

The Early Intervention in Reading Program (EIR®): Research and Development Spanning Twelve Years

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INTRODUCTION

In the late 1980s, there was a great deal of interest in Reading Recovery (Pinnell, 1989) as an effective one-on-one reading intervention program for first-grade students. However, a limitation with this approach is that in schools with high numbers of first-grade children at risk of failing to learn to read, one-on-one instruction will not reach enough children. Consequently, the Early Intervention in Reading (EIR[®]) Program was developed as an instructional-sound, easy-to-use, small group intervention program for use within the regular classroom with struggling first-grade readers. The research and development on EIR spans a 12-year period, beginning in 1989–90 with the grade 1 program. Over the past 12 years the EIR program has continued to evolve, and in the process has been expanded to grades K–4. To accelerate their learning to read, children in EIR receive 20–30 minutes a day of supplemental instruction in addition to a strong core reading program. The concept of acceleration (Clay, 1992), as opposed to remediation, is an important one because the former goes hand-in-hand with the belief that all children can be successful in reading.

In this paper, the research on different grade-level components of the Early Intervention in Reading Program is reviewed. The purposes of this review are: (a) to summarize the extensive EIR research base, (b) to document the consistency of the results for different grade levels across numerous sites, and (c) to describe the evolution of the program over these 12 years, including its important professional development component.

Theory Behind EIR

EIR is a program built on the premise that almost all children can learn to read in grade 1 and can be reading on grade level by the end of grade 2. Some children simply require a little more help to reach these goals. It's not easy, but by working together to learn new strategies and by supporting each other, teachers can make a significant difference in many children's lives. We know a considerable amount today about what works to get all our children reading. The components of the EIR lessons are of high quality, share similarities with other effective early reading intervention programs, and are backed by extensive research (Hiebert & Taylor, 2000; Pikulski, 1994). Like most other successful early reading intervention programs (Hiebert & Taylor, 2000; Pikulski, 1992), EIR follows a three-day routine in grades 1 and 2, and a five-day routine in grades 3 and 4. During this fast-paced, relatively short lesson, children know what will happen on each particular day of the cycle, and this knowledge helps them to focus and be more efficient.

Recognizing the importance of a balanced approach to reading instruction (National Reading Panel Report, 2000; Snow, Burns, & Griffith, 1998), EIR focuses on both word recognition and comprehension instruction. In the grade 1 program, not only is an emphasis placed on developing students' phonemic awareness and their understanding of the alphabetic principle, but also on helping students apply phonics while reading connected text. In subsequent grades, there is a continued emphasis on students applying phonics

knowledge and word-recognition strategies to the reading of connected text.

Another important component of EIR is ongoing professional development. Teachers need to learn how to help students become independent learners by coaching them in the use of reading strategies. Over the last five years the professional development component of the EIR program has been strengthened considerably to enhance teachers' opportunities for professional growth in the teaching of reading. Instead of an all-day meeting and three two-hour sessions, as in the initial years of the program, the training now includes a half-day initial session and nine two-hour monthly meetings. In addition to learning new strategies as the children make progress in reading, teachers share successes and concerns as well as videos of themselves teaching the EIR program. The initial research on EIR was based on a traditional in-person delivery system. One challenge for many reading intervention programs is making the professional development component available to schools on a large scale. Recently, this problem was overcome for the EIR program when an innovative Internet delivery system, combined with support from an EIR trainer, became available. The initial research on EIR was based on a traditional in-person delivery system. However, both the traditional and Internet-based delivery systems have had excellent, and comparable, results. (See Appendix H for a Table of Contents for this program.)

Goals of EIR

EIR was developed to help first-grade students who are at risk of reading failure succeed in reading in first grade and to help children continue to make good gains in reading in grades 2–4. Most children who come to first grade with low emergent liter-

acy abilities can learn to read by the end of the year if they have access to a research-based early reading intervention program. However, there are some children who will still need an intervention program in grade 2. Perhaps these children have moved into the school in grade 2 and thus did not have the benefit of a grade 1 reading intervention program, or perhaps they didn't quite catch on to the reading process in first grade.

EIR for grades 1–2 is a supplemental classroom intervention program in which the first- or second-grade teacher works with a group of the five to seven lowest-achieving readers for 20–30 minutes a day throughout the first- or second-grade school year. (For more detailed descriptions of the program, see Taylor, Short, Frye, and Shearer, 1992; Taylor, Hanson, Justice-Swanson, and Watts, 1997.) The group spends three days engaged in repeated reading of and guided writing about a short picture book. Phonemic awareness training, instruction and coaching in word recognition strategies to foster independence, and the answering of higher-level comprehension questions are important components of the program as well. (Highlights of the EIR Instructional Program are summarized in Appendix G.)

Early reading intervention is essential to help many children get off to a good start in reading, but we know that many students in grades 3 and 4 will need assistance to become fluent and to read with good comprehension. To that end, the grades 3 and 4 EIR programs were developed. These programs focus on decoding multisyllabic words, building fluency, and enhancing comprehension. The grade 3 program uses both narrative and informational books, and the grade 4 program uses only informational text as children practice the reciprocal teaching model (Palincsar and Brown, 1984, 1986) as a reading study strategy.

Research on Grade 1 EIR Program

The EIR program has been found to be effective with many different types of regular reading programs (e.g., basal, whole language, systematic phonics; Taylor, Frye, Short, & Shearer, 1992.) Twelve years of research has found, on average, that 72% of the children in need of EIR in grade 1 (e.g., based on teacher judgment, low phonemic awareness, low letter/name knowledge) are reading independently at a primer level or higher by May of first grade. Follow-up evaluations on EIR have found that children who can pick up a book at the primer level that they have never seen before and read it with at least 90% accuracy in May of first grade will be able to read second-grade material in second grade. If children can read material sight unseen at the primer level, they understand the alphabetic principle, or the way our reading system works, and they can put this knowledge to work themselves. Follow-up research has also found that on average, 84% of the children who are in EIR in grade 1 (those grade 1 EIR students who are reading on a primer level or higher in May) are reading on a second-grade level in second grade.

The initial experimental-control studies on the grades 1 and 2 EIR programs will be described below as well as two independent studies of EIR. These sections will be followed with evaluation data on the effectiveness of EIR from 72 schools and 3400 children from the 1996–97 through 1999–2000 school years.

Study 1

The first study on EIR took place in 1989–90 in a suburb of a large midwestern city with 20% of the students on subsidized lunch (Taylor, Short, Frye, & Shearer,

1992). Twelve of 13 first-grade teachers in the four schools in the district that agreed to participate were randomly assigned to the EIR or non-treatment control condition. There were 31 low-achieving readers who received the EIR instruction and 28 control students.

The EIR teachers received a full day of instruction prior to the school year. They also met for three two-hour sessions after school to continue to refine their teaching of the EIR strategies and to deal with concerns about the program.

The EIR children received 20 minutes a day of EIR instruction in addition to their regular reading instruction. On the first of the three-day cycle, the children reread previously read books, read a new story with the teacher, and did sound boxes or Making Words. On Days 2 and 3 they reread previously read stories, reread their new story, and wrote a sentence about the story. During the lessons the teachers provided a great deal of support and coached as children did as much of the reading and writing themselves as possible. The children also spent five minutes a day reading their new story to an aide who had received training in how to coach in word recognition instead of telling a child a word. In the control condition, the six control teachers reported that they spent extra time with their lowest-achieving readers, reteaching reading skills and listening to the children read. For regular reading instruction, all teachers followed the district whole language approach.

The results of the study are reported in Taylor, Short, Frye, and Shearer (1992), but highlights will be summarized here. After controlling for fall scores on the Gates-MacGinitie Readiness Test, the EIR students had significantly higher scores than the control students on the Gates-MacGinitie Reading Test, reading comprehension

subtest, $t(55) = 2.19$, $p = .03$, $ES = .56$. The EIR children went from a mean percentile of 29 on the Gates in the fall to a mean of 37 in the spring. In contrast, the control students went from a mean percentile of 34 on the fall Gates to a mean of 27 in the spring. In addition, 50% of the EIR children could read a trade book, *Addie Meets Max* considered to be at an end-of-grade 1 level, with at least 93% accuracy in word recognition. Twenty-one percent of the control students and 57% of average readers could read this book at this level as well. Chi-square tests revealed that there was no difference in the incidence of the EIR and average readers who could read *Addie Meets Max* at an acceptable level, but that more EIR students could read this book than students in the control group.

Study 2

Study 2, which took place in a suburban school in Minnesota with an intensive phonics program for first-grade reading instruction, is briefly described in Taylor, Short, Frye, and Shearer (1992). In this study, there were four teachers from schools A and B who used EIR and four teachers from schools B and C who did not. The teaching and professional development procedures were very similar to what was described in Study 1 above.

At the end of the year, children read from an informal reading inventory (Roe, 1989) and were given a score for the highest level at which they could read with at least 93% accuracy (e.g., non-reader = 1.0, preprimer = 1.3, primer = 1.6, end of grade 1 = 1.9, second grade = 2.5, third grade = 3.5). After controlling for students' fall phonemic awareness scores (Taylor, 1991), it was found that the EIR students had higher reading scores than the control students, $t(43) = 2.76$, $p = .009$, $ES = 1.00$.

Although the control students had a higher mean phonemic awareness score in the fall ($M = 3.9$, $S.D. = 1.5$, out of a total possible score of 12) than the EIR students ($M = 2.2$, $S.D. = 2.0$), the EIR students' mean (unadjusted) reading level in spring was 1.9 as compared to 1.3 for the control students. Also, significantly more EIR students could read the end-of-grade 1 trade book, *Addie Meets Max* than control students, $t(43) = 2.31$, $p = .03$, $ES = .78$. Two thirds of the EIR children could read at a primer level or higher in spring as compared to one third of the control students.

Study 3

Study 3 was carried out in a rural community in Wisconsin. The school used a basal reader program. Again, procedures were similar to what was described in Study 1. There were two EIR classrooms and one control classroom from one school.

After controlling for fall phonemic awareness scores, it was found that the EIR children had a higher mean reading level score in May than the control children, $t(13) = 2.80$, $p = .015$, $ES = 1.60$. The mean reading level for the EIR children was 2.1 versus 1.4 for the control children. More of the EIR children could read *Addie Meets Max* than the control children, $t(13) = 3.09$, $p = .009$, $ES = 1.00$. Ninety percent of the EIR children could read at a primer level or higher and 60% of the control children could read at the primer level or higher.

Study 4

Study 4 was carried out in an urban school in Minneapolis with 40% of the students on subsidized lunch. There were 11 children in the EIR group and 12 in the control group. Procedures were similar to what was used in the previous studies. Both

the EIR and control groups were taught by a reading resource teacher who came into the regular classroom.

After controlling for fall Metropolitan Achievement Test (MAT) scores, it was found that the EIR children had higher California Achievement Test (CAT) comprehension scores in May than the control children, $t(21) = 2.72$, $p = .013$. The EIR children had a mean MAT score in the fall at the 23rd percentile and a mean CAT score in the spring at the 28th. The control children had a mean MAT score in the fall at the 30th percentile and a mean CAT score in the spring at the 23rd percentile.

After controlling for fall phonemic awareness scores, the EIR children had a higher mean fluency score as measured by words correct per minute (Deno, 1985) in the spring, $t(21) = 1.72$, $p = .10$, than the control children. The EIR children had a mean phonemic awareness score in the fall of 2.0 (S.D. = 2.3) and a mean words-correct-per-minute score in the spring of 63.69 (S.D. = 27.0). The control children had a mean phonemic awareness score in the fall of 2.1 (S.D. = 1.6) and a mean words-correct-per-minute score in the spring of 44.0 (S.D. = 29.4).

Summary of Grade 1 Research Studies

Across these four initial studies, 67% of the EIR children could read on a primer level or higher by May, with 46% of the children able to read on an end-of-grade 1 level. (See Appendix A, Schools 1–4.) In contrast, only 39% of the control children could read on a primer level or higher by May, with only 12% able to read at an end-of-grade 1 level. In the two studies in which standardized reading scores were available, the EIR children were found to score higher than the control children on these tests. In follow-up evaluations of chil-

dren in the grade 1 initial EIR research studies, it has been found that 79% of the children in EIR are reading on grade level in second grade and in third grade (Taylor, 1995; see Appendix A).

As will be seen in the evaluations of EIR conducted between 1996–97 and 1999–2000, the percent of children reading on at least a primer level has increased somewhat since these initial studies. This increase in the success rate is perhaps due to improvements in the program, such as an increased focus on comprehension, as well as the enhanced professional development component of the program.

Research on Grade 2 EIR Program

Below is a report on the initial research studies on the grade 2 EIR program, which were carried out in one inner-city elementary school. At this school 50% of the grade 2 students scored in the lowest quartile on the Metropolitan Achievement Test. The program was piloted as a seven-week enrichment class because that fit the programming at the school where it was developed. Results were promising, but not as strong as we would have liked. In the second year the program was extended to a year-long program, and better results were achieved.

Study 1

In 1993–94, the grade 2 EIR program was developed and piloted in an inner-city school that had many grade 2 children not yet reading on a primer level upon entering second grade. The program was piloted as a seven-week enrichment class for children who were identified as not yet able to read a primer book with at least 93% accuracy. These children received 30 minutes of EIR instruction five days a week over the course of the class, which was taught by a reading

resource teacher. There were 26 children who took this class in either the fall, winter, or spring. There were an additional 19 children who served as control students. These children also could not read at a primer level in the fall, but they were unable to take the enrichment class because they had a scheduling conflict with another enrichment class, such as Spanish, which they were taking all year.

Results indicated that after controlling for fall MAT scores, the children in the EIR class had significantly higher reading level scores in the spring of second grade ($M = 1.9$, $S.D. = .77$) than the control students ($M = 1.6$, $S.D. = .63$, $t(43) = 1.65$, $p = .10$, $ES = .53$). Results are summarized in Appendix B.

Follow-up research showed that 67% of the students who had had EIR in grade 2 were reading on a grade 3 level in May of grade 3. In comparison, 53% of the control students were reading on a grade 3 level in May of grade 3.

Study 2

In the fall of 1994–95, the grade 2 EIR program was again carried out as a seven-week enrichment class in the fall, but the reading resource teacher continued to meet with the children once a week to read a new story with them, which they practiced reading during the week. These children also met once a week for one half-hour with fourth-grade students who coached them as they read their new story. There were 31 children identified who could not read at a primer level in the fall. Of these children, there were 12 children who took the EIR class in the fall with the cross-age tutoring component, seven who took it in the spring with no cross-age tutoring component, and 12 who, due to scheduling conflicts, were unable to take the EIR class and thus served

as control students.

The results of this study are reported in Taylor, Hanson, Justice-Swanson, and Watts (1997), but highlights of the findings pertaining to the fall EIR and control students will be summarized here. (See Table 2.) After controlling for fall grade 2 MAT scores, it was found that the fall EIR students scored significantly higher than the control students on the fall grade 3 MAT test, $t(19) = 2.76$, $p = .02$, $ES = 1.00$. The EIR students had a mean MAT score in the fall of grade 2 at the 12th percentile, and a mean MAT score in the fall of grade 3 at the 19th percentile. In contrast, the control students had a mean grade 2 MAT score at the 9th percentile and a mean grade 3 MAT score at the 8th percentile.

The fall EIR students had a mean reading level score in May of 2.7 ($S.D. = .5$) and the control students had a mean reading level score in May of 1.2 ($S.D. = .4$). It was found that after controlling for fall MAT scores, the fall EIR students had a significantly higher mean reading level score in May of second grade than the control students, $t(19) = 7.19$, $p < .001$, $ES = 3.4$.

Summary of Grade 2 Research Studies

Across these first two studies, 64% of the children who came to second grade reading well below a primer level (e.g., mean word recognition accuracy score on a primer passage was 76%) were reading on a grade 2 level in May of grade 2. Since that early research, the program has continued as a year-long program in which students receive 20 minutes a day of supplemental instruction. Evaluation results of the year-long grade 2 program, reported in a later section of the paper, reveal that 85% of the grade 2 children, on average, who come to school in the fall struggling at or reading below a primer level, are able to read on a

grade 2 level by the end of the year if they are in the year-long grade 2 EIR program. Follow-up evaluations have found that 92% of the children who have had EIR in grade 2 are reading on a grade 3 level in third grade.

Although teachers can do a considerable amount in grade 2 to help the children who did not catch on to reading in grade 1, EIR instruction in grade 1 should not be postponed until grade 2. Fortunately, we can help **many** first-grade children, who are at risk of reading failure, learn to read in first grade, and we should do so for as many as possible.

Independent Research Studies on EIR

In an outside evaluation of EIR in 15 schools in Springfield, Massachusetts, in 1996–97, 266 children who had had EIR in grade 1 were compared to 209 children in 12 schools using **Early Success** (of which EIR is the predecessor), Open Court, or traditional Title 1 instruction. It was found that the children in EIR had the highest means on each of the seven reading measures assessed, with **Early Success** a close second (Chard, 1977). Furthermore, using analysis of covariance to analyze the data, children in EIR/**Early Success** scored significantly higher than children in traditional Title 1 or Open Court on letter name identification, letter sound identification, segmenting, blending (EIR/**Early Success** differed from Open Court only), dictation (EIR differed from the other two conditions), and word reading. On word dictation, the EIR and **Early Success** children had mean scores of 9.5 (S.D. = 4.2) and 8.3 (S.D. = 4.0), respectively, as compared to means of 6.0 (S.D. = 4.5) and 6.7 (S.D. = 4.8) for Open Court and Title 1 students, respectively. On word reading, the EIR and **Early Success** children had mean scores of 11.3 (S.D. = 4.3) and 9.4 (S.D. = 4.8), respectively, as compared to means of 6.8

(S.D. = 5.7) and 4.9 (S.D. = 5.4) for Open Court and Title 1 students, respectively.

In another independent evaluation of EIR conducted in 1995–96 in San Angelo, Texas, in two schools in which 40% of the children were on subsidized lunch, it was found that 88% of the children in the grade 1 EIR program were reading within the average range for first graders in May as compared to 30% of a comparison group (Lehr, 1994). Classroom teachers, who provided the EIR instruction, met with their EIR trainer for an initial all-day training session, followed by monthly meetings to discuss the program. Since their trainer was from Minnesota, they communicated with her each month via phone, sent her videotapes to view and comment on, and had her come back to visit classrooms and provide a follow-up training session midway.

Evaluations of EIR in Grades 1 and 2

In evaluations of EIR, conducted for the most part at the University of Minnesota, the scores reported are for children who were in EIR in different districts in the state. The evaluations look at students' reading growth, but unlike the initial research studies, do not have comparison groups in most instances. However, the data are quite consistent from year to year for similar types of schools (e.g., rural, suburban, urban).

These data are provided in Appendices A–D and are summarized in Table 1. Data are reported for individual schools in which teachers took EIR training, or for districts in which there was a district-level initiative to take EIR training. Except for follow-up evaluations, which were conducted by research personnel at the University of Minnesota, these data were collected by individual schools in 1998–99 and 1999–2000 according to established procedures. In 1996–97 and 1997–98, all data were collected by research assistants.

Table 1. Words Correct Per Minute of Average Readers from a National Study of 14 Schools Ranging from 28 to 92 Percent Poverty (Taylor et al., 2000)

Grade 1	Mean	S.D.	n
Nov.	21.1	14.8	37
May	54.0	20.0	45
Grade 2			
Nov.	76.7	23.9	44
May	89.4	23.7	44
Grade 3			
Nov.	94.3	31.9	42
May	112.7	31.0	41

research personnel at the University of Minnesota, these data were collected by individual schools in 1998–99 and 1999–2000 according to established procedures. In 1996–97 and 1997–98, all data were collected by research assistants.

At the school level, in some instances participation in EIR was voluntary and in other instances, there was a building-level decision that teachers should take EIR training. This information is listed, with a V for voluntary participation and R for strongly recommended or required participation, along with the school poverty level and type of community.

In 1998–99 and 1999–2000 in the data in Table 1, we provide data on students' reading fluency. Scores are based on students reading from QRI2 (Leslie and Caldwell, 1995). To help with interpretation, data from a national study (Taylor, Pearson, Clark, & Walpole, 2000) on grade 1–3 students' mean words correct per minute (Deno, 1985) by grade level (also based on the QRI2) are provided in Table 1.

Grade 1 Evaluation Results

In the fall of first grade all students who were in EIR had been assessed on phonemic awareness by their teachers or a research

assistant (Taylor, 1990) and had received a score of 5 or less out of the 12 items on this test. Research on this test has shown that if students score 5 or less they are at risk of failing to learn to read in grade 1 (Taylor, 1990). In the spring of 1999–2000, 1998–99, and 1997–98 children were assessed on an informal reading inventory (Leslie and Caldwell, 1995) to determine their reading level. In the spring of 1996–97 children were assessed on leveled books to determine their reading level.

Data from 72 schools and 2332 students across all years from 1996–97 through 1999–2000 revealed that 72% of the students who had had EIR in grade 1 were reading on a primer level or higher in May. The mean fluency score (from 52 schools) on a primer level passage was 41 words correct per minute. The mean fall phonemic awareness score (from 29 schools) for children in EIR was 2.9. (See Table 2 for a summary of results and Appendix C for the year-by-year results.)

Across individual schools (not including schools within districts) when attendance in the EIR class was voluntary, the mean percent of students reading at a primer level or higher was 77%. In contrast, when the attendance across schools was strongly recommended or required, the mean percent

Table 2. Summary of Grade 1 Evaluations

Type of School (Mean percent poverty)	Number of Schools	Mean Phonemic Awareness in Fall	Mean Percent of EIR Students Reading Primer or Higher in May	Mean Words Correct per Minute in May
Rural (26%)	14		77	41 (n=8)
Suburban (11%)	43	3.1 (n*=20)	74	40 (n=40)
Urban (71%)	15	2.3 (n=9)	64	41 (n=4)
High ELL** (68%)	11	2.3 (n=8)	68	40 (n=5)
High Poverty*** (61%)	15	2.3 (n=9)	61	41 (n=6)
All Schools	72		72	
	(2332 students)			
Subset of Schools		2.9 (from 29 schools)		41 (from 52 schools)

- * n = number of schools
- ** Schools included in this category come from the suburban and urban categories.
- *** Schools included in this category come from the rural and urban categories.

of students reading at a primer level or higher in May was 57%. The same results were obtained when only urban schools were considered. Across districts (all of which were suburban), when attendance was voluntary, the mean percent of students reading independently in May was 77% as compared to 72% when attendance was recommended or required. In Table 2, results are summarized for rural schools, suburban schools or districts, and urban schools. Schools with greater than 25% ELL students, and high-poverty schools (greater than 50% of students on subsidized lunch) are also included.

Grade 2 Evaluation Results

In the fall of second grade, students were placed in EIR based on teacher judgment and reading level. EIR was recommended for children reading pre-primer level or lower. If a child were reading at the primer level and the teacher felt he would benefit from EIR, he might also be placed in the group. In May an informal reading inventory (Leslie and Caldwell, 1995) was used in 1999–00, 1998–99, and 1997–98

to determine if a child could read a grade 2 passage with at least 90% word recognition accuracy. In 1996–97, the students read from leveled books to determine the highest level at which they could read with 90% word recognition accuracy. Results are presented in Appendix D and summarized in Table 3.

Data from 49 schools and 1068 students across all years from 1996–97 through 1999–2000 revealed that 85% of the students who had had EIR in grade 2 were reading on a second-grade level or higher in May. The mean fluency score in May (from 18 schools on which there was also fall fluency data) on a grade 2 passage was 76 words correct per minute, with a range of from 66 to 86 across schools. The mean fall words-correct-per-minute score (from 18 schools) for children in EIR was 25, with a range of from 22 to 42 across schools.

Across individual schools (not including schools within districts) when attendance in the EIR class was voluntary, the mean percent of students reading at a grade 2 level or higher was 86%. In contrast, when the attendance across schools was strongly

Table 3. Summary of Grade 2 Evaluations

Type of School (Mean percent poverty)	Number of Schools	Mean Words Correct per Minute in Fall	Mean Percent of EIR Students Reading Second Grade Level or Higher in May	Mean Words Correct per Minute in May
Rural (38%)	10	33 (n*=3)	91	73 (n=3)
Suburban (23%)	23	30 (n=13)	93	78 (n=13)
Urban (71%)	16	26 (n=2)	70	68 (n=2)
High ELL** (71%)	9	26 (n=2)	75	68 (n=2)
High Poverty*** (72%)	16	28 (n=3)	70	66 (n=3)
All Schools	49		85	
	(1068 students)			
Subset of Schools		25 (from 18 schools)		76 (from 18 schools)

* n = number of schools

** Schools included in this category come from the suburban and urban categories.

*** Schools included in this category come from the rural and urban categories.

recommended or required, the mean percent of students reading at a primer level or higher in May was 66%. Very similar results were obtained when only urban schools were considered. Across districts (all of which were suburban), when attendance was voluntary, the mean percent of students reading independently in May was 96% as compared to 94% when attendance was recommended or required. In Table 3, results are summarized for rural schools, suburban schools or districts, and urban schools. Schools with greater than 25% ELL students, and high-poverty schools (greater than 50% of students on subsidized lunch) are also included.

Follow-Up Evaluations for Students in EIR in Grade 1 or 2

During the second five years of EIR, follow-up assessments were done in four schools in 1998–99 or 1999–2000. In 1998–99 in one school that was 58% poverty with 34% ELL students, 93% of the children who had had EIR in grade 1 and who were still at the school (n = 15) were reading on a second-grade level in May of grade 2 with a mean of 77 words

correct per minute. In 1999–2000 we were able to assess 12 of these 15 children when they were in third grade. Eighty-three percent were reading on a third-grade level, and their mean fluency score was 90 words correct per minute.

In this school, a follow-up assessment was also done of children who had been in EIR in grade 2. Of the nine children who were still at the school, 89% were reading on a grade 3 level in May of third grade. Their mean words-correct-per-minute score was 77.

At a second school that was 83% poverty with 28% ELL students, 80% of the children who had had EIR in grade 1 and who were still at the school (n = 5) were reading on a second-grade level with a mean of 92 words correct per minute.

In 1999–2000 at a third school that was at 76% poverty with 30% ELL students, we assessed six randomly selected grade 2 students who had been in EIR in grade 1. All of these students were reading on a grade 2 level with a mean fluency score of 87 words correct per minute. Five of these six students were ELL students.

An independent follow-up evaluation was done at a fourth school that has 20% of its students on subsidized lunch. Twenty-five students who received EIR instruction in grade 1 in 1988–99 were assessed at the end of grade 1. These children had a mean phonemics awareness score of 2.1 in the fall of grade 1 and were reading with a mean of 41.5 words correct per minute at the end of grade 1. All 25 students were reading on a second grade level in May of grade 2 with a mean of 91.2 words correct per minute. In this same school, 23 students who received EIR instruction in grade 1 in 1997–98 were assessed at the end of grade 3. Of these 23 children, 15 had been reading at a primer level or higher by the end of grade 1. Out of the 23, 21 were reading and comprehending well on at least a grade 3 level by May of grade 3. In fact, 14 were able to read a grade 4 passage at a mean of 101 words correct per minute with a mean retelling score of 2.6 (out of 4). Seven children were able to read a grade 3 passage in May of grade 3 with a mean of 94 words correct per minute and a mean retelling score of 2.4. Two children were only able to read a grade 2 passage at 85 words correct per minute with a mean retelling score of 2.5. These two children had been unable to read at a primer level at the end of first grade. The good news is that there were two EIR children reading at a grade 3 level by the end of grade 3 who had not been able to read at a primer level by the end of first grade, and there were four EIR children reading at a fourth-grade level by the end of third grade who had not been able to read at a primer level by the end of grade 1. (I wish to thank Mary Topp for collecting this data.)

Across the four grade 1 follow-up studies, we have found that 96% of students who had EIR in grade 1 were reading on a grade 2 level in May of grade 2 with a mean of 87 words correct per minute. Eighty-nine percent of the students in EIR in grade 1 (on whom data were available) were reading on grade level in grade 3 with a mean of 97 words correct per minute. In the two follow-up studies of students who had EIR in grade 2 (but not in grade 1), 92% were reading on a grade 3 level in grade 3 with a mean of 97 words correct per minute.

Transfer of EIR Strategies to Regular Classroom Instruction in Grades 1 and 2: Students' Reading Growth in Classrooms of EIR and Non-EIR Teachers

Children with teachers who have had EIR training show greater reading growth than children with teachers who have not received this training. In a national study of reading achievement in high-poverty schools (Taylor, Pearson, Peterson, & Rodriguez, 2001), children of low and average reading ability in grades 1 and 2 who had teachers who had received EIR training demonstrated significantly greater scores in reading fluency (after controlling for fall scores) than children whose teachers had not received EIR training, $F(1,126) = 6.56$, $p < .01$. The sample included teachers and children from eight schools around the U.S. that ranged from 70-90% poverty (as measured by percent of students on subsidized lunch). Eight grade 1 and 2 teachers in two schools had received EIR training, and 24 grade 1 and 2 teachers in six other schools had not.

In grade 1 the children who had EIR-

Table 4. Mean Reading Scores of Children in Classes of EIR and Non-EIR Teachers

	Number of Students Identified by Their Teachers as Low or Average in Reading Ability	Mean Phonemic Awareness Score in Fall	Mean Words Correct per Minute in Fall	Mean Words Correct per Minute in Spring
EIR Teachers Grade 1	17	4.8 (S.D. = 5.4)	N.A.	33.4 (25.8)
Non-EIR Teachers Grade 1	48	2.0 (S.D. = 2.7)	N.A.	18.5 (23.1)
EIR Teachers Grade 2	15	N.A.	23.8 (S.D. = 16.4)	60.9 (37.9)
Non-EIR Teachers Grade 2	51	N.A.	21.4 (S.D. = 21.4)	50.4 (32.6)

* n = number of schools

** Schools included in this category come from the suburban and urban categories.

*** Schools included in this category come from the rural and urban categories.

In grade 1 the children who had EIR-trained teachers averaged reading 33 words correct per minute in May on an end-of-grade 1 passage as compared to 18 words correct per minute for children in non-EIR classrooms. In grade 2 the children in EIR classrooms averaged 61 words correct per minute on a grade 2 passage in May as compared to 50 words correct per minute for children in non-EIR classrooms. (See Table 4.)

An analysis of teacher practices from classroom observations made during regular reading instruction revealed a significant relationship between being an EIR-trained teacher and engaging students in more active responding, as compared to non-EIR trained teachers, $r = .46$ ($p = .008$). Active responding was defined as students engaged in reading, writing, or manipulating during a literacy activity. There was a significant relationship between being a non-EIR-trained teacher and engaging students in more passive responding, as compared to

EIR-trained teachers, $r = .47$ ($p = .006$). Passive responding was defined as students engaged in reading turn-taking, oral turn-taking, or listening to the teacher during a literacy activity.

Continued Use of the Program

Districts using the EIR program have continued to use the program with good results after the initial training year. In one follow-up study done in 1994, 67% of the teachers across seven districts continued to use the program after the initial year (Taylor, 1995). In year 2 in two districts in which data were collected, it was found that 89% of the children receiving the EIR support were reading independently by the end of first grade. This compares favorably to the rate of 75% of the EIR children reading in May of the previous year in these two districts.

RESEARCH AND EVALUATION ON THE
GRADES 3 AND 4 EIR PROGRAMS

Research on Grade 3–4 Program

The grade 3 EIR program is for children who are not reading on grade level but who are reading on at least an end-of-grade 1 level by fall. The program focuses on building students' reading fluency and comprehension. The grade 4 program is also for children who are not reading on grade level but are reading on at least an end-of-grade 2 level by fall and focuses primarily on comprehension, with fluency also addressed. Both programs use a cross-age tutoring component in which students work for four days on a narrative or informational picture book that they will read to an EIR student who is two grade levels below them.

In one suburban school, it was found that third- and fourth-grade EIR children, who started the year reading at least a year below grade level, approached the district mean in fluency by May. The EIR children were compared to the average children in

each of their classes. (Those who were in the middle third of the class in terms of fall words-correct-per-minute scores; see Table 5.) Although an analysis of variance revealed that the grade 3 average students had higher scores in the spring than the grade 3 EIR students, the EIR students made significantly more growth in words correct per minute during the year, $F(1,30) = 11.64, p = .002$. Also, the grade 4 average students had higher words-correct-per-minute scores in the spring, the grade 4 EIR students made significantly more growth in words correct per minute than the average students, $F(1,19) = 9.47, p = .006$. The EIR children were also assessed on their ability to retell a passage from the QRI (Leslie and Caldwell, 1995) in the fall and spring. As can be seen in Table 5, the grade 4 children made good gains in comprehension, but this remained something the third-grade children needed to work on.

Table 5. Means Scores of EIR and Average Students in Grades 3 and 4

School EE	Number of Students	Mean Wcpm Fall	Percent Reading Grade Level in May	Mean Wcpm Spring	Mean Retelling Spring 4pt. scale
Gr. 3 EIR	15	50	100%	104	2.2 (2.1 in fall)
Gr. 3 Ave. students	17	103		134	
District Mean – Gr. 3		110		117	
GR. 4 Ave. students	11	80	100%	121	3.8 (2.3 fall)
Gr. 4 EIR	11	132		160	
District Mean – Gr. 4		132		145	

* n = number of schools

** Schools included in this category come from the suburban and urban categories.

*** Schools included in this category come from the rural and urban categories.

The children in the grades 3–4 EIR program take their tutoring very seriously and enjoy it immensely. In addition to helping to improve students' reading ability, we have found that the grades 3–4 EIR program improves students' attitudes and concepts about themselves as readers (Taylor, Hanson, Justice-Swanson, & Watts, 1997).

Evaluations of the EIR in Grades 3 and 4

Looking at data from 20 schools and 476 students across all years from 1997–98 through 1999–2000, we found that of the students who had had EIR in grade 3 or 4, 94% were able to read at grade level in May. The mean fluency score for grade 3 students from 17 schools was 91 words correct per minute on a grade level passage. For the five schools on which there were fall and spring data, the third graders averaged 64 words correct per minute in the fall and 92 in the

spring. For grade 3 students (from nine schools) the mean retelling score in the spring was 2.2. For the three schools on which there were fall and spring retelling scores, students in grade 3 had a mean retelling score of 1.9 in the fall and 2.1 in the spring.

For the three schools (one rural, one suburban, and one urban) in which the grade 4 program was used, students averaged 75 words correct per minute in the fall and 114 in the spring. The children at these three schools had a mean retelling of 1.8 in the fall and 2.9 in the spring.

In Table 6, results are summarized for rural schools, suburban schools or districts, and urban schools. Schools with greater than 25% ELL students, and high-poverty schools (greater than 50% of students on subsidized lunch) are also included. (See Table 6 for a summary of results and Appendix E for year-by-year results.)

Table 6. Summary of Evaluations of Grades 3–4

Type of School (Mean percent poverty)	Number of Schools	Percent Reading on Grade Level in May	Gr. 3 Mean Wcpm in Spring(Fall)	Gr. 4 Mean Wcpm in Spring(Fall)	Gr. 3 Mean Retelling Spring(Fall)	Gr. 4 Mean Retelling Spring (Fall)
Rural (46%)	4	96	95 (74)	117 (83)	2.2	2.5 (1.8)
Suburban (16%)	10	96	98	121 (80)	2.3	3.8 (2.3)
Urban (70%)	6	89	77	105 (63)	2.1	2.3 (1.4)
High ELL* (70%)	6	89	77	105 (63)	2.1	2.3 (1.4)
High Poverty** (65%)	9	90	81	111 (73)	2.1	2.4 (1.6)
All Schools	20 (476 students)	94				
Subset of Schools			92 (64) from 5 schools	114 (75) from 3 schools	2.1 (1.9) from 3 schools	2.9 (1.8) from 3 schools

* Schools included in this category come from the suburban and urban categories.

** Schools included in this category come from the rural and urban categories.

RESEARCH AND EVALUATION ON THE KINDERGARTEN EIR PROGRAM

Research on Kindergarten Program

Research has documented that the best predictors of first-grade reading achievement are letter name knowledge and phonemic awareness (Adams, 1990; Snow, Burns, & Griffith, 1998). Lack of knowledge of consonant sounds for children upon entering first grade is also a concern for many first-grade teachers. Simply teaching the alphabet to kindergarten children has not been effective in improving end-of-first-grade reading achievement (Adams, 1990). However, programs attempting to develop phonemic awareness in kindergarten have been found to be effective (Adams, 1990).

The kindergarten program is based on the notion, also suggested by others (Pinnell & McCarrier, 1994), that important, but enjoyable, emergent literacy activities can be used in kindergarten to help children get ready for learning to read in grade 1. The EIR kindergarten program was designed to expose children to good literature, to help them develop their oral language by talking about the stories they heard, to expose them to letter names and sounds through the literature, to develop their understanding of concepts of print as the stories were shared, and to work through a scope and sequence of segmenting and blending words in the stories to develop children's phonemic awareness. The program was developed to be used for 10–15 minutes a day with the entire class. However, the children identified by their teachers as low in emergent-reading abilities receive ten minutes of reinforcement on the activities covered with the whole class. The concept of exposure for the children, not mastery, is stressed in the professional development component of the program.

Study 1

In this initial research study, 133 children (66 experimental and 67 control) from two primary schools in a suburban district in a large metropolitan area took part in the EIR Kindergarten Program. Two kindergarten classes in each school served as experimental classes and two served as control. Teachers using the program received an hour of training once a month from September through April.

Children were assessed on the Emergent Literacy Survey (Pikulski, 1996). The experimental classes had a mean fall letter name score of 38.9 (S.D. = 13.7) and fall rhyme score of 4.6 out of 8 (S.D. = 3.11), whereas for the control classes children knew on average 33.1 letter names (S.D. = 15.5) and had a mean rhyme score of 3.7 (S.D. = 3.3). Using fall rhyme and letter name knowledge as covariates, it was found that children in the kindergarten EIR program scored significantly higher in May on phonemic awareness, $F(1,130) = 4.96$, $p = .028$ and rhyme, $F(1,10) = 4.96$, $p = .028$, as compared to the control group. The experimental children had a mean phonemic awareness score in the spring of 10.1 (S.D. = 5.6) out of 16 and a mean spring rhyme score of 6.7 (S.D. = 2.1) as compared to a mean phonemic awareness score of 7.1 (S.D. = 5.9) and rhyme score of 5.4 (S.D. = 3.0) for the control students. The writing words measure approached significance, $F(1,130) = 3.30$, $p = .07$. The experimental classes averaged 6.2 words correct phonetically (S.D. = 2.8) and the control classes 4.7 (S.D. = 3.9).

Study 2

In an urban school that is 58% poverty with a 34% ELL population, we compared the spring phonemic awareness scores of

kindergarten children ($M = 7.4$, $S.D. = 3.1$) who were designated as EIR target children (e.g., the children identified by their teachers as low in emergent literacy abilities) with the fall phonemic awareness scores ($M = .5$, $S.D. = .9$) of the grade 1 EIR children at the same school. The first-grade children had not had the EIR kindergarten program the year before. A t -test revealed that the kindergarten spring scores were significantly higher than the fall grade 1 scores, $t(61) = 11.82$, $p < .001$.

Study 3

In an urban school with 92% of the children on subsidized lunch, we also found that the spring phonemic awareness scores of the EIR kindergarten children designated as target children ($M = 3.9$, $S.D. = 5.1$) were significantly higher than the fall phonemic awareness scores of the grade 1 EIR children ($M = 2.0$, $S.D. = 2.4$) who had not had the EIR kindergarten program in first grade, $t(104) = 2.48$, $p = .015$.

The next year at this same school, which had a large student mobility rate, we compared the end-of-grade 1 reading levels of children in EIR in grade 1 who had had the EIR kindergarten program with those in EIR in grade 1 who had not had the EIR kindergarten program. The experimental children had significantly higher May reading levels ($M = 1.4$, $S.D. = .4$) than the control children ($M = 1.1$, $S.D. = .3$), $t(46) = 2.32$, $p = .025$. The experimental children had a phonemic awareness score in the fall of first grade of 3.7 ($S.D. = 3.5$) and the control children 2.2 ($S.D. = 3.4$).

Of the 32 experimental children, 18, or 56%, had a phonemic awareness score in the fall of 3 or higher. Twelve of these children were reading on an end-of-first-grade level in May, one was reading at a primer level, one was reading at a pre-primer level, and

four were non-readers. Of the 12 experimental children who had a fall phonemic awareness score of 0, 1, or 2, two were reading on an end-of-first-grade level in May, one was reading at a primer level, and nine remained non-readers. Of the 16 children who had not had EIR in kindergarten, two were reading on an end-of-grade 1 level in May, one on a primer level, and 13 remained non-readers.

Summary of Kindergarten Research Studies

Across all three research studies, students who had the EIR program in kindergarten had higher phonemic awareness scores in the spring than comparison students. In the study that followed students into grade 1, EIR students had higher spring reading level scores in May of first grade than students who had not had EIR in kindergarten.

Evaluations of EIR in Kindergarten

Looking at data from 22 schools and 577 students across all years from 1996–97 through 1999–2000, we found that the students who had had EIR in kindergarten had a mean phonemic awareness score of 7.2 in May. (As reported earlier, research has found that if students score 6 or higher on this test (Taylor, 1991), they are likely to succeed in learning to read in grade 1.) The mean consonant sounds score in May was 15.5. The mean spring letter name score (from 12 schools) for children in EIR was 42.2. The mean fall letter name score (from 12 schools) for children in EIR was 21.0. (See Table 7 for a summary of results and Appendix F for year-by-year results.)

Across schools (averaging 32% poverty) when attendance in the EIR class was voluntary, the mean spring phonemic awareness score of students was 6.7, and it

was 7.4 when the attendance across schools (averaging 39% poverty) was strongly recommended or required. The mean consonant sounds score in May was 17.5 for schools in which EIR was voluntary and 14.9 for schools in which it was recommended or required. The spring and fall letter name scores were 45.9 and 21.9 for voluntary schools and 46.9

and 20.7 for recommended/required schools. In Table 7, results are summarized for rural schools, suburban schools or districts, and urban schools. Schools with greater than 25% ELL students, and high-poverty schools (greater than 50% of students on subsidized lunch) are also included.

Table 7. Summary of Kindergarten Evaluations

Type of School (Mean percent poverty)	Number of Schools	Letter Name Fall	Letter Name Spring	Mean Phonemic Awareness in Spring	Consonant Sounds Spring
Rural (55%)	1	20.0	49.0	9.7	17.4
Suburban (12%)	13	36.0	47.2	8.4	16.6
Urban (75%)	8	15.5	39.0	5.0	13.5
High ELL* (68%)	5	20.7	46.5	7.4	14.9
High Poverty** (%)	9	16.0	40.1	5.5	13.9
All Schools	22 (577 students)			7.2	15.5
Subset of Schools		21.0 (from 12 schools)	42.2 (from 12 schools)		

* Schools included in this category come from the suburban and urban categories.

** Schools included in this category come from the rural and urban categories.

TEACHERS' EVALUATIONS OF THE EIR INSTRUCTIONAL PROGRAM
AND THE EIR PROFESSIONAL DEVELOPMENT PROGRAM

Teacher Evaluation in Grades 1 and 2

Each year, teachers fill out a questionnaire to give feedback on the EIR instructional program as well as on the EIR Professional Development program. In 1999–2000, 90 teachers in two districts completed the questionnaire on the grades 1 and 2 programs. Their responses were very similar to what we have received from teachers over the past ten years. Eighty-eight percent of the teachers said they found the EIR instructional program very easy or easy to implement, giving a rating of 4 or 5 on a 5-point scale. Ninety-six percent of the teachers said that they would implement the program again the following year.

When asked about the positive aspects of the program, teachers mentioned the following: children liked the program and felt successful, the books were good, the program was consistent and well-organized, the strategies could be used by all students, the time for small-group instruction was beneficial, the training was positive, and there was good parent communication. When asked about concerns, teachers mentioned the time to get EIR in every day, the need to keep the other students occupied, their worry about helping those who continued to struggle with learning to read. In terms of what the other children did during the EIR instruction, teachers reported the following: independent reading, partner reading, independent writing, centers, working with a paraprofessional or other adult in the room. When asked about the impact of EIR on the children, teachers mentioned children's positive attitudes about reading, their increased confidence, their experiencing progress, their learning of strategies, their learning to read and liking to read, and their

enjoyment of the literature and activities.

When asked about the EIR Professional Development Program, teachers reported that it helped the way they approached readers in the classroom, that it helped them focus and redirect their methods of teaching reading, that they enjoyed the small-group time and seeing the children grow. When asked what they found most helpful in the training, teachers reported the networking, sharing of ideas, small group discussions, videos, manual, and the learning about teaching of strategies. Quotes from teachers are listed below.

“Wow! They really learned how to read with expression and they even comprehend the story.”

“I never thought I'd see such growth with kids' reading.”

“Great program! I see a carryover of strategies to other areas. I also see good study skills developing.”

“I've been teaching 11 years and **never** really knew how to help struggling readers. My colleague who's been teaching for 30 years said she should have had this course **years** ago. I really think the training is the most comprehensive I've had in teaching. Thank you.”

“The class really helped me in the way I approach **all** readers in the classroom.”

“I enjoyed watching other videos to reinforce what I was doing.”

“I was so glad to have the class! The strength of the program is the training of the teachers. I am so

glad that the classroom teachers now take responsibility for their struggling readers.”

“I think it’s a great program! Like most new things, it was a bit overwhelming at first, but now that we have “lived” through the first year, hopefully it will be a little easier next year.”

“EIR is a very helpful program that works, is easy to implement, and students really enjoy it.”

“Having a meeting each month was very helpful. At times I would gain clarification or just get re-inspired. This is **much better** than hearing it all at the beginning of the year and having no periodic updates.”

Teacher Evaluations in Grades 3–4

In 1999–2000 grades 3 and 4 teachers across buildings took part in the EIR Professional Development Program and implemented EIR. Eight of the nine teachers reported that the instructional program was easy to implement. Seven of the eight said that they would use the program again next year, one said she would use parts of the program, and one said she would not use it again because it was too hard to find the time. When asked about positive aspects of the program, teachers mentioned the time for the students to work in small groups, the opportunity for the students to read real books at their reading level and to experience success. “The small group intense focus is wonderful!” “Every student in the group made tremendous progress.” Teachers reported that the students took responsibility for their learning. “My students are taking more responsibility for their own reading. They don’t look to the teacher for help all the time.” In terms of help for themselves, teachers reported that the shar-

ing of ideas with other teachers was helpful, the learning of strategies to teach the children, the regular meetings to discuss successes and frustrations. “I was more aware of the types of questions I ask students. I also have started to wait longer before I help students figure out words.” “I used the coaching for comprehension strategy with all of my reading groups.”

Teacher Evaluations in Kindergarten

In 1999–00 eighty-five percent of 40 teachers from one district said they found the EIR program very easy or easy to use, 80% said they would use it again the next year, 15% said they would use parts of the program, and only 5% said they would not use it again.

Teachers commented that literature selections were excellent, and children loved the program, especially the literature and the creative dramatics. The writing component of the program was mentioned as especially useful. Teachers commented that the children had a positive engagement with reading and writing, enjoyed sharing experiences related to the stories, and could hear the sounds in words by the end of the year if not sooner. The program helped more children experience success. “The children have learned more than they have ever learned before!”

When asked about the professional development, teachers mentioned the watching of videos, learning about phonemic awareness, sharing of ideas, and talking in small groups as especially helpful. “Meeting once a month is just right! I like to listen to other teachers’ successes.” “I loved watching other teachers teach lessons. This was very valuable!”

Recommendations for Implementation

Based on the questionnaire that teachers are asked to fill out upon completion of their first-year implementation of the program, teachers have reported that a building-level support person was essential for successful implementation of the program. By this, they meant a person who made sure the materials were ready and easily accessible when needed.

The importance of staff development to the success of early reading intervention programs has been stressed (Pikulski, 1994). In particular, Reading Recovery experts have acknowledged that the extensive staff development component is key to the success of their program (Smith-Burke & Jaggar, 1994). As apparent in the above sections on the EIR questionnaires, support in the form of opportunity for teachers to discuss issues pertaining to implementation has been frequently mentioned as an important part of EIR. Monthly meetings have been a significant way for teachers to share successes and concerns as well as to learn new techniques from one another.

In recognition of the importance of staff development, video sharing was incorporated into the professional development

program five years ago as a way to foster sharing of ideas and to facilitate teachers' learning about how to be most effective with struggling emergent readers. Teachers tape a ten-minute segment of themselves working with their EIR group on a portion of the three-day routine. Through the monthly sharing of these videos, teachers learn from one another new ways to handle various parts of the lesson and also learn to refine their instructional techniques.

Not surprisingly, as could be seen from the EIR evaluations of student performance reported earlier, it is clear that teachers get better results with the program when they volunteer to take the training than when it is strongly recommended or required. One idea to consider is providing the training for teacher volunteers in a first year and for teachers who have been inspired by these colleagues' comments about success in a second year.

One other recommended component of EIR is the daily one-on-one reading with a coach in addition to the 20-minute small-group lesson. Unfortunately, due to staffing limitations or unavailability of volunteers, this part of EIR has sometimes been a challenge for schools to set in motion.

SUMMARY AND CONCLUSIONS

Twelve years of research on EIR has provided strikingly consistent findings. Using small-group instruction, instead of the more costly one-on-one instruction of most other primary-grade intervention models, classroom teachers or reading resource teachers can provide struggling readers with an effective intervention program. When coupled with a strong core reading program, this small-group approach to early reading intervention ensures reading success for most students.

The Early Intervention in Reading Program provides high-quality, focused, supplemental reading instruction for children who are struggling to catch on to reading in grades K–2 or for children who need support to continue to make good progress in reading in grades 3–4. The

program focuses on phonemic awareness development (in grades K–2), phonics instruction, application of decoding skills to reading, and comprehension. The strong ongoing professional development component of EIR is an important part of the program, as attested to by the many teachers who have taken the nine-month course of study. The unique web-based delivery system now makes EIR training widely accessible to schools around the country.

There is no “one best program” for preventing reading difficulties, but early reading intervention programs are a powerful part of the solution. EIR is one research-proven approach to helping many children who are at risk of reading failure experience success in reading in the primary grades.

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APPENDIX A

Grade 1 EIR Results from 7 Districts Across 7 Years

Schools (type of regular reading program)	Group	Percent at Rdg Level May – Gr 1		Percent at Rdg Level May – Gr 2	Percent at Rdg Level May – Gr 3	Mean Percentile— Standardized Reading		
		P	1 ²			Fall–Gr 1	Spr–Gr 1	Spr–Gr 2
1. Suburban–Yr 1 (W Lang)	EIR	53	40	72		29	37	
	Cnt	18	11			37	27	
2. Suburban–Yr 1 (Phonics)	EIR	67	54	94	82			
	Cnt	33	10					
3. Rural EIR (Basal)	EIR	90	73					
	Cnt	60	20					
4. Urban (Basal)	EIR	57	29	64		23	28	42
	Cnt	43	7			57	30	23
5. Urban (Phonics) Year 2	EIR	57	28	67	76			
	EIR	68						
6. Urban (Lit Based)	EIR	88	30	97				
	Cnt	30	0					
MEANS Across Schools	EIR Cnt	73 37	42 10	79	79			

APPENDIX B
Grade 2 EIR Results from 1 Urban School Across 2 Years

School (type of regular reading program)	Group	Percent at Reading Gr. 2 Level in May of Grade 2		Percent Reading Gr. 3 Level in May of Grade 3	Mean Percentile Standardized Reading	
		2 ¹	2 ²		Fall-Gr 2	Fall-Gr 3
Urban (basal) – Year 1	EIR	5	43	67	14	13
	Cntl	5	11	53	12	11
Year 2	EIR	0	80		12	19
	Cntl	0	0		9	8

APPENDIX C - GRADE 1 EVALUATIONS OF STUDENT PERFORMANCE

Grade 1 1999–2000 Internet-Based Delivery System (pilot year)

School (percent poverty)	Number of Students	Mean Phonemic Awareness in Fall	Percent Reading Primer or Higher in May	Mean Words Correct per Minute, Spring
School A (20%) – rural, V	20		60	37.0
School B (3%) – rural, V	8	4.9	100	69.1
School C (18%) – rural, V	8		88	42.5
School D (55%) – rural, R	75	9.8*	64	46.1
Schools' Mean			78	48.9

* All children had been in the EIR kindergarten program the year before, which is a likely reason their phonemic awareness scores were so high.

Grade 1 1999–2000 On-Site Delivery System*

School (percent poverty)	Number of Students	Mean Phonemic Awareness in Fall	Percent Reading Primer or Higher in May	Mean Words Correct per Minute, Spring
School E (13%) – suburb, V**	26	3.8	81	43.9
School F (NA) – suburb, V	19	3.7	74	45.6
School G* (83%) – urban, R***	14	NA	50	33.0
Schools' Mean		3.8	67	40.8
District AAA (10%) – suburb, R	191 (7schools)	2.6	69	45.7
District BBB (6%) – suburb, V	102 (5 schools)	3.8	74	49.6
Districts' Mean		3.2	72	47.7

* Traditional, on-site delivery system used unless Internet delivery system specified

** V = voluntary participation, R = strongly recommended or required

*** School had 39% ELL students, used **Early Success**

Grade 1 1998–1999

School (percent poverty)	Number of Students	Mean Phonemic Awareness Score in Fall	Percent Reading Primer or Higher in May	Mean Words Correct per Minute, Spring
School H (21%) – rural, V	39		66	43.5
School I (24%) – rural, V	32		71	38.8
School C (18%) – rural, V	45		62	34.7
School D (55%) – rural, R	68		55	35.3
School J* (62%) – urban, R	41		70	42.9
School J1 – non ELL	(20)		(85)	(51.4)
School J2 – ELL students	(23)		(56)	(35.6)
School G** (83%) – urban, R	25		52	38.9
School L1*** (76%) – urban, R	29		69	48.2
School L1 – non ELL	(22)		(64)	(48.3)
School L2 – ELL students	(7)		(86)	(48.1)
Schools' Mean			66	40.3
District CCC (15%) – suburban, R	496 (26 schools)			
District Mean		2.6	68	36.2

* School had 34% ELL students

** School had 39% ELL students, used **Early Success**

*** School had 30% ELL students, used **Early Success**

Grade 1 1997–1998

School (percent poverty)	Number of Students	Mean Phonemic Awareness Score in Fall	Percent Reading Primer or Higher in May
School M (29%) – rural, V	14		100
School N (44%) – rural, V	17		82
School O (16%) – rural, V	43		80
School P (27%) – rural, V	6		100
School Q* (25%) – rural, V	6		68
School R** (58%) – urban, R	28	.5	71
School S (39%) – urban, V	10		60
School T *** (83%) – urban, R	18	1.3	67
School U (92%) – urban, R	38	3.2	47
School V**** (58%) – urban, V	22	5.2	64
Schools' Mean		2.4	74
District CCC (15%) – suburban, R	326 (25 schools)		82
District DDD (11%) – suburban, R	228 (8 schools)		70
Districts' Mean	76		

- * School used **Early Success**
- ** School had 34% ELL students
- *** School had 28% ELL students
- **** School had 34% ELL students

Grade 1 1996–1997

School (percent poverty)	Number of Students	Mean Phonemic Awareness Score in Fall	Percent Reading Primer or Higher in May
School W* (75%) – urban, V	25		56
School S (39%) – urban, V	6		100
School X** (82%) – urban, V	23	.5	78
School Y*** (78%) – urban, R	39	2.6	51
School V**** (58%) – urban, V	8	1.7	88
School U (92%) – urban, R	48	2.4	38
School Z (13%) – rural, V	17		81
Schools' Mean		1.8	70
District CCC (15%) – suburban, R	103 (15 schools)		78
District DDD (11%) – suburban, R	69 (3 schools)		80
Districts' Mean			79

- * School had 34% ELL
- ** School had 33% ELL students
- *** School had 15% ELL students
- **** School had 34% ELL students

APPENDIX D – GRADE 2 EVALUATIONS OF STUDENT PERFORMANCE

Grade 2 1999–2000 Internet-Based Delivery System

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Percent Reading Gr. 2 in May	Mean Wcpm in Spring
School A* (85%) – urban, V	22	24	64	69
School C (18%) – rural, V	31	42	97	71
School B (3%) – rural, V	6	26	100	86
School D (55%) – rural, V	40	31	72	62
Schools' Mean		31	83	72

* School had 29% ELL students

Grade 2 1999–2000 On-Site Delivery System

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Percent Reading Gr. 2 in May	Mean Wcpm in Spring
School E (13%) – suburb, V	9	22	89	73
School G* (83%) – urban, R	30	28	90	66
Schools' Mean		25	90	70
District AAA (10%) – suburb, R	169 (7 schools)	24	95	79
District BBB (6%) – suburb, V	74 (5 schools)	21	96	78
Districts' Mean		23	96	79

* School had 34% ELL students

Grade 2 1998–1999

School (percent poverty)	Number of Students	Percent Reading Gr. 2 in May	Mean Wcpm in Spring
School H (21%) – rural, V	31	100	94
School I (24%) – rural, V	26	100	61
School D (55%) – rural, R	42	81	54
School J* (62%) – urban, R	39	80	56
School J1 – non ELL	(13)	(85)	(56)
School J2 – ELL	(26)	(77)	(56)
School G** (83%) – urban, R	16	88	87
School L*** (76%) – urban, R	13	100	68
School L1 – non-ELL	(9)	(100)	(70)
School L2 – ELL	(4)	(100)	(64)
Schools' Mean		92	70

* School had 34% ELL students

** School had 39% ELL, used **Early Success**

*** School had 30% ELL, used **Early Success**

Grade 2 1997–1998

School (percent poverty)	Number of Students	Percent Reading Gr. 2 in May
School AA* (36%) – rural, V	26	96
School M (29%) – rural, V	12	100
School N* (44%) – rural, V	16	75
School R** (58%) – urban, R	34	38
School T *** (83%) – urban, R	12	67
School BB**** (48%) – urban, V	11	63
School S (39%) – urban, V	8	100
School U (92%) – urban, R	47	49
School V***** (58%) – urban, V	14	64
Schools' Mean		72
District DDD (11%) – suburban, R	181 (7 schools)	92

- * School used **Early Success**
- ** School had 34% ELL students
- *** School had 28% ELL students
- **** School had 22% ELL students
- ***** School had 34% ELL students

Grade 2 1996–1997

School (percent poverty)	Number of Students	Percent Reading Gr. 2 in May
School YZ (13%) – rural, V	27	90
School CC (58%) – urban, V	5	80
School DD* (81%) – urban, V	12	92
School Y (78%) – urban, R	33	45
School U (92%) – urban, R	21	19
School V** (58%) – urban, V	16	88
Schools' Mean		69
District DDD (11%) – suburban, R	35 (3 schools)	84

- * School had 26% ELL students
- ** School had 34% ELL students

APPENDIX E – GRADE 3–4 EVALUATIONS OF STUDENT PERFORMANCE

Grade 3 1999–2000 Internet-Based Delivery System

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Mean Wcpm in Spring	Percent Reading Gr. 3 in May	Mean Retelling, Spring, 4-point scale
School D* (55%) – rural, V	43	62	86	91	1.6 (1.7 fall)
School FF* (85%) – urban, V	13	50	70	92	2.5 (2.0 fall)
School A (20%) – rural, V	28	72	105	100	2.5 (NA fall)
Schools' Mean		61	87	94	2.2

* School had 29% ELL students

Grade 3 1998–1999

School (percent poverty)	Number of Students	Percent Reading Gr. 3 in May	Mean Wcpm in Spring	Mean Retelling, Spring, 4-point scale
School D (55%) – rural, R	35	94	88	2.4
School J* (62%) – urban, R	45	96	71	2.1
School J1 – non ELL	(16)	(94)	(74)	(1.9)
School J2 (ELL)	(29)	(97)	(70)	(2.3)
School T (83%) – urban, R -TESOL	8	100	97	
School L** (76%) – urban, V	9	100	84	1.8
Schools' Mean		98	85	2.1
District DDD (11%) – suburb, R	193	95	97	2.3

* School had 34% ELL students

** School had 30% ELL students

Grade 3 1997–1998

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Mean Wcpm in Spring	Percent Reading Gr. 3 in May	Mean Retelling, Spring, 4-point scale
School EE (35%) – suburb, V (in district DDD)	14	50	104	100	2.2 (2.1 in fall)
School R* (58%) – urban, R	10		65	50	1.6
Schools' Mean			85	75	1.9

* School had 34% ELL students

Grade 4 1999–2000 Internet-Based Delivery System

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Mean Wcpm in Spring	Percent Reading Gr. 4 in May	Mean Retelling, Spring, 4-point scale
School D (55%) – rural, V	42	83	117	100%	2.5 (1.8 in fall)

Grade 4 1997–1998

School (percent poverty)	Number of Students	Mean Wcpm in Fall	Mean Wcpm in Spring	Percent Reading Gr. 4 in May	Mean Retelling, Spring, 4-point scale
School EE* (35%) – suburb, V	11	80	121	100%	3.8 (2.3 fall)
School R* (58%) – urban, R	15	63	105	93%	2.3 (1.4 fall)
Schools' Means		72	113	97%	3.1(1.9 fall)

* School had 34% ELL students

APPENDIX F – KINDERGARTEN EVALUATIONS OF STUDENT PERFORMANCE

Kindergarten 1999–2000 Internet-Based Delivery System

School (percent poverty)	Number of Students	Letter Name Fall	Letter Name Spring	Phonemic Awareness Spring*	Consonant Sounds Spring
School D (55%) rural, R – EIR students	34	20.0	49.0	9.7	17.4
School D – Ave. and above	(16)	(40)	(52)	(11.7)	(11.7)
School GG (20%), suburb, V – EIR students	15		NA	6.2	18.5
School GG – Ave. and above	(25)		NA	(11.0)	(21.0)
Schools' Means				8.0	18.0

* score above 5 is satisfactory

Kindergarten 1999–2000 On-site Delivery System

School (percent poverty)	Number of Students	Letter Name Fall	Letter Name Spring	Phonemic Awareness Spring*	Consonant Sounds Spring
School F (NA), suburb, V – EIR students	21		50.4	6.7	18.7
School F – Ave. and above	(49)		(52.0)	(11.2)	(22.4)
School E (13%), suburb, V – EIR students	16	30.3	47.5	9.2	18.8
School E, Ave. and above	(26)	(44.6)	(51.5)	(10.8)	(20.8)
Schools' Means – EIR			49.0	8.0	18.8

* score above 5 is satisfactory

Kindergarten 1998–1999

School (percent poverty)	Number of Students	Letter Name Fall	Letter Name Spring	Phonemic Awareness Spring*	Consonant Sounds Spring
School G** (83%), urban, R	13	25.0	48.5	8.2	19.6
District DDD (11%), suburb, R – EIR Students	159 (8 schools)		46.3	8.4	16.1
District DDD – Ave. and above	(90)		(50.8)	(14.3)	(20.7)
School GG – Ave. and above	(25)		NA	(11.0)	(21.0)
Schools' Means				8.0	18.0

* score above 5 is satisfactory

** School has 34% ELL students

Kindergarten 1997–1998

School (percent poverty)	Number of Students	Letter Name Fall	Letter Name Spring	Phonemic Awareness Spring*	Consonant Sounds Spring
School V** (58%), urban, R – EIR students	33	7.7	23.0	7.4	7.1
School V – Ave. and above	(9)	(32.9)	(49.7)	(11.6)	(17.8)
School T*** (83%), urban, R	14	8.4	28.1	3.7	7.4
School U (92%), urban, R	59	17.2	45.8	3.4	16.8
School V**** (58%), urban, V	11	19.6	46.3	8.0	16.8
Schools' Means		13.2	35.8	5.6	12.0

* score above 5 is satisfactory

** School has 34% ELL students

*** School has 28% ELL students

**** School has 34% ELL students

Kindergarten 1996–1997

School (percent poverty)	Number of Students	Letter Name Fall	Letter Name Spring	Phonemic Awareness Spring*	Consonant Sounds Spring
School U (92%), urban, R	54	23.1	40.0	3.8	12.9
School V** (58%), urban, R	16	15.9	39.0	3.2	15.4
School Y (78%), urban, EIR, R	23	7.0	41.6	2.0	12.0
School Y, Ave. and above	34	(32.6)	(45.8)	(5.4)	(17.7)
Schools' Means		15.3	40.2	3.0	13.4
District EEE (20%), suburb, R, experimental	67 (2 schools)	38.9	48.9	10.1	15.6
District EEE (20%), suburb, R, control	68	33.1	46.8	7.1	15.6

* score above 5 is satisfactory

** School has 34% ELL students

APPENDIX G – BACKGROUND ON EIR

About the Author

EIR was developed by Professor Barbara M. Taylor of the College of Education and Human Development at the University of Minnesota with assistance from many Minnesota teachers. Professor Barbara M. Taylor, a graduate of Tufts University and Virginia Polytechnic Institute and State University, holds the Guy Bond Chair in Reading and Literacy. A specialist in early literacy and a member of the University of Minnesota faculty since 1978, she works extensively in inner-city schools to improve literacy in kindergarten through fourth grade. She is currently the principal investigator of a large CIERA study funded by the U.S. Department of Education on school reform in reading in high-poverty schools.

What Is the Early Intervention in Reading Program (EIR)?

The Early Intervention in Reading Program (EIR[®]) is a daily, 20-minute supplemental small-group reading program that helps struggling first and second graders learn to read and helps build fluency and comprehension in grade 3 and 4 students who need more reading support. The kindergarten program helps students develop phonemic awareness and emergent literacy skills as they interact with literature. EIR has been used successfully by classroom and Title 1 teachers in schools around Minnesota and across the country over the past ten years.

Proven Results

Twelve years of research with schools across the country reveal that, on average, 72% of the at-risk first-grade children in the EIR program are reading independently at the end of first grade and 84% are reading at

grade level in second grade; 85% of second graders who enter second grade reading at a mid-first-grade level or below are reading at a second-grade level by the end of second grade. Children in grades 3 and 4 who begin the year reading below grade level are decoding on grade level by the end of the year and have been found to make significantly greater gains in reading fluency than average readers in their classrooms. Children in the kindergarten program have been found to make significantly greater gains in phonemic awareness measures than children not in the program.

Success in Schools with High Numbers of Students of Poverty or ESL Students

EIR has proven successful with children in high-poverty schools, although it may take up to three years for students to achieve targeted results. Results in schools where more than 50% of children participate in the subsidized lunch program indicate that after one year of using EIR, 61% of the at-risk first graders are reading well by the end of first grade, and that 70% of second-grade students who come to grade 2 not yet reading at a primer level are reading on a second-grade level by May. In a recent study, all of the schools in a large urban district that used EIR consistently showed reading gains. Also, EIR has been used extensively with ESL (Hmong) students with very good results (71% reading independently by the end of first grade).

Staff Support and Development

The EIR program is delivered through a multimedia Internet program with support from an EIR trainer. The EIR instructional program can be readily integrated into classroom activities. Classroom teachers—or classroom teachers working with Title 1

teachers—provide supplemental instruction to a group of five to seven struggling first-, second-, third-, or fourth-grade readers for 20 minutes each day. In addition, a one-on-one reading component is typically provided by trained older students, educational assistants, or parent or community volunteers.

Monthly staff development sessions help teachers refine the coaching they provide their students. This coaching helps children learn successful decoding strategies. As teachers monitor children's use of these strategies, the students gain confidence in their ability to read independently.

Parent Involvement

Recognizing the importance of parental support for literacy, EIR includes a parent education component. At the start of each school year, parents are invited to learn more about EIR and their role in their children's success. Parents are asked to participate by listening to their children read stories that are sent home once the children are fairly successful at reading and by helping with other simple follow-up activities.

Essential Elements of EIR in Grades 1 and 2

- Daily (20–30 minutes) supplemental instruction for a group of five to seven struggling readers in grades 1 or 2 provided by a classroom teacher or a classroom teacher and a special reading teacher working collaboratively
- Sound instructional procedures that follow a routine and regular pace (three to four days per story) and include:
 - repeated reading of stories

- phonemic awareness training
- working with words activities
- guided writing
- one-on-one reading
- strategies for independence
- Consistent coaching by the teacher to foster strategy use and independence
- Regular monitoring of progress
- Stories easy enough so that children are successful and yet challenging enough so that children progress
- Parent involvement
- Ongoing teacher support and staff development

EIR Kindergarten: A Literature-Based Emergent Literacy/Oral Language Program

- Whole-class instruction with small-group follow-up
- Literature enjoyment
- Discussion of stories related to children's lives
- Creative dramatics
- Emergent literacy development
 - concepts of print
 - rhyme
 - phonemic awareness—hearing sounds and blending sounds together in words taken from the stories read aloud
 - letter/sound recognition
- Exposure rather than mastery
- Extra instruction/practice for children with low emergent literacy and oral language abilities

EIR 3/4: A Cross-Age Tutoring/Strategy Instruction Program for Struggling Readers in Grades 3 and 4

- Improved reading attitudes, self-concept, and reading achievement

- Weekly tutoring of children in EIR in grades 1 or 2 and follow-up debriefing sessions
- Daily (20 minutes) supplemental small-group instruction and practice
- Focus on word recognition, fluency, vocabulary, and comprehension
- Reciprocal teaching model
 - asking one or two important questions about a text
 - summarizing important ideas
 - clarifying anything that is confusing
 - making predictions about what will be read next

Praise for the EIR Program

“I really appreciate the strategies I learned and the success I felt.”
—Minneapolis second grade teacher

“The program really helped my students with phonemic awareness—especially with rhyme, beginning sounds, and blending and segmenting. I was thrilled with how some of my kids tested at the end of the year”

—Osseo kindergarten teacher

“[EIR] had a high positive impact on the children involved. I will use EIR concepts with all readers next year, even if they are not in the EIR program.”

—Minneapolis second-grade teacher

“In 10 years I have never felt so good about my first graders—none of them are having any trouble.”

—Anoka first-grade teacher

“[Positive aspects of the program include] monthly group meetings, viewing videotapes [of best practice], suggestions and ideas from other teachers who have used the program, and strong, effective strategies to use with students.”

—St. Paul first-grade teacher

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