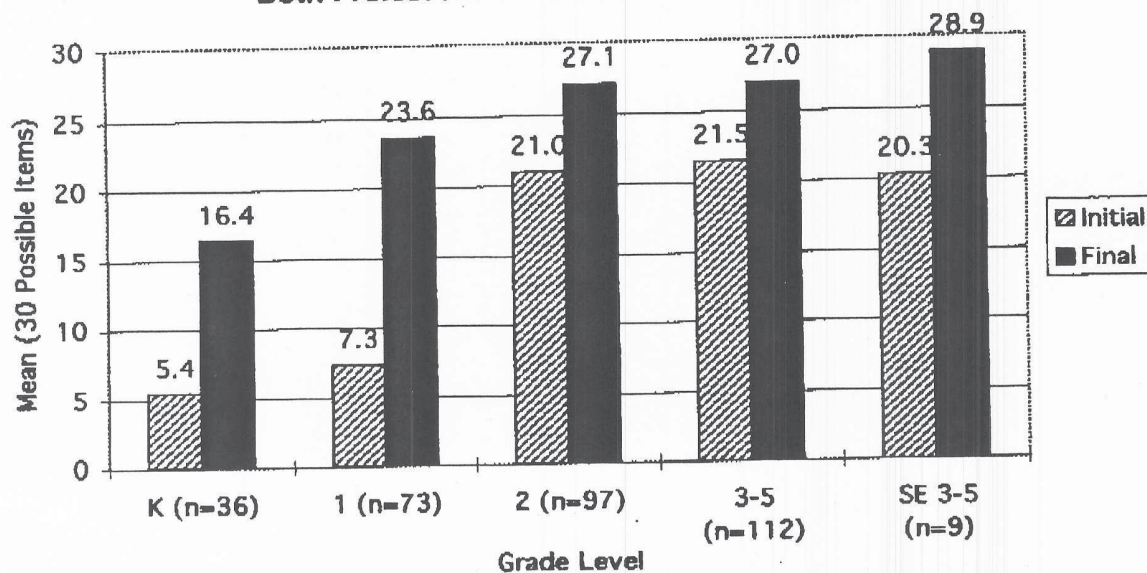
Graphs are used to depict the initial and final test scores for students tested on specific instruments in both time periods. Several important observations can be made:

1. Students gained phonics reading skills over the school year at every grade level.
2. The post-test scores were higher than the pre-test scores of the succeeding grade level. For example, kindergarten students ended the year with a mean Phoneme Test score more than double the mean pre-test score of first graders. This implies that Orton Gillingham procedures prepare students for the next grade level better than did procedures used previously.
3. Student performance, based on percent mastery, on "red words" is higher than that on the nonsense words. This verifies the importance of teaching meaningful language; however, the improvement demonstrated in reading nonsense words suggests the importance of teaching phonics for helping students decipher unfamiliar words.
4. Special Education students in grades three, four, and five ended the year with mean test scores equivalent to their peers in general education, despite having begun the year with lower test scores.

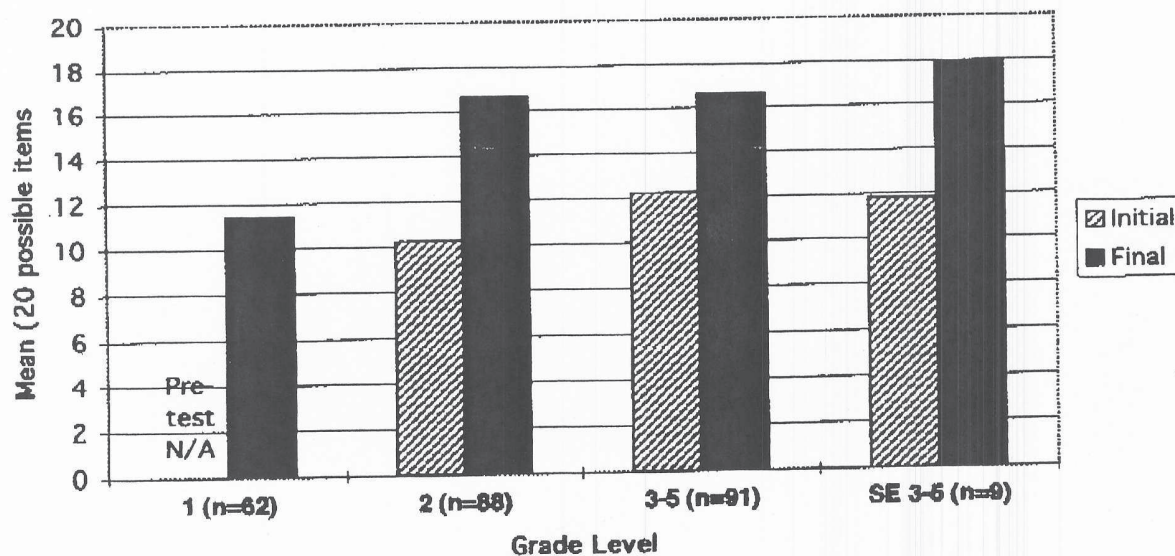
The results of this initial year using Orton Gillingham practices demonstrate the value of these practices with both Special and General Education students. As a part of a comprehensive reading program, these practices have potential for improving district elementary school students' reading skills.

# 1997-98 ORTON GILLINGHAM PROGRAM

## Phoneme Assessment: Mean Number of Items Correct for Students with Both Pretest and Posttest Scores Available



## Word Assessment: Mean Number of Items Correct for Students with Both Pre-test and Post-test Scores Available





**Results of Student Phoneme and Word Assessments  
Conducted at the Start of the Year (Initial), Mid-term, and Year-end (Final)**

**Assessment of Phonemes - 30 Items**

Grade	Initial		Mid-term		Final	
	N	Mean	N	Mean	N	Mean
K	46	5.0	49	7.5	45	15.2
1	152	9.3	102	20.4	81	23.6
2	192	20.9	57	26.4	105	26.7
3-5	196	21.5	116	25.2	126	27.0
Special Ed. 3-5	46	20.0	16	25.1	14	26.2

**Assessment of Word List 1 - 20 Items**

Grade	Initial		Mid-term		Final	
	N	Mean	N	Mean	N	Mean
K	0	-	0	-	0	-
1	58	8.7	59	9.4	62	11.4
2	134	9.7	81	15.1	117	16.3
3-5	200	12.6	55	15.0	110	16.6
Special Ed. 3-5	18	11.3	26	13.7	22	15.9

**Assessment of Word Lists 2 and 3 - 20 Items Each**

Grade	List 2				List 3	
	Mid-term		Final		Final	
	N	Mean	N	Mean	N	Mean
K	0	-	0	-	0	-
1	0	-	16	7.0	18	2.5
2	0	-	61	13.1	22	9.6
3-5	59	12.8	64	16.1	42	13.9
Special Ed. 3-5	9	6.6	9	12.2	9	6.9

**Results of the Separate Sections of the Word Assessments  
Nonsense Words and Real of "Red" Words**

**Word List 1: 15 Nonsense Words**

Grade	Initial		Mid-term		Final	
	N	Mean	N	Mean	N	Mean
K	0	-	0	-	0	-
1	58	6.2	60	6.3	62	8.2
2	158	6.0	82	10.8	117	11.6
3-5	205	8.0	58	10.0	110	11.9
Special Ed. 3-5	18	6.9	26	9.0	22	11.9

**Word List 1: Five "Red" Words**

Grade	Initial		Mid-term		Final	
	N	Mean	N	Mean	N	Mean
K	0	-	0	-	0	-
1	58	2.4	59	3.0	62	3.2
2	134	3.3	81	4.3	117	4.7
3-5	201	4.5	56	4.9	111	4.7
Special Ed. 3-5	18	4.4	26	4.7	22	4.0

**Word List 2: 15 Nonsense and Five "Red" Words  
First Tested Mid-term**

Grade	Nonsense Words, List 2				Red Words, List 2			
	Mid-term		Final		Mid-term		Final	
	N	Mean	N	Mean	N	Mean	N	Mean
K	0	-	0	-	0	-	0	-
1	0	-	17	5.8	0	-	16	1.4
2	0	-	61	9.8	0	-	61	3.2
3-5	61	9.9	66	13.3	59	2.8	64	3.7
Special Ed. 3-5	9	5.0	17	10.7	9	1.6	9	2.8

**Word List 3: 15 Nonsense and Five "Red" Words  
First Tested Year-end**

Grade	Nonsense Words, List 3		Red Words, List 3	
	Final		Final	
	N	Mean	N	Mean
K	0	-	0	-
1	18	1.6	18	0.9
2	23	6.3	22	3.1
3-5	59	9.5	43	3.7
Special Ed. 3-5	9	4.6	9	2.3

**1997-98 Orton-Gillingham Program  
Program Evaluation**

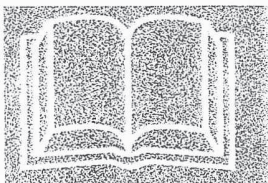
**Evaluation Participants**

<b><u>GRADE</u></b>	<b><u>TEACHER</u></b>	<b><u>SCHOOL</u></b>	<b><u>N of Students*</u></b>
Kindergarten	Garrett/ Downing	Crofoot	56
Grade 1	Crane	Owen	23
	Fisher	Frost	23
	Greenstein	Frost	24
	Johnson	Crofoot	27
	Major	Webster	26
	Marusiak	Webster	20
	Woods	Frost	26
Grade 2	Arnold	Emerson	29
	Bullock	WHRC	26
	DeCubber	Webster	29
	Gunning	Whittier	24
	Johnson	Crofoot	26
	Seymour	Owen	26
	Vanek	Whittier	24
	Young	Crofoot	28
	Chadwick/ Clough	LeBaron	25
	Deremo	Emerson	27
Grades 3-5	Dick	Webster	26
	Gardner	Owen	29
	Kent/ Menard	LeBaron	26
	Smith	Whittier	23
	Starkman	Owen	27
	Swirski	Emerson	24
	Wright	Owen	26
	Brown	Crofoot	12
	Friedman	LeBaron	4
	McNett	Frost	16
Special Education, Grades 3-5**	Reichard	Owen	14

\*Number of students includes those added to the class list through the mid-term assessment. The number tested on specific assessments at specific time periods varied.

\*\* Data for McKeever's seven students was not analyzed. These students were in a K-3 learning center and data was submitted only for the initial assessment.





## CURRENT RESEARCH

### THE IMPORTANCE OF DIRECT INSTRUCTION

Current research supports an approach to teaching reading that incorporates a code-emphasis, multi-sensory method as a complementary component of the reading program adopted by the school district. Direct progressive instruction provides structure and understanding of linguistics that beginning and at-risk students need to develop important literacy competencies. This program develops students' meta-cognition skills that result in learned strategies they can apply throughout life. The information on the following pages was compiled from research articles and texts by leading authorities supporting the inclusion of direct instruction of phonemic skills in a balanced approach to teaching reading.

### A PIONEER IN READING RESEARCH

Jeanne Chall, Ph.D., Harvard University, is recognized as a pioneer in reading research. Chall reviewed a vast amount of research and data on reading methodologies in her book Learning to Read: The Great Debate (1967). She concluded:

"Beginning reading programs that emphasized decoding or phonics, the direct and systematic focus on the system that maps print to speech, and the opportunity to practice learning that system in the context of reading, were much more effective than those that only used meaning based approaches."

As research on effective reading instruction continued, many educators began to better understand what elements are critical to a balanced approach to reading. In the early 90's, Reid Lyon, Ph.D., in conjunction with the National Institute of Child Health and Human Development, supported the inclusion of phonemic awareness instruction in curriculum designed for children with learning disabilities. He also concluded that direct instruction in the alphabetic code in the regular primary classroom would benefit all beginning readers.

In August of 1996, "Excerpts from the Guide to the California Reading Initiative" was published. That report recommended that direct instruction in phonemic awareness skills, systematic explicit phonics instruction, an organized approach to spelling, structural vocabulary development, and explicit teaching of comprehension strategies all be included in the teaching of reading. It also stated that phonemic awareness is the most important determinant of learning to read, and that children progress faster when taught how to analyze and manipulate speech sounds in words.

---

## FINDINGS OF THE NATIONAL READING PANEL

In 1997, Congress asked the NICHD to convene a national panel to assess the effectiveness of various approaches to reading instruction. The panel spent over two years reviewing, assessing and analyzing research-based knowledge on reading instruction. They took that knowledge and collaborated on "The Report of the National Reading Panel: Teaching Children to Read." They concluded that, for children to become good readers, they must be taught:

- Phonemic awareness skills - the ability to manipulate the sounds that make up spoken language;
- Phonics skills - the understanding that there are relationships between letters and sounds;
- The ability to read fluently with accuracy, speed and expression; and
- To apply reading comprehension strategies to enhance understanding and enjoyment of what they read.

The following is taken from the testimony regarding the panel's findings given before the U.S. Senate Appropriations Committee by Dr. Donald N. Langenberg, NRP Chairperson (August, 13, 2002):

*"First, the Panel found that certain instructional methods are better than others, and that many of the more effective methods are ready for implementation in the classroom. For example, there was overwhelming evidence that systematic phonics instruction enhances children's success in learning to read and that such instruction is significantly more effective than instruction that teaches little or no phonics.*

*Second, literacy instruction can and should be provided to all children beginning in kindergarten. To become good readers, children must develop phonemic awareness, phonics skills, the ability to read words in text in an accurate and fluent manner, and the ability to apply comprehension strategies consciously and deliberately as they read. Children at risk of reading failure especially require direct and systematic instruction in these skills, and that instruction should be provided as early as possible. Such instruction should be integrated with the entire kindergarten experience in order to optimize the students' social and emotional development.*

---



*Third, research on this critical subject must stand up to critical, scientific scrutiny. No reputable physician would normally subject a patient to a treatment or a drug whose efficacy had not been proven in rigorous scientific testing. We should expect no less of a teacher subjecting a student to curricular content or a teaching methodology. Without the necessary, proven knowledge base, we can expect our schools to continue to be besieged by education fads and nostrums. Finally, and most importantly, teachers are key! They must know how children learn to read, why some children have difficulty learning to read, and how to identify and implement effective instructional approaches for different children. They must learn to judge the quality of research literature and use it to develop curricula and teaching methods based on the most scientifically rigorous studies. To help them perform their critical role, teachers should be provided extensive preservice and inservice training in a variety of instruction techniques."*

## REPORT OF THE NATIONAL READING PANEL:

### NICHD FINDINGS & DETERMINATIONS (EXCERPTS)

#### Regarding Phonemic Awareness Instruction:

"Overall, the findings showed that teaching children to manipulate phonemes in words was highly effective under a variety of teaching conditions with a variety of learners across a range of grade and age levels, and that teaching phonemic awareness to children significantly improves their reading more than instruction that lacks any attention to PA . . . Importantly, the effects of PA instruction on reading lasted well beyond the end of training. Children of varying abilities improved their PA and their reading skills as a function of PA training."

#### Regarding Systematic Phonics Instruction:

"The meta-analysis revealed that systematic phonics instruction produces significant benefits for students in kindergarten through 6<sup>th</sup> grade and for children having difficulty learning to read. The ability to read and spell words was enhanced in kindergartners who received systematic beginning phonics instruction. First graders who were taught phonics systematically were better able to decode and spell, and they showed significant improvement in their ability to comprehend text."

---



### **Regarding Text Comprehension Instruction:**

"The rationale for the explicit teaching of comprehension skills is that comprehension can be improved by teaching students to use specific cognitive strategies to reason strategically when they encounter barriers to understanding what they are reading. Readers acquire these strategies informally to some extent, but explicit or formal instruction in the application of comprehension strategies has been shown to be highly effective in enhancing understanding. The teacher generally demonstrates such strategies for students until the students are able to carry them out independently."

### **RESEARCH: ORTON-GILLINGHAM AND THE MULTI-SENSORY APPROACH**

The following was excerpted from *Teaching Reading in an Inner City School through a Multisensory Teaching Approach* (Joshi, R.M., Dahlgren, M., & Boulware-Gooden, R., *Annals of Dyslexia*, Vol. 52, 2002).

### **Regarding the Purpose and Methodology of the Study:**

"The purpose of the study was to examine the efficacy of the multisensory teaching approach to improve reading skills at the first-grade level. The control group was taught by the Houghton-Mifflin Basal Reading Program while the treatment group was taught by the Language Basics: Elementary, which incorporates the Orton-Gillingham-based Alphabetic Phonics Method."

### **Regarding the Use of Orton-Gillingham Based Methods:**

"A number of studies have demonstrated that systematic, explicit, decoding instruction that emphasized synthetic phonics yielded better results than other instructional methods . . . A remedial instruction that has deep historical roots and is being widely used is the Orton-Gillingham approach (OG hereafter). In clinical studies, this approach has proven to be very effective in improving reading and spelling among children with literacy problems."

---

### **Regarding Procedure Used:**

"The teachers in the two classrooms of the control group used what they called a balanced approach to teaching reading. But based on our observations, instruction was primarily based on the basal readers, and not on systematic, explicit, sequential instruction . . . The treatment group received the multisensory reading instruction. The teachers in the two classrooms of the treatment group received 42 hours of training in the multisensory techniques during the beginning of the year . . . Both the control and the treatment groups received 50 minutes of daily instruction in literacy activities."

### **Regarding Results:**

"Statistical analyses were conducted to see to what extent children in both groups improved in the different aspects of reading, and whether or not children in the treatment group showed significantly greater gains than children in the control group for each of the variables. When the gains scores of the two groups were compared by using repeated measures multivariate analysis of variance, it was found that the gain scores of the treatment groups were significantly higher than that of the control groups."

### **Conclusion:**

"The results of this study showed that first-grade children taught with the multisensory teaching approach based on OG principles performed better on tests of phonological awareness, decoding, and reading comprehension than the control groups. It may, therefore, be concluded that the higher scores for children from the treatment groups may be attributed to the multisensory approach used in this study. As noted earlier, children in the control groups were not taught phonics skills in a systematic and explicit fashion, and they did not show any significant gains in phonological awareness and decoding skills."

---