Preventing Reading Failure in First Grade
by Barbara M. Taylor, Barbara J. Frye, Ruth Short, and Brenda Shearer

There is no skill more basic to success in school than reading ability. Yet, the probability is very high that a child who is disabled in reading at the end of first grade will remain a disabled reader. Research on reading disability indicates that the best way to break the cycle of failure in school experienced by poor readers is to identify these children as early as possible and to provide a reading intervention program right away.

A successful reading intervention program in Ohio has done just that. The program, called Reading Recovery, identifies the 20 percent of children entering first grade who are determined to be at greatest risk in terms of failing to learn to read. These students are individually instructed in reading for thirty minutes a day by tutors who have been trained in the Reading Recovery procedures. After fifteen weeks, 70 to 80 percent of the children have left the program because they have caught up to their peers in reading. Follow-up studies have found that these students seldom need any further remedial reading instruction.

One limitation of the Reading Recovery program is that it is very expensive because of the individual tutoring and, therefore, difficult for schools to provide. Another limitation is that it is a pull-out program; children leave their classrooms each day to be tutored.

It is likely that a considerable number of students who are in the lowest 20 percent of a class in reading ability will be referred to special education services as learning disabled or mildly handicapped students. A large percentage of special education students have reading problems. However, within the field of special education there has been a movement in Minnesota and in the nation toward more quality education for learning disabled and mildly handicapped children within the regular classroom. Proponents of the regular education initiative argue against segregating children from...
their peers and against the fragmentation of instructional programs which results when the traditional pull-out approach is used for remedial services to students with learning difficulties.

Early Intervention in Reading

An appealing alternative to the Reading Recovery tutorial program is training first grade teachers to use similar remedial reading intervention procedures with the lowest-achieving first graders within the regular classroom. In the research project described here, six first grade teachers in one school district were trained over the course of a school year to use a special reading program called Early Intervention in Reading, developed by the project director. The program is similar in a number of ways to the successful Reading Recovery program initiated in Ohio. The intent of Early Intervention in Reading is to provide a special reading program within the regular classroom for at-risk children in first grade before they have a chance to actually fail in reading or fall considerably behind their peers.

St. Louis Park Public Schools, the district in which the program was implemented, hoped to see a large percentage of these lowest-achieving students reading well by the end of first grade. The district also hoped to see significantly fewer students enrolled in special education as a result of this program.

The Research Design

Thirty lowest-achieving first grade students in six classrooms were selected in early October 1989 to participate in the Early Intervention in Reading Program. Students were chosen based on their teacher’s judgment and a test of sounding and blending abilities developed by the project director. The twelve-item test, which examines a child’s ability to segment words into individual sounds and to blend the sounds together into words, has been quite successful in identifying the children who will and will not learn to read by the end of the first grade.

Thirty additional low-achieving students from six other classrooms served as controls. They went through the same testing as the experimental students, but did not receive the reading intervention program. Thirty children of average ability in the six experimental classes also participated in the testing so that comparisons could be made with the low-achieving experimental students.

The six experimental teachers received initial training in the Early Intervention in Reading Program during an all-day workshop the summer before the program began. Several after-school meetings were held to deal with concerns or issues pertaining to the program. The most valuable teacher training, however, was provided by project assistants who were doctoral students in reading education at the University of Minnesota. Working under the guidance of the project director, the assistants spent approximately forty-five minutes twice a week in the first grade classrooms while the program was being used. They took notes on the program in operation and they also listened to children from the experimental group read individually. Later in the day they provided teachers with feedback on how the program was working and offered suggestions for making the program more effective.

Elements of the Early Intervention Program

In the experimental program, five lowest-achieving students per class worked as a group for fifteen or twenty minutes a day with the classroom teacher. These group meetings began the end of October and ran through April. Approximately two other low-achieving students per class (not serving as experimental subjects) joined the program in December, January or February because their teachers were concerned about their slow progress in reading. These students joined on a regular or part-time basis depending on what the teacher felt would be beneficial.

During the rest of the daily reading period, the children in the experiment participated in the regular reading program. In the St. Louis Park schools the regular reading program does not group by ability for reading instruction. The program uses children’s literature rather than textbooks for reading. Phonics instruction is included in the regular first grade program. The experimental intervention program also used children’s literature. It provided considerable instruction in phonemic segmentation and blending, not stressed in the regular reading program. Materials for the Early Intervention in Reading Program consisted of thirty-six picture books, summaries of these picture books on a chart and in booklet form, and fourteen additional short, easy-to-read picture books. All materials ranged from 40 to 200 words in length.

In the experiment, children spent three days reading a story summary. On the first day, they heard the teacher read the original picture book to their entire class. The teacher then worked with them, reading the summary of the story on a chart. She stopped at appropriate words (three-letter words at first) to model how to segment the words into phonemes, or individual sounds, and blend the phonemes together. For example, cat would be segmented into the three sounds c-a-t. She also modeled the use of context clues as an aid in decoding. The experimental students developed their phonemic segmentation and blending ability and phonics knowledge by writing five words from the story. They wrote the phonemes from a word in a series of boxes, sounding out f-e-e-t and blending the sounds into feet, for example. The writing was done with as much help from the teacher as needed.

On the second and third days, the children reread the story summary from the chart with the teacher’s help. During their reading, the teacher provided instruction in symbol-sound correspondences, particularly for vowel sounds. The teacher continued to model phonemic segmentation and blending and the use of context clues, asking, for example, "What word would make sense in this sentence?"

The children agreed upon one sentence related to the story which they each wrote at the back of their story summary booklet with the teacher’s help. The teacher was careful to provide students with the letters for sounds they could not spell successfully, but expected them to tell her the correct letters for many of the sounds in the words they were writing. For the word said, the teacher might ask the children what letters were at the beginning and end of the word and tell them that ai was in the middle (since ai is phonetically irregular in this word).

In addition to working with the teacher for fifteen to twenty minutes a day, the children in the experimental program also worked individually several times a week with a trained aide or a project assistant for five to ten minutes a day. They reread their personal copies of the story summaries and illustrated them. The aide was careful to provide as much help as needed with difficult words, but encouraged the children to use the strategies they had been learning from the teacher to work out unknown words on their own.

A goal was to have the children reading their story summaries successfully (with at least 93 percent accuracy) by the end of the third day. After the third day the children no longer needed to read aloud with their parents. They were asked to return the booklets to school, however, so they could continue to practice rereading "old" stories.

Fourteen picture books were used at the end of the program to help the children make a transition to independent reading of new material. First, the teacher would read the book to the entire class. Then she worked with the project children individually or in pairs as they reread the story to her. When children came to difficult words, the teacher primarily asked questions which encouraged the children to use what they
work with the lowest-achieving readers. The weeks with the special teacher were spread out over the first six months of the school year.

Testing
At the beginning of May, all experimental and control children were individually tested through an informal reading inventory in which children read passages of increasing difficulty until the material became too difficult. In addition, they read a 150-word selection from an easy reader—a type of book typically read by children at the end of first grade. To test phonic knowledge, children were asked individually to provide sounds for fifteen vowels or vowel pairs (such as ee, ai). And finally, they were given a standardized reading test by their regular classroom teacher. The reading readiness form of the test was given in September and the form for the end of first grade in May.

Findings
The results of this study clearly indicate that the Early Intervention in Reading Program was effective in getting low-achieving first graders on to a good start in reading. Sixty-seven percent were reading by the end of first grade. Approximately 50 percent were reading at an end-of-first grade level or better. As a group, their mean percentile score on the standardized reading test increased from 29 to 37 between September and late April. In comparison, only 36 percent of the students in control classes were reading by May. Approximately 22 percent were reading on an end-of-first grade level or better. As a group, the control students’ mean percentile score on a standardized reading test went from 34 in September to 27 in late April. Statistical analyses revealed that experimental children scored significantly higher than the control children at the end of the school year on the standardized reading test and in knowledge of vowel sounds.

The control students in this study looked quite similar in beginning and end-of-year performance measures to ten low-achieving first graders from St. Louis Park for whom similar data were collected during the 1988-89 school year. Only three of these ten students (30 percent) were reading in May. Their mean percentile score on the standardized reading test was 36 in September and 25 in late April. It is important to note that these ten low-achieving first graders from 1988-89 had different teachers than the control students during this research project in 1989-90.

When compared to students of average ability, the children in the Early Intervention in Reading Program did not fare too badly. Eighty-five percent of the average students were reading in May, approximately 57 percent at an end-of-first grade level or better. Average students had a mean percentile score of 52 and 51, in September and April, on the standardized reading test.
For the most part, the children (approximately two per class) who joined the experimental program in December or later on either a regular or irregular basis were not reading as well in May as the thirty children who began the program in October. This finding suggests that it is important to get low-achieving first graders into a special reading intervention program as early as possible in the fall of a school year and to ensure that the program is carried out on a regular basis.

The running records show that the experimental children were successful throughout the program. By the end of the third day on a story, children, on the average, were able to reread just-covered stories in the program with 94 percent accuracy. This suggests that it is important to carefully consider the length of stories (or story summaries) that children read so that they are experiencing success frequently and consistently.

Placements in Special Education

A comparison was made of the number of first grade students who qualified for special education learning disability services in first grade during the 1987-88, 1988-89, and 1989-90 school years. In 1987-88, 11.3 percent qualified. In 1988-89, 8.0 percent qualified. In 1989-90, 5.2 percent of the students in the experimental classes qualified and 7.2 percent in the control classes qualified. This indicates that during the year when the Early Intervention Program was initiated, fewer first grade children were placed in special education programs than in previous years.

Conclusions

Early Intervention in Reading was a successful program for preventing reading failure among first graders. The program, used by classroom teachers as a supplement to the developmental reading program, helped many low-achieving students get on to a good start in reading. Children in the program were reading significantly better in May than comparable children who were not in the program. Additionally, first grade placements in special education were down in the district as compared to previous school years, and were especially low for those in the experimental classes.

There are a number of components of the program which probably contributed to its success:

- First, children in the program received special supplemental instruction on a regular basis each day from their classroom teacher.
- Second, this instruction, based on sound practices supported by research, made use of quality literature, developed students' phonemic segmentation and blending ability, and taught students phonics and contextual analysis skills. Children were engaged in repeated reading of stories and in writing about these stories.
- Third, children were successful in the program. Running records of children's oral reading show that at the end of three days, the children were able to read the stories they had been working on independently and with a high degree of accuracy. Teachers reported that the majority of children felt very positive about the program.

Early intervention in Reading Program, unlike the Reading Recovery Program developed in Ohio, appears to be a cost-effective, in-class intervention program that can be provided by the classroom teacher. Children in the program were not pulled out of class for small group instruction or individual tutoring by another teacher.

Further research and development of the Early Intervention in Reading Program is needed. The St. Louis Park District has hired the equivalent of two half-time teachers to help implement the program in all fourteen of its first grade classrooms for the 1990-91 school year. Meanwhile, the project director is working with four classroom teachers and two basic skills teachers in the White Bear Lake Area Public Schools as they implement the program in 1990-91. It is hoped that through these efforts the Early Intervention in Reading Program will continue to be researched, developed, and used.

This reading intervention program, like Reading Recovery, has demonstrated that many low-achieving students, who might otherwise fail to learn to read, can in fact read by the end of first grade. It is important that intervention for these students begin right away in the fall and continue on a regular basis during the first grade school year. Extra help with reading skills, through the Early Intervention in Reading Program, can help prevent children from being labeled as failures at the beginning of their school experience, and it can perhaps save education dollars by diminishing the need for special education.

Barbara Taylor, project director of this study, is a professor of curriculum and instruction in the University of Minnesota's College of Education. She teaches courses on reading, language arts, and children's literature. Her current research centers on early intervention programs, like the one described here, and on the use of literature in elementary reading programs. She has co-authored a textbook on reading difficulties and has a second book forthcoming in February, Reading Together, for parents about reading with their children. Barbara Frye received a Ph.D. in education from the University of Minnesota in July 1990. She is an assistant professor of education at the University of South Florida at St. Petersburg. Ruth
Do Highway Funds Spur Economic Development?

by Yorgos J. Stephanedes

Where should a state spend money if it wants to boost its economy? We recently studied this issue, looking at the effects that highway funds have on economic development. We examined changes in local employment and income after money was spent on Minnesota highways and the influence of local economic changes on highway funding.

Background

Most states in the Upper Midwest have a dispersed population, which means that considerable investment in a transportation infrastructure is required. Investment in transportation is typically a major component of the state budget, even though federal aid is also available. In the United States, state spending for highways totaled $38.2 billion in 1986, representing 9 percent of state budgets. Spending on highways rated third, after education and welfare. Recently, most states in the Upper Midwest have been assuming a greater role in designing their own economic development programs. Investment policies directed at improving the transportation infrastructure play a key role in such programs.

Thirty-six states explicitly consider regional economic development as a justification for highway funding and as one factor which influences decisions about the highways in which to invest. In the Upper Midwest, one of the most ambitious programs is Iowa's RISE (Revitalize Iowa's Sound Economy), which provides $27 million in annual funding dedicated to highway construction and improvement projects intended to foster economic development over a five-year period. The inclusion of regional development objectives in highway funding is valid, however, only if highways have a significant impact on regional development, if they create jobs and increase income. There is considerable disagreement as to whether, and in what degree, this is the case.

Our findings indicate that in Minnesota government plays both an active and a reactive role in regional economic development. Government is a reactive player when it improves highways to support economies that are already healthy or improving. It has done this, often effectively, in regional centers, where it rewards development with improved highways that, in turn, act as catalysts for more development by improving access and removing bottlenecks. Government becomes an active player when it attempts to stimulate development in local economies that are weak or deteriorating. Such attempts usually occur in rural areas, but are not always effective. Improved roads tend to hurt the economies of rural areas, in the long run, if the areas are located near regional centers. If they are far from regional centers, on the other hand, the areas may benefit from improved roads, which can provide better access for timber and farm products going to market and improved access for tourists coming into the area.