

## Achieving Literacy

### Prevention Rather Than Remediation

In this Chapter from *Changing Futures: The Influence of Reading Recovery in the United States*, the authors present compelling arguments for investment in the prevention of literacy failure in contrast to later efforts at remediation. They cite research that shows an investment in at-risk children early, before they experience persistent long-term failure in literacy, is a sound investment of resources resulting in reductions in costly longer-term placements in special education and retentions in grade. As well, children who continue to struggle with literacy become adults who are at significantly greater risk for poor health, incarceration, unemployment, and dependence on public assistance.

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## The Economy of Prevention: A Compelling Argument for Preventing Failure

Prevention has become a hallmark in the health sciences and has been shown to reduce the incidence of lingering problems and the costs associated with them. The health and medical fields have been forced to examine costs relative to benefits and effects due to escalating health costs, changes in fee reimbursement systems, the aging of the population, the costs of expanding technologies, and the allocation of resources for interventions for critical diseases (Hummel-Rossi & Ashdown, 2002).

Evaluating prevention costs relative to benefits and effects in education has received less attention despite the fact there are compelling reasons to consider prevention of failure a top priority for study from all angles. Indeed there are many motivators for considering education costs, including shifting demographics, increasing pressures on educational budgets, and large and increasing numbers of disadvantaged and special needs students (Hummel-Rossi & Ashdown, 2002). A notable exception in education was the evaluation of the Perry Preschool Project (Barnett, 1985; Barnett & Escobar, 1987). The researchers addressed the question, “Can early intervention be economically efficient?” They found that early intervention for disadvantaged children yields an economic return that renders it a good investment relative to other uses of society’s resources.

Among the most important findings were reductions in the need for special education, reductions in crime and delinquency, increased employment and earnings, and decreased dependence on welfare. Monetary benefits were estimated for the participants, society, taxpayers, and the potential victims of crime. There were also important outcomes for which dollar values could not be estimated: increased educational attainment and decreased births to teenage mothers. The Perry Preschool Project was effective in shaping public policy that supported funding for early intervention with disadvantaged children because it was found to be effective and profitable for taxpayers.

In a comprehensive review of the literature relating to cost analysis, Hummel-Rossi and Ashdown (2002) offered some considerations related to cost analyses in education:

- There is much to learn from the cost analysis work in the fields of health and medicine; education is also a service delivery system.
- In deciding which programs to compare when analyzing costs, there should be evidence that all programs compared produce the desired outcomes.

- The analysis of costs of educational programs is more complex than it initially appears. Numerous factors influence such analyses, including the needs of the population served, the duration of the intervention, and the perspectives and scope of the intervention.
- The selection of corresponding measures of success or outcomes is critical. Measurements must be designed to assess the full range of costs and effects, including quantitative and qualitative outcomes. Indicators that are more difficult to assess such as student satisfaction, self-esteem, teacher satisfaction, and parent perceptions may be important factors in the analysis.
- In education there are many groups that have a stake in resource allocations and decision making (e.g., administrators, teachers, boards of education, students, parents, tutoring companies, textbook publishers, and taxpayers). Diverse stakeholder interests must be acknowledged when analyzing the cost of educational strategies.

Hummel-Rossi and Ashdown (2002) recommended a worthwhile protocol for cost-effectiveness studies in education that should contribute to greater understanding and rigor in the future of educational research.

In this chapter we argue that effective prevention efforts in education, in this case Reading Recovery as an early intervention to prevent literacy failure, will reduce the need for more expensive, long-term measures that will inevitably follow the occurrence of failure. As a secondary prevention effort, Reading Recovery identifies children as soon as the learning process goes wrong and offers timely, effective, short-term intervening action. The emphasis is on the *economy of prevention* because we know that the costs of literacy failure to schools and to society are exorbitant. If we can teach the lowest children to read and write successfully in Grade 1, the cost of that service “is a bargain” (Cunningham & Allington, 1994, p. 255).

## Theoretical Foundations for Prevention Strategies

All too often prevention strategies and early intervention programs are adopted without consideration to their underlying theoretical assumptions. Yet all prevention strategies draw on theories related to literacy difficulty. Some are based on simple theories, others on complex theories.

The theoretical base for Reading Recovery is described in detail in Chapter 4. An underlying principle is that:

Learners would need to be able to read and write texts relatively independently in ways that could lead to the learner taking on new competencies

through his or her own efforts in the classroom....[The early intervention] must ensure that readers and writers become competent independent processors of new information and that they have ways of going beyond the known when necessary. A treatment programme must create a broad-based foundation of cognitive competencies with the potential to be self-extending at some later time. (Clay, 2001, p. 219)

Reading Recovery takes the position that prevention of literacy difficulties requires a watchful teacher who assists the learner in developing and integrating a complex set of processes from the beginning. An understanding of this view of complexity is necessary in delivering results for interventions aiming to prevent subsequent literacy difficulties for as many children as possible (Clay, 2001).

### **The Notions of Prevention That Make a Difference**

The notions of prevention considered throughout this chapter are based on the theoretical assumptions of Reading Recovery explained earlier. Arguments presented assume an understanding of these assumptions—and that a theory of literacy processing will help teachers of young children who are having extreme difficulties learning to read and write.

#### **Prevention Leads to Desired Literacy Outcomes**

Consider the desired outcome of Reading Recovery: to dramatically reduce the number of learners who have extreme difficulty with literacy learning and the long-term costs of these learners to educational systems. It is well-documented that this goal is best realized with prevention strategies early in a child's schooling. A longitudinal study of 54 children from first through fourth grades indicated that children who were average readers at the end of Grade 1 are likely to be average or above average in Grade 4. Conversely, the study demonstrated there is a .88 probability that a child who was a poor reader at the end of first grade would remain a poor reader at the end of fourth grade (Juel, 1988). Another study suggested that efforts to correct reading problems after Grade 3 are largely unsuccessful (Kennedy et al., 1986). There is very little evidence to suggest that remedial programs beyond Grade 2 have any level of success in correcting reading problems (Hiebert & Taylor, 1994; Slavin, Karweit, & Wasik, 1992; Taylor, Strait, & Medo, 1994). Yet, scientific research has demonstrated that intensive, early intervention programs can greatly reduce the number of children who fail to learn to read and write in first grade (e.g., Center, Wheldall, Freeman, Outhred, & McNaught, 1995; Iversen & Tunmer, 1993; Schwartz, 1996, in press). Clearly the early attention to prevention of failure can yield positive outcomes for children and cost benefits to the system. If only a portion of annual expenditures spent on

remediating reading problems were spent on preventing them, children and schools would be well-served.

Consider how much children learn about reading and writing in Grade 1. Then think of how far behind their classmates students will be if they are not successful in this early process. Preventive tutoring, as a prereferral intervention, deserves an important place in discussions of reform in compensatory, remedial, and special education (Wasik & Slavin, 1993).

For the investment, Reading Recovery yields two positive outcomes for the most vulnerable children. First, it meets the stated goal of reducing the number of learners with extreme literacy difficulties. In the United States, approximately three-fourths of the children who have the opportunity for a full series of Reading Recovery lessons in Grade 1 reach grade-level expectancies in a short period of time. Second, Reading Recovery identifies a small number of children who make progress but who may need longer-term supplementary help. After about 20 weeks of intensive diagnostic teaching, the child can be referred for further evaluation and supplementary help if necessary. These outcomes have been reported for more than 1.4 million children in the United States, and in a variety of contexts including urban, suburban, and rural schools (see Chapter 9 for detailed information about evaluation studies and Tables 10.1, 10.2, and 10.3 in Chapter 10 for review of effectiveness research). Similar results are replicated in five countries around the world. An investment in Reading Recovery brings reliable results.

Educators in the United States are concerned about student outcomes for children who are English language learners. Reading Recovery offers documented evidence of success with these children who are learning to read in English while learning the language concurrently (Ashdown & Simic, 2000; Neal & Kelly, 1999). For children whose initial literacy learning is in Spanish, *Descubriendo la Lectura* also provides positive outcomes (Escamilla, 1994). An investment in Reading Recovery and *Descubriendo la Lectura* ensures the commitment to positive outcomes for all children, including those who enter our schools speaking a language other than English.

To accomplish the two intended outcomes of Reading Recovery with reliability, each school or system sets a goal of *full coverage*. Full coverage ensures that there is access to Reading Recovery and *Descubriendo la Lectura* for all children who need it. When that is accomplished, the school can achieve a dramatic decrease in the number of children passed on to second grade with literacy difficulties. Implementation of the intervention as designed ensures the greatest benefit from the investment (see Chapter 12).

### **Prereferral Intervention Is a Good Investment**

Some children who have a full series of Reading Recovery lessons do not reach grade-level expectations but do make significant progress in their literacy learning.

They receive the added benefits of a sound prereferral intervention and diagnostic service. The school can reliably identify children who do need longer-term help. Compensatory programs will not be filled with children who could have benefited from an early intervention, and the system will save the high costs of long-term support. With Reading Recovery as a screening tool, the teacher documents the child's learning strengths and needs for 20 weeks and passes on a rich body of diagnostic information to the teacher who will continue to serve the few children who need longer-term support.

### **Prevention Yields Long-Term Benefits**

Reading Recovery is an investment in the future of a child. There is strong evidence that the impact of Reading Recovery is long-lasting. With good classroom teaching, most of these initially low-achieving children who reach grade-level expectations in Grade 1 continue to progress with their peers after the intervention. Though the children may have achieved the goals of successful literacy, they remain vulnerable to life's circumstances as well as to the quality of instruction that must take them forward in the classroom literacy program grade by grade. Reading Recovery guidelines recommend that schools monitor the children through Grade 4 to ensure that children do not slip back.

Several researchers have examined the long-term effects of Reading Recovery. In a study of 5,000 children in 100 Australian schools, Rowe (1995) followed the progress of Reading Recovery students from Grade 1 to Grade 5 or 6 and found that they were distributed across the same score range as the general school population and with fewer low scores. Rowe's analysis demonstrated that Reading Recovery had removed the tail-end of the achievement distribution. Four to five years of classroom and school influence rendered children who were tail-enders no different from the normal variability. At the beginning of their years in school, they had been clustered at the low range. By Grades 5 and 6 that was no longer the case.

Several studies in the United States have confirmed Rowe's findings that in later grades, the scores of Reading Recovery children more closely approximate the spread of scores in the general population. For example, one longitudinal study found that Reading Recovery children compared favorably with their class peers at the end of Grade 4 on standardized tests and state assessment measures. Reading Recovery children who achieved average class performance in Grade 1 continued to make progress in regular classroom literacy programs (Askew, Kaye, et al., 2002). A study of Spanish-speaking children in *Descubriendo la Lectura* also indicated positive long-term yields for the investment (Escamilla, Loera, Ruiz, & Rodríguez, 1998). For reviews of other studies that have explored subsequent performance of Reading Recovery children, see Table 10.3 in Chapter 10.

### **Prevention Is a Short-Term Investment for a Long-Term Benefit**

Many interventions for low-achieving children provide costly service year after year for the same children, yet few children achieve the goal of grade-level achievement in a short period of time, and most never achieve it at all. With Reading Recovery, there is a one-time cost for 12 to 20 weeks of intensive teaching before individual lessons are discontinued. The child who was given a full series of lessons is now meeting grade-level expectations or has been identified for longer-term service. The child who was identified for further service will have made considerable progress even if not yet achieving grade-level performance.

Reading Recovery is a short-term intervention because of the characteristics of the instruction and the resulting achievement outcomes. The carefully designed individual series of lessons delivered by Reading Recovery teachers helps children build an efficient learning system. Acceleration, or the enabling of a child to move faster in literacy development in order to catch up with peers, is a big factor in the economy and effectiveness of the intervention. Acceleration occurs because the Reading Recovery teacher is trained to have a deep level of understanding of reading and writing processes and of possible sequences in learning to read and write, is able to observe and analyze each child during learning episodes, can gauge appropriate learning experiences for each individual child, and can make teaching decisions based on the child's knowledge (Clay, 1993; Jones, 2001). The child is able to learn faster and catch up with his or her peers and can benefit from classroom instruction, eliminating the cost of long-term help.

### **Prevention Efforts Influence the Demand for Special Education Services**

To render a diagnosis of specific reading disability in the absence of early and labor-intensive remedial reading that has been tailored to the child's individual needs is, at best, a hazardous and dubious enterprise, given all of the stereotypes attached to this diagnosis. (Vellutino et al., 1996, p. 632)

Vellutino and his colleagues found that tutoring as a first intervention aided in distinguishing between reading difficulties caused by cognitive deficits and those caused by experiential deficits. Consider the cost savings when early intervention prevents inappropriate diagnoses of learning disabilities.

An examination of the effects of Reading Recovery on the rates of referral and placement in special education in New York City showed that children who received the Reading Recovery intervention were referred for testing and placed in special education at a statistically significant lower rate than children who were not served by Reading Recovery (O'Connor & Simic, 2002). Lyons and Beaver (1995) found that the percent of low-achieving children referred for special educa-



tion screening was dramatically reduced in two Ohio districts after Reading Recovery was implemented. These findings represent cost savings to schools and districts and incalculable savings to children and their families.

### **Prevention Reduces the Incidence of Retention**

Retention rarely has positive effects (Allington & McGill-Franzen, 1995; Shepard & Smith, 1990). Not only is it costly to the school system in dollars, but there is simply no evidence that it improves achievement. Moreover, it is likely to be detrimental to children's self-esteem. Instead of retaining children in kindergarten with all of its negative effects, schools can send the children to Grade 1 and offer a highly effective intervention that will afford them the opportunity to succeed on the same level as their peers. This is not only a sound economical decision, but one that considers the emotional effects on children as well. The previously cited Lyons and Beaver (1995) study found that retentions in two Ohio districts were reduced following the implementation of Reading Recovery.

Retention and transitional-grade classes are expensive and not effective. Allington and McGill-Franzen (1995) argue that the savings from eliminating retention could be used to fund educational efforts that will accelerate literacy development and ensure that children will become literate along with their peers.

### **Prevention Can Reduce the Literacy Achievement Gap**

A recent issue of *Educational Leadership* (Scherer, 2004) was devoted to a discussion of the achievement gap in the United States from a variety of perspectives. The Association for Supervision and Curriculum Development Leadership Council took the position that

All underserved populations—high poverty students, students with special learning needs, students from diverse cultural backgrounds, nonnative speakers of English, and urban and rural students must have access to

- Innovative, engaging, and challenging coursework (with academic support) that builds on the strengths of each learner and enables students to develop their full potential.
- High-quality teachers supported by ongoing professional development.
- Additional resources for strengthening schools, families, and communities. (Scherer, 2004, p. 94)

Schools across the United States are working diligently to close the literacy achievement gap among all population groups. Several studies offer a promising



outlook for the role of Reading Recovery in this effort. In Chapter 9, we provide convincing evidence that Reading Recovery is closing the gap between low achievers and their average classmates during the first-grade year. Batten (2004) found that an investment in Reading Recovery reduces the achievement gap of disadvantaged urban children. In a study of racial and socioeconomic literacy gaps in Ohio, Rodgers, Wang, and Gómez-Bellengé (2004) found that Reading Recovery helped reduce the achievement gap between African-American and White children and between poor and middle-class children, respectively. At the same time, the achievement gap between these same groups widened from the beginning to the end of first grade for those children who did not participate in Reading Recovery, providing compelling support for the implementation of Reading Recovery. Other studies (Ashdown & Simic, 2000; Neal & Kelly, 1999) demonstrate that Reading Recovery yields positive benefits for nonnative English speakers.

### **Prevention Influences a Child's Self-Efficacy and Self-Esteem**

We all know the effects of failure on children. A loss of self-esteem and self-worth at any time is devastating, but consider the impact on a 6-year-old! A study by Cohen and colleagues (1989) found that after Reading Recovery lessons, children become more like high achievers in their attributions to success. They also view themselves as more competent in literacy tasks than other at-risk students. Prevention of literacy failure and its resulting impact on self-esteem is a strong investment benefit. More recent research (Rumbaugh & Brown, 2000) finds similar effects, with Reading Recovery children showing higher self-concept scores than control students at a statistically significant level. While it is difficult to attribute costs to these factors, it is well-known that the influence of self-esteem yields benefits to the child, the classroom, and the society in which the child lives.

### **Prevention Benefits More Than the Children Served**

It is important not to limit the benefits of prevention to the outcome measures alone. We should also capture unanticipated outcomes, described by Barnett (1993) as qualitative residual. A wider range of outcomes deserves consideration, including the professional skills of teachers, the capacity of schools to solve literacy problems, and the societal benefits of the prevention efforts.

Reading Recovery is an investment in the professional skill of teachers. A trained Reading Recovery teacher offers the lowest-achieving first graders the highest-quality literacy instruction. In addition, Reading Recovery teachers bring their knowledge of how to work effectively with low-achieving students to their work with other students who are finding literacy learning difficult, and they can serve as consultants to other teachers. A testament to the level of expertise of Read-

ing Recovery is the demand for Reading Recovery professionals to serve in leadership roles in literacy in schools and universities. (See Chapter 8 for more information on professional development in Reading Recovery.)

Classroom teachers also realize benefits from Reading Recovery implementation. Reading Recovery helps make classroom teaching more manageable by enabling children with literacy difficulties to participate in reading and writing events in the classroom. Classroom teachers also benefit from the partnership with a Reading Recovery teacher to support the learning of a struggling reader. Membership on a school team provides a vehicle for solving literacy problems within the school.

A full implementation of Reading Recovery builds the capacity of the school and the district to work successfully with the lowest-achieving students. It provides a demonstration that the lowest-achieving children can be successful and raises the expectations for achievement in the school. As part of a comprehensive literacy plan, Reading Recovery provides an early safety net to prevent failure. A team of professionals at the school and district levels collaborates to ensure high-quality literacy opportunities for every child.

Prevention efforts benefit from cost analysis using a broad societal perspective. For example, the benefits of improving a student's literacy in Grade 1 may extend beyond Grade 4, perhaps resulting in increased higher education that could result in increased contributions to the tax base (Hummel-Rossi & Ashdown, 2002). In the Perry School Project (Barnett, 1985), children in the early intervention program completed more public higher education than did the control group, costing society more. However, over time this cost was returned to society through higher wages and taxes on earnings. This visionary view of cost and benefits is often lacking from educational decision making.

## **The Economy of Reading Recovery**

The complexity of calculating costs of interventions has been emphasized throughout this chapter. For administrators attempting to determine costs and benefits of any intervention or prevention program, multiple factors must be considered. In the appendix of this book, we are including some possible formulas for calculating per-pupil costs of Reading Recovery. In considering costs, it is important to remember that Reading Recovery is a one-time cost for 1 to 20 weeks and is most efficient when implemented as designed (see Chapter 12). It is also important to remember that simplistic formulas cannot clearly present the full array of effects and benefits.

Four possible formulas for calculating per-pupil cost of Reading Recovery located in the appendix are described below:

- Appendix A: A formula adapted from that of Gómez-Bellengé (2002b) is available for educators who wish to analyze the cost of Reading Recovery implementation in their districts. A chart is provided for entering local information about costs.
- Appendix B: A working chart is provided for calculating the costs of children whose lessons were discontinued after reaching grade-level expectations.
- Appendix C: A cost analysis study by Bueker (2004) focused on a large urban school district in the Northeast and included everything from the costs of initial teacher and teacher leader training to the cost of building the required one-way glass classroom. A working chart is provided for local data entry.
- Appendix D: This chart provides a way to compare Reading Recovery to other programs that target the same population and seek to achieve the same outcomes. With this chart format, it is important to consider the documented results of supplementary programs and the cost to the district of interventions such as Title I, special education, and small-group supplementary instruction. Costs should be compared in relation to student outcomes.

Again, analyzing costs of prevention is a complex process. The appendixes represent surface-level cost considerations. Decision makers must also consider the benefits of Reading Recovery that cannot be measured by dollars and take into account all of the information offered in this chapter. (See Table 12.2 in Chapter 12 for a list of benefits.)

### Some Final Thoughts

Henry Levin (1989) challenges educators to acknowledge that some children will cost more to educate than others. He argues that we can expect to spend about 50% more to educate the at-risk child. As we consider investments in children, just as we do in our personal investment portfolios, we must consider both short-term and long-term investments. It will indeed cost the system to teach some children in the individual Reading Recovery setting for a short term, but the long-term savings will far outweigh the initial investment. Isn't 30 to 50 hours of intensive intervention—the equivalent of 2 weeks of schooling—more economical than years of special education or remedial compensatory services?

Without question the benefits of successful academic performance go beyond the dollars saved. It is important to acknowledge all of the benefits of Reading Recovery implementation to children, teachers, schools, and systems (see Chapter

12). Practitioners and administrators also acknowledge the far-reaching benefits of literate children to their parents, to the community, and ultimately to society.

Until we institutionalize Reading Recovery as a necessary preventative safety net for a few children, we will continue to pay for the consequences of literacy failure. It means setting our fiscal priorities to include this requisite part of a comprehensive literacy plan in our budgets. It also means communicating to the stakeholders and policymakers the need for Reading Recovery and all of its economical and educational benefits. Let us take a visionary view of cost—and tie our investments to what really matters in schools. The most vulnerable children are counting on us to change their futures.

The criticism most often made of Reading Recovery is that it is too expensive and that it requires too much training. However, getting these results with the hardest to teach children leads us to conclude that the teacher training is providing the teachers with extraordinary insights and skills. It does cost money to hire and train Reading Recovery teachers but it also costs money to employ transitional grade teachers (e.g, pre-first grade classes), resource room teachers, and remedial teachers too. It costs money to retain children....When you compare the success rate of Reading Recovery with other programs that keep children for years and never get them reading on grade level, Reading Recovery is a bargain. (Cunningham & Allington, 1994, p. 255)