

READING RECOVERY: THE WIDER IMPLICATIONS OF AN EDUCATIONAL INNOVATION

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Preventing Literacy Failure

MOST EDUCATORS WOULD WANT TO BE ABLE TO DEAL EFFECTIVELY WITH literacy problems in their schools. *Reading Recovery* is an early intervention program designed to reduce dramatically the number of children with reading and writing difficulties that persist throughout their schooling. This program is of particular interest, because it seems to achieve similar results in very different education systems and with very different groups of children. This leads to the question, "What features permit this to happen?"

Reading Recovery addresses a problem of concern to most Western education systems. It selects young children who have the lowest achievements in literacy learning (reading and writing) and tries to bring them to average levels of performance for their classroom. It teaches them how to learn from their own efforts to read and write when they are no longer in the program. With individual, daily instruction children can enter the program as non-readers and be working with the average group in their classroom in 12 to 20 weeks. It is a narrowly targeted program aimed at children who have already had opportunities to learn in a good classroom program for about a year, but have not engaged in literacy learning. They are usually about six years of age. (An earlier version of this paper appeared in the *New Zealand journal of educational studies* under the title "Implementing Reading Recovery: systemic adaptations to an educational innovation" vol. 22, 1, 1987.)

The program is designed as an intervention in an education system and, despite the fact that the instruction is individual, it has the potential to be cost-effective because at least two-thirds of those who enter the program can be returned to average levels of performance in all five countries where it operates. Another 25 percent can succeed in a well-resourced, high drive, highly efficient program. If an education system can clear 90 percent of the poorest performers from the classrooms, the system is then freed to devote special resources to the very small residual group with persistent reading or writing difficulties.* We await the outcome of several years of operation before hazarding a guess at what levels of long-term remedial help will be needed (i. e., those for whom Reading Recovery is insufficient special assistance) but on the early returns these figures are very low, less than one percent of the age group (Clay, 1990).

One group of children who might have difficulty reaching average levels of performance are children suitable for special education who could not function independently without further long-term help. Another group are children who are not in school to be taught or who change school often, and who are not with the teacher long enough to get reading and writing processes established. And there are many other reasons for not having made a good start in literacy learning.

*The rate and amount of progress reported is similar to that achieved in Bloom's one-to-one tutoring programs which have raised performance by two standard deviations of mean achievement scores (Bloom 1983). This has been called the two sigma effect. Reading Recovery is different from those mastery learning studies in that target populations are special education groups—the lowest achieving children in reading and writing by the end of the first year at school.

Reprinted from Watson, A., & Badenhop, A. (Eds.) (1992). *Prevention of reading failure*. London: Ashton Scholastic, and with permission of the author.

Reading Recovery is more than a particular theory or analysis of what is needed to help children who have difficulty learning. To work effectively Reading Recovery must achieve change along four dimensions:

- child behaviour change achieved by teaching
- behavioural change on the part of teachers; organizational changes in schools achieved by teachers and administrators
- changes in funding and other system variables by controlling authorities

Designed as a prevention strategy to be adopted by an education system, this early intervention calls for an education system to change on several levels (see Section 3).

1. *Learners have Difficulties for Different Reasons*

Beginning with the individual child, what features of this program at this level allow it to accommodate the needs of very different individuals in diverse educational settings? These may be found in several basic assumptions.

- It is assumed that some children in every educational setting will find first steps into literacy learning confusing or difficult. I know of no program of instruction designed for the first years of school that does not have a few children who find beginning reading and writing extremely difficult.

Preschoolers who have been learning from their home and community experiences enter a more formal environment when they go to school, for it is a place with purposes, aims and philosophies about learning. Children must make a transition into this different environment, and they have to work out how to apply what they already know to what they are now being invited to do. Part of the transition is learning how to translate one's previous competencies into ways of dealing with novel learning tasks (Clay 1991). Some children make quick transitions and others take most of their first year at school, but most children can learn in classrooms which are responsive to their individuality. By the end of the first year at school even teachers in quality instruction programs are able to identify a few children who are not making a translation of their competencies into something that will work in the classroom program. (However, Reading Recovery has valid and reliable assessment instruments which assist in the selection of children.)

- It is assumed that once we begin to teach children we create differences between them in rates of progress. This applies in all settings.

Some children begin to lag behind their classmates in the new learning. Educators have explained this by pointing to individual differences—linguistic, cultural, intellectual, emotional, organic or psychological—labels which place children into categories which are supposed to “explain” why we find them hard to teach. Over time educators have paid more attention to the reliability of their categories than to devising ways to have such children learn by some alternative means. The Reading Recovery approach is to make the general assumption that there are ways in which children, already falling behind their classmates, can be given supplementary help which enables them to make a satisfactory translation of their current competencies into school-type literacy learning.

- It is assumed that some children will have difficulty with literacy learning irrespective of how good classroom instruction becomes.

Many educators strive to change the classroom programs so that fewer children need individual help, and this is good. But reading and writing are very complex sets of learning and there are many debates and many competing theories about what is being learnt and how that learning can best be facilitated. Authorities place different emphases on different aspects of this complex learning, giving pride of place in their programs to (a) language, (b) letter-sound relationships, (c) skills or (d) meaning and understanding. Such differences are unlikely to disappear and general agreement is unlikely to be reached.

Reading Recovery has no comment to make on these different approaches to classroom instruction. Irrespective of how classroom instruction is designed and delivered, the majority

of children, some 80 percent or more, survive the various and different programs quite well and only children who find it hard to learn are disadvantaged by the debates. The teacher's guide to the Reading Recovery program carries this warning.

A note of caution must be sounded. Most (80 to 90 percent) children do NOT require these detailed, meticulous and special Reading Recovery procedures or any modification of them. They will learn more pleurably without them. For a few children, individual and consistent tutoring with these special procedures introduced after one year of instruction may well prevent the development of a pattern of reading failure (Clay, 1985).

By the end of the first year at school, teachers are faced with a few children who can write no more than three words or hardly read the first level of introductory books, and schools have a responsibility to offer them "something extra." That is where the Reading Recovery program comes in. It is designed to give children who have not made a successful transition into literacy learning after their first year at school a second chance to become successful readers and writers. Results show that an education system can bring success in literacy learning to many children who previously remained low achievers throughout their schooling. This can happen in a relatively short period of time and as a back-up to a high quality classroom program. Reading Recovery is an appropriate supplement for even a high quality classroom program. It prepares hard-to-teach children to become active participants in that program.

- Reading Recovery does not exclude any child for any reason—intelligence, ethnic membership, language achievements, school history, physical handicaps or learning disabilities. It therefore deals with the social inequalities problem.

Specialists are not needed for selecting children for the program. The Reading Recovery teachers, trained in systematic observations of reading and writing behaviours, choose potential Reading Recovery children in consultation with other school staff. The children are simply the lowest achievers in their particular schools.

- This program assumes that, in a complex set of achievements like learning to read and write, difficulties will arise in infinite variety and combinations: the children to be helped will be failing for many different reasons—such as highs and lows in various related competencies, variations in previous opportunities to learn, illness and absences or confusions undetected.

As a consequence, Reading Recovery sees its task as working individually from the knowledge base and strengths of one particular child, moving through a particular path of learning for that particular child and bringing different children by different routes to similar outcomes as active participants in their own classroom program.

- Reading Recovery selection criteria are relative rather than absolute. In each school the lowest achievers in the age-group are given the first opportunities to enter the program, and no child in an ordinary classroom is excluded for any reason. The children given help are low achievers relative to the population in their own school.

These basic assumptions lay a foundation which permits the program to migrate across education systems. However, such features of the instruction are not enough to ensure the survival of the program in an education system. Attention must be given to the training of professionals and to external factors in the education system.

2. Professional Development: A Hierarchy of Expertise

Dalin argued that it is important to develop new skills at all levels of the system to maintain an innovation. There must be access to opportunities for professionals to learn the new behaviours called for and to learn about the conceptual and operating models of the changed behaviours. In particular, one has to work very hard to change established ways of thinking about how to deliver new kinds of teacher expertise to children who are hard to teach. From the teachers who teach the children, to the principals or head teachers, psychologists, and up to the top-level administrators, changes in knowledge, skills and behaviours must occur and be sustained over time. Problems of educational change are often equated with problems of getting teachers to change, summed up in the cry "If only we could find and train the teachers to . . ."

when in fact what is missing is a pedagogical plan to support the innovation so that the system learns what is required and how to get it into place (Dalin, 1978).

Training the Teachers

Teacher involvement. Dalin concluded that research and development models often use a hierarchical decision-making model with the researcher at the top and excluding the class teacher, and he recommended that one should ask: "To what extent were the teachers taken into account in the problem definition, the decision-making, (and) the development and implementation of the strategy? At the end of a long innovation history, was teacher participation broadly based or only in the innovating schools?"

- A problem was defined by New Zealand teachers. Using systematic observation techniques, they could identify children who were not making progress in reading and writing after one year at school and wanted to provide better instruction for them. They asked for further research.

- In the development phase, competent teachers taught children with problems and their teaching procedures were studied in detail (Clay & Watson, 1982). Some were retained because they worked and seemed to lead to accelerated progress; many were discarded because they seemed to slow up the child's progress. This meant that the teaching procedures used in the program were never far removed from the grasp of classroom teachers who were to be trained as Reading Recovery teachers.

- In the field trials a new teacher from each of the five schools volunteered for the job. They edited the manual of procedures in that they told us, and we recorded, every time they found the text unclear or insufficiently precise. The manual was rewritten in its published form with the aid of those teachers' complaints about ambiguity and clarity (Clay, 1979, 1985), and I have continued to revise it with the advice of teacher users.

At the end of the field trials, the New Zealand teachers and the schools owned the program in every sense. Principals were speaking for it. The teachers' union was beginning to ask for information.

- Expansion of the program has always proceeded on the basis of self-selection by schools and compulsory attendance of a staff team of three at the orientation meeting. The principle of teachers volunteering for training has been applied in most national settings. A system may support and encourage, or require schools to mount such a program; and the reactions across the education system will usually be negative in the latter case.

Teachers can be Involved at all Stages of the Development and Expansion of the Program.

Teacher change. Teachers in Reading Recovery are trained to be responsive to the learner and to make effective decisions, moment by moment, on the evidence of the child's responses during the individual teaching sessions. They decide where to direct the child's attention next to get the biggest learning gain from the next small step. They design a lesson for a particular child at a particular point in their progress, for there can be no package of teaching materials when one is teaching to a particular child's strengths. Such teaching is very different from that commonly found in classroom practice. How can drastic changes in teacher behaviours come about?

Goodlad (1977) recommended a network of peers to build a necessary support system for information-sharing and problem-solving. The experiences of trusted colleagues matter in the adoption of new practices. The model of training used in the in-service sessions worked well in all countries. It generated high interest, effort and dedication in the face of difficulties, and an air of curiosity and surprise that something different was occurring.

In a typical Reading Recovery training course, about 12 teachers begin training on the assessment of observations of reading and writing behaviours. These procedures are used for initial assessments, for records of behaviour change in day-to-day lessons, and for outcome assessments. Observational procedures overcome some limitations of standardised tests for monitoring progress because they can be used to record (a) whether, (b) when and (c) in what ways, behaviour is changing. Teachers observe exactly what children are doing and make these observations more explicit by analysing running records of text reading daily. Teachers write a diagnostic summary report of the useful responses that the child controls before they begin teaching. This careful analysis leads the teacher to design particular lessons for a particular child. Teachers discuss perplexing points or alternative interpretations at in-service sessions and they submit their analyses for review by tutors. Before they begin teaching children, teachers write predictions of what changes they would expect to see in children's reading and writing as they improve. This helps them to specify particular goals for each child and to grapple with some of the conceptual issues.

To minimise feelings of insecurity that teachers might initially feel about changing their teaching patterns, they are invited to teach a minimum of four children daily according to their best judgment. They are reminded that they are experienced teachers and are urged to draw on their experiences of working with children. It is considered economical to move teachers from the full strength of their present competencies rather than to demand at the outset new behaviours which might cause confusion and disrupt established and efficient responses (Gaffney & Anderson, 1991). Teachers in New Zealand and Australia did not have a competing model of reading instruction in their classrooms; teachers in Columbus, Ohio, using the basal series did.

New concepts and procedures gradually become part of the teachers' repertoire. As they learn to use the new procedures each knows that they are a learner and so are their peers. If the demonstration child of the day acts up and makes the teacher's task harder, the audience of peers is the most sympathetic a teacher could have. By the end of the training year teachers have acquired new theories of how their children performed and how they should respond. They are then able to question, challenge, discuss, work out a course of action and explain their decisions in ways they could all understand, because these new ideas are shared and explicit even though the children continually challenge their teaching and their understanding. In each country where the program has developed there has been a slow, steady shift in teachers' ideas and practices and a gradual increase in willingness to work with more challenging children.

The Columbus research report said: "Initially skeptical that any program could substantially change the shape of school progress for such low achieving children, teachers were surprised to see these failing readers make faster than average progress. Columbus Reading Recovery teachers grew professionally and significantly changed their expectations for children and their belief in the importance of their role as teachers" (Huck, et al., 1985).

While training is delivered during two-hour in-service sessions at one or two weekly intervals over the period of a year, teachers are working with children and carrying out other teaching duties throughout the period they are in training.

In many schools staff have supported a school organisation which releases a teacher to work with children in this way, because the program was seen as one designed to reduce the number of reading problems in the age group and eventually in the school as a whole.

The quality of the Reading Recovery teachers' instruction following the training year has also received attention. Results from many different sites lead to the conclusion that, to maintain high discontinuing rates, there is room for little variation from the functionally effective procedures studied to date. Twice every term teachers return to an in-service session conducted by the Reading Recovery tutor. They discuss two demonstration lessons by peers, and their own programs. It is important they continue to ask "Why" questions about children's behaviours, maintain a high level of responsiveness to individual children, question the effectiveness of their own practices, get help from peers on hard-to-teach pupils and have the opportunity to weigh up how new knowledge in the field relates to their daily practice.

Reading Recovery Tutors (or, in the USA, Teacher Leaders)

Tutors in Reading Recovery are key people. They have a complex role which requires a wide range of theoretical and practical skills obtained in a full year of training. They are what Goodlad (1977) calls "a redirecting system."

The systems, of which the school is a part, exercise enormous constraints which are essentially conservative and which serve to discourage change and innovation. These systems are not only the formal political ones of state and local organisation for education, they are also the informal ones, exerting subtle pressure by way of implicit and explicit expectations of schooling . . . if change is to occur at anything like a more rapid rate than is characteristic of the whole, the existence or creation of a redirecting system of considerable salience may be critical.

- As part of a year's full-time training, Reading Recovery tutors train as Reading Recovery teachers and work through the experiences of a trainee group as group members. Only by participating in the operation of Reading Recovery over a whole year can tutors become aware of the shifts in teachers' understandings, their questioning and their in-service needs as their skills increase.

- Reading Recovery tutors are required to test practice against theory. They need an academic understanding of the theoretical concepts upon which the program is based and yet they require a flexibility to consider new concepts and practices. They must have a sensitive awareness of the organisational, professional and child development issues associated with the innovations in the program and extensive teaching experience in the first two years of school. They have to continually analyse what they are doing in order to weigh up in theoretical terms any proposals to change the program.

- They need to collaborate with teachers whose work they observe and discuss. They must be skillful in helping teachers to grow and develop and in working supportively with them, even though it is their role to also criticise and evaluate the teachers' performances.

- Trainee tutors develop a thorough knowledge of the whole operation of the program in an education system and of the development and history of the project. The organisation and administration of the teacher's in-service course, from the introductory talk to the research evaluation at the end of the year, are studied in detail by tutors during their training. Critical appraisal of the program's strengths and problem spots and of competing explanations for its success provide them with practice in communicating with other professionals or with the public in print and in discussions.

- Trainee tutors observe trained tutors, on visits to teachers in their schools, who are talking over teaching techniques, answering questions, observing the teacher at work, and sometimes working with a child in an exploratory way, at a teacher's invitation. Late in training, trainee tutors make similar visits to teachers.

A yearlong training began at the University of Auckland for the Department of Education, and the training role subsequently passed to the Auckland College of Education. Tutors for Australia have taken this course. The training for the USA, which began at Ohio State University, is now available at some 41 sites in different states. The selection of people to train as tutors is important. Tutors need to have been effective classroom teachers, and they must become competent Reading Recovery teachers. They need to be able to help teachers to change while supporting them through such change. Concurrent with their in-service courses in New Zealand and the USA, tutors have taken university courses about theoretical issues and recent research on reading and writing processes and issues in literacy difficulties. When such courses are closely related to theories which support and challenge this particular program, they prepare the tutors to respond to analyses and evaluations of competing and controversial ideas in related fields such as prevention, early intervention, individual teaching, clinical approaches and evaluations of programs.

The involvement of a tertiary institution with a research capability is an important factor supporting the tutor course. On the one hand it was important for the survival of the original program that the academic development team relinquish ownership of it and their hold on it.

In New Zealand, the education system has assumed responsibility for training the teachers and the tutors, except for the contribution from university coursework.

However, in other settings, ways have been found for tertiary institutions to play an important role in sustaining quality control over the professional development and implementation aspects of Reading Recovery, to prevent massive change to the program so that it no longer fulfills its promise. In the USA, a federal agency, the National Diffusion Network, selected the program as an exemplary educational program and provided a small amount of funding to support well-controlled dissemination of the program through training and monitoring grants. It was also necessary to bring the program in the USA under trademark law to protect it from creative and uncreative substitute programs which appeared. This move has been misunderstood by some, who failed to see how destructive unlimited variants and poor training could be to a program which had demonstrated that children who were hard-to-teach could succeed under a special set of conditions.

Collectively, Reading Recovery tutors exemplify Goodlad's (1977) "redirecting system" because they teach children, train teachers, educate the local educators, negotiate the implementation of the program, act as advocates for whatever cannot be compromised in the interests of effective results, and talk to the public and the media, correcting misconceptions. A redirecting system, according to Goodlad, must be insistent, persistent, and sustained over continued crises. Without a redirecting system for an innovation, the established or traditional system may gradually take the innovation and transform it back to old practices.

Who Trains the Tutors? Trainers of Tutors

In Reading Recovery there are cycles of change in children, a year's cycle of change in teachers, and a year's cycle of different changes in the tutors-in-training across four major areas of learning. The trainer of tutors must have full knowledge of what it means to bring about all these cycles of change on the ground in practice, but in ways that are consistent with the academic theories which support the program. A trainer must bring these several areas of expertise together in an ongoing way as the program is problem-solved into an education setting.

It is a feature of the Reading Recovery training that teachers do not graduate to be tutors, and tutors do not become trainers of tutors. This is because at each successive level of training the roles of the professionals, and the theories they need to use, are different. A teacher can do an excellent job without the theoretical understanding that a tutor must have of the reading and writing processes, so that preferably that tutor can engage in the debates at the cutting edge of current knowledge. A tutor may carry out an excellent local inservice program and support a local implementation of quality, without needing to know how to train others to carry out this role.

So where do the trainers of tutors who must prepare tutors for many roles, come from? These professionals typically come from or become attached to tertiary institutions as members of staff. The first Reading Recovery trainers were trained at Ohio State University by the New Zealand team in 1984-85, and two further faculty members were subsequently trained to launch the statewide program in 1985-86. In 1989-90 both the Auckland College of Education in New Zealand and Ohio State University began the preparation of tertiary educators for training tutors or teacher leaders. The program is directed by three trainer-coordinators in New Zealand within a college of education, and by trainers of teacher-leaders at 17 sites in the USA, many of which have an administrator as site coordinator. Trainers complete the requirements of (a) becoming a successful teacher of Reading Recovery children and (b) becoming a tutor. They must stay in close contact with how teachers are learning to deliver the program and they must be able to ensure that both teachers and tutors gain a working knowledge of how to act in ways that are consistent with a theory of the task and a theory of learning (Wood, Brunner, & Ross, 1976). A trainer needs to be able to think integratively about theory, bringing diverse areas of current theoretical and practical knowledge together into working relationships but, in addition, trainers must be successful in educating other professional educators to do this.

Trainers also help to develop and coordinate a Reading Recovery program in their own education system. They need to advise administrators on how the quality of the program can be sustained over time, achieving high rates of discontinuing and so maintaining the cost-effectiveness of the intervention. They need to know the range of research that has been reported, and to advise administrators on research needed to monitor the implementation.

When trainers are being prepared to work in new education systems which are taking on the program for the first time, this is particularly challenging, because the differences in education cultures and practices call for problem-solving the theory of the early intervention into the beliefs, practices and academic literature of a new education system.

At this time, trainers of tutors able to start up programs in new education systems are trained only at two sites—Auckland College of Education and Ohio State University. To date the question of expanding such training has not arisen. (When it does there is another problem to solve—who trains the trainers of trainers?)

3. *Systemic Factors Influence the Implementation*

Educational programs are designed for particular settings, historical times, and cultures. They are not expected to transplant readily to other educational systems. If Reading Recovery was designed for implementation in New Zealand and had many features that were consistent with instruction in that country, how was it to survive the migration and achieve very similar results in very different settings? An analysis of the systemic factors which probably supported the transfer of the Reading Recovery program to other education systems in Australia, the USA, Canada, and England is of interest.

Organised systems maintain their integrity through a strategic balance of vital processes. They are not free to learn, adapt, or change in any way. They can only be modified in some way that is consistent with that vital strategic balance (White, 1976, 1979). It may be hard to achieve a policy change, but it is harder to achieve and sustain a change to the operating system itself. One can approach both child learning and education system learning in this way. The child who is to be taught reading already has a functioning spoken language system which operates productively, and concepts, however primitive, about literacy. This preexisting organisation interacts with the reading instruction just as the preexisting organisation in the education system interacts with the ideal model of the innovative program. This is the perspective of my own field of study, developmental psychology. So my personal orientation in developing Reading Recovery was to take account of the complex interdependence among parts of the system. I knew that older children were hard to teach as failing readers and that their return to average levels of performance was rarely achieved. A new attack on this problem was needed, and it called for more than an analysis of the counter forces that could be operating when a new program is tried. In an effective intervention the interdependence of variables demands a systemic plan, for an innovation cannot move into an education system merely on the merits of what it can do for children. According to Dalin, program developers must see change as a problem of institutional linkage in which there is likely to be conflict about issues which will affect the survival of new programs.

The stakeholders. To illustrate this, when the first New Zealand report was published it was pointed out how the new program could interact with the phenomenon of falling rolls in most schools, which was about to threaten the job security of some teachers. Reaction to Reading Recovery varied according to the vested interests of the stakeholders.

- At that time politicians were seeing rolls as a way of saving money to spend outside education.
- The Department of Education wanted to use the money saved to provide extra teachers to improve the quality of education, and Reading Recovery was one way of achieving this.
- The teachers' union publicly advocated the Reading Recovery program, but called insistently for the creation of new and extra teaching positions.

- School principals suspected that the one-to-one program would be uneconomic, but when the first children left the program they began to work to keep it in their schools.
- Reading Recovery teachers-in-training were excited with the progress of the children but found that they had difficulty convincing skeptical colleagues. They learnt to become more effective advocates.

In 1984 a new government, acting upon the premise that a child's progress through school depends largely on what degree of success they experience in the critical early years, created over 800 new teaching positions in preschool and junior (infants) classes, 236 of them in Reading Recovery.

Acceptable adaptations. In Central Victoria and in Columbus, Ohio, in Canada and in England, different systemic variables called for adaptations to the program's delivery. In most places, in the first year of operation, a monitoring research project has been required by administrators to describe how much change was being achieved in the children's learning. Such studies usually reported the adaptations made to suit practical factors of setting, the environment and the system.

Some adaptations can be preplanned.

- Prior to innovation in a new country the local reading program was studied and the alignment of Reading Recovery instruction with this was hypothesised.
- Assessment procedures of both schemes were compared and scoring at various stages of early reading progress predicted. Thus, if the beginning instruction program in the system's classroom stressed learning to read words in isolation, then higher scores could be expected on a word test of reading than in a system that stressed learning to read text in storybooks.

Or, children taught in the classroom to write using phonemic segmentation might score higher on a word writing test than on a word reading test. Such differences would be predicted from the teaching emphases rather than children's ability to learn. We could expect such initial bias in Reading Recovery children's control over a range of skills to gradually widen and fill out to average performance across all assessment instruments.

- Word tests were designed for the assessment of change in word reading, based on frequency of use in the local reading books.
- Each country worked out how to make the transition from Reading Recovery instruction to classroom programs.
- Development teams always faced practical impediments to the everyday running of the program—e. g., architectural problems with one-way screens, materials problems like the difficulty of finding extremely easy storybooks with a plot and a simple text, or unlined exercise book for writing stories.
- Time of entry to school and age of entry to the program were factors which had to be adjusted to the local education system. We were unlikely to duplicate the New Zealand system of school entry, where children begin formal schooling on their fifth birthday.

Incentive structures. In Columbus, teachers had to train out of school hours to receive university credit. In New Zealand and Australia they trained in school time while the system paid for substitute teachers, and they received no credit towards an advanced qualification.

The security of individual teachers and their incentive structures must be considered in relation to any innovation. In New Zealand the first teachers (in the field trials) were released for full-time Reading Recovery work and they reported that they felt the loss of their classes and the reinforcement received from successful pupils in those classes. The second effect was that the teacher's colleagues thought they had been given a soft option, having to teach only one child at a time: teachers were sometimes treated with less respect than they deserved. Since the field trial year most New Zealand teachers have retained their classroom contact and have worked only part-time at Reading Recovery and these problems have not arisen in subsequent years.

Competing programs. In some education systems Reading Recovery becomes an optional alternative for supplementing the classroom program. In the USA there were existing programs offered for social (Chapter 1) or psychological (learning disability) reasons. Such existing programs have the potential to threaten, or be threatened by, another new program. In Columbus, Ohio, in the first year of the experimental program, role changes were successfully negotiated for class teachers and Chapter 1 teachers. In the following year, as the Reading Recovery program expanded in the same schools, a teacher aid program for Year 1 competed for candidates. This was resolved by a monitoring study looking at how well each of the programs served children, and whether both were necessary.

In Summary

Because of such systemic relationships an innovation likely to survive will be one which is cohesive both internally (in terms of theory, training, program design, evaluation) and with the host system (i. e., it must be workable, contributing, cost-effective, and a winner with the stakeholders). The implications of a new program at the level of an education system must be clear. The goals and benefits must be stated—in this case to reduce the number of children unable to work at average levels in their classroom and to do this for a high percentage of such children and, as a result of this process, to identify early those who will need continuing help. There are both human and economic values in this saving of time, effort and resources which appeal to different stakeholders.

4. *Expansion of the Program across Education Systems*

Early reports describe how Reading Recovery was developed in New Zealand, moved to field trials in 1978, and to national implementation in 1983 (Clay, 1979, 1982, 1985).

In 1984 two international moves occurred. A region of Central Victoria¹ introduced the program into 17 schools, guided by perceptive administrators in Catholic and state education, a local committee of educators, and two tutors trained in New Zealand.² As features of Victoria's education system differed markedly from the New Zealand system, this would really test the flexibility of the Reading Recovery program at the system level. Two local research projects were contracted to monitor (a) child progress and (b) reactions to the program.

Canberra introduced the program in 1986, and over a number of years trained tutors and teachers developed the program across the education system. There were small developments at other Australian sites, and in 1988 Catholic and state educators in New South Wales began to build up the infrastructure of teacher training.

Developments in the USA began with a collaborative venture in Columbus, Ohio mounted by Ohio State University, two research foundations,³ and Columbus City Schools in 1984. Teacher training, tutor training, and trainer-of-tutors' training began in 1984-1985, using staff from New Zealand. Following independent appraisal of the first year's program by the State Department of Education, the Ohio General Assembly voted funding for statewide developments in 1985. By the autumn of 1990 the program was operating in 268 school districts in the state of Ohio. Since 1989 more than 40 new states have sent district personnel to an established training scheme. It is reported that 86 percent of the 13000 at-risk Year 1 readers receiving a full program in the USA have been able to read at average levels in their Year 1 classrooms (Dunkeld, 1991).

Two provinces in Canada have programs run by trained tutors, and plans to establish a Canadian training course for tutors are being made. In England, Surrey mounted the first

¹ The Loddon Campaspe/Mallee region.

² The expansion of the project to Australia, the USA and the UK was supported by the New Zealand Department of Education by providing opportunities for tutors from Australia to train in New Zealand and for national coordinators of the program in New Zealand and tutors to work for short periods in those countries.

³ The Martha Jennings Foundation and the Columbus Foundation.

program with tutors trained in New Zealand, and developments in the London area followed from that.

Research reports of the first year trials in New Zealand (Clay, 1985), Central Victoria (Wheeler, 1986; Smith, 1986), in Columbus, Ohio (Huck, Pinnell, Holland, Peterson, Sheldon, Steel, & Woolsey 1985; Huck & Pinnell, 1983), and in Surrey (Wright & Prance, 1991) are available. There is a book of readings (DeFord, Lyons, & Pinnell, 1991) and many articles on what has happened in different countries. Dyer (1992), a school principal, published an interesting report on cost effectiveness. The current status of the large development in the USA is clearly reported in the National Diffusion Executive Summary, 1984-1991.

5. *Answering the Criticisms*

From Special Educators

Some of the current debates in special education have been applied to Reading Recovery. They involve concerns with withdrawal programs, labelling theory, and problems of differential diagnosis. Carrier (1984) analysed recent reforms in special education in the USA and England and concluded that they would be likely to increase the number of children in special education and strengthen the processes of differentiation and allocation of children to such services. He described differentiation as (a) the identification of children as being of different sorts, which provides educators with a sense of the child's capabilities and (b) the allocation of children to practical, pedagogic and curricular consequences. He distinguished between minor and major allocation in this way.

Minor allocation occurs when the child remains in the main classroom and receives only a slightly different curriculum or pedagogy, while major allocation occurs when the child is put in a special place away from the regular classroom and receives a very different curriculum or pedagogy.

How does Reading Recovery overcome these problems? Children are differentiated on the basis of their learning to date about the end of the first year at school. It is assumed that they have not been able to learn from the instruction provided so far and could do better if taught individually towards that same program. Expectations (backed by research trials in three countries) are optimistic; children will escape "minor allocation," to use Carrier's term, in the future because they are expected to move out of the slow learner group. Temporary minor allocation of children who remain in their classroom program, and have supplementary attention, reduces the differentiation and discontinues the allocation. The outside limit has been set to be within six months for each child in this program.

Bart (1984) makes several further points on differentiation of special education children that can be addressed by the Reading Recovery program. These are contrasted in Figure 1.1.

Reading Recovery places a short time limit on "allocation," is planned by the staff of the school, designed by teachers, has an initial goal to eject the child from the status of being different and "allocate," as the result of good instruction, presents a learning challenge to the teacher who is trained to achieve this and is not aided by any deliverable packages, as every child's program is different. As a program it meets the different needs of children but is explicitly designed to avoid the five problems of special education identified by Bart.

From Learning Disability Professionals

Reactive analysis of the Reading Recovery program by the learning disability lobby in New Zealand has surfaced in public documents and the press over several years. The criticisms and challenges have changed over time as the program has expanded. Strongest opposition came from outside the school system, seeking government resources for development programs and special provisions based on a learning disability model which had not become a significant

aspect of the state education system. A division of interest was somehow arrived at. I claimed that the Reading Recovery program was designed for all children, not excluding anyone and including children of lower intelligence. A specialist diagnosis was not part of the identification process.

Figure 1.1. Effects of special education (after Bart, 1984).

Bart's criticism	Reading Recovery
(1) Calls attention to deviance, perpetuates concepts of disability.	(1) Rapidly reduces differences for many children.
(2) Maintains professional authority and cognitive superiority of specialists.	(2) Diagnosis and referral is between teachers and within the school.
(3) Rationalises an asocial approach to teaching.	(3) Adapts teaching to the individual to achieve acceleration.
(4) Packaged programs replace teacher's program.	(4) Teacher-designed individual lessons replace class group programs and basal packages.
(5) Special education curricula track leads student away from class program and narrows life options.	(5) Works with class curricula in view and returns child to this in 12 to 20 weeks.

Nothing precluded the persistence of the learning disability concept. When the good results of the program across the total population of low achievers became known, the SPELD spokespersons claimed that obviously SPELD children had not been part of the program. They continued to ask for special provisions based on specialist diagnosis predominantly directed by a hypothesis of an aetiology of brain damage. We could assure them that after a maximum of 20 weeks of good individual instruction in Reading Recovery and only 18 months of schooling, children with a need for further individual instruction would be identified and referred on. A contrastive analysis between SPELD and Reading Recovery teaching asking which was most effective, least costly or most favoured would not be appropriate because these are not alternative solutions. I do not consider that the approaches are directed to the same special education population.

SPELD's approach offers a clinical intervention for individuals now and Reading Recovery is a prevention program offering an education system a solution to the incidence of reading problems in the future. Reading Recovery is a planner's solution not a remedial program for the older child with a reading problem today. It is a validity check on this point that administrators and politicians in New Zealand and in the USA have found it easy to understand the goals of the program; they work with a planning perspective.

The program meets the recommendations of Ysseldyke (1985) for improving programs for children with learning disability in that it focused on educability, increased engagement time, quality instruction, and well-prepared teachers. However, in two respects the program differs from his suggestions. First, in strict definitional terms Reading Recovery is not a program of direct instruction because it aims to improve the in-the-head processing initiated by the child in reading and writing activities (on the basis of behavioural evidence) and does not begin with a set curriculum to be delivered "directly" by the teacher. Secondly, Ysseldyke's recommendations undoubtedly hold across a wide age range: this program is directed to young children as a preventive measure to undercut the reading problem. (See also Clay, 1987; Lyons, 1989.)

From Researchers

Questions arose from time to time, many of them raised by educational researchers. It was part of the ongoing problem-solving of the project to seek further information from research if questions were posed for which there was not existing data.

- What is the evidence that children learn? Teachers keep daily records in a form which provides a detailed memory of each child's progress. Research analyses have been conducted retrospectively, using these detailed records.

- Can the results be replicated? Following the field trials, the program was developed over the next two years in 100 Auckland schools. In 1978 the 48 schools were randomly assigned to three groups. Their end-of-year results supported the first year's success. Many teachers in many settings were trained, taught, and got similar results (Clay, 1985). The first research projects in Central Victoria and Ohio confirmed that cross-national replication was possible (Huck, et al., 1985; Wheeler, 1986).

- What follow-up studies have been done? The first-year follow-up study in New Zealand showed the rates of progress were, as predicted, comparable to the untutored children in the same classes for those children who had been discontinued children (Clay, 1985). Were the gains maintained as school work increased in difficulty? Three-year follow-up studies in New Zealand (Clay & Watson, 1982) and Ohio (Pinnell, DeFord, & Lyons, 1988) using standardised tests of reading and writing show mean scores within the average band for age or class.

A study of reading achievement in older children in Victoria (Rowe, 1990) found within its large sample of nearly 5000 students a group of 147 ex-Reading Recovery pupils. While the reading achievement levels of those students who have participated in a Reading Recovery program [sic] were generally lower than those of their non-Reading Recovery-exposed peers, the lower limits of the distributions for achievement measures are higher. These findings suggest that those students who have been identified as readers-at-risk and placed in a Reading Recovery program, have benefited notably from participation. Moreover, in spite of the small numbers involved, the earlier gains made by Reading Recovery students now in Year 5 appear to have been sustained (Rowe, 1990, p. 5).

- Did the program produce differential effects for different ethnic groups? This was tested in New Zealand for Maori, Pacific Island and European children. The achievement was satisfactory for all groups, although some extra attention was recommended for individual children who had shown slower progress at various points before the follow-up study, for it could be argued that life circumstances (absences, and many changes of school) and the quality of teaching programs were clearly related to this slowing of progress. The average achievement of the Maori group was still within the average band for their class level (Clay, 1985).

- Was the program implemented as required? This is an important question for any innovative teaching program (Wolf, 1984). It was checked for the field trial year 1978 from records of pupil lessons with running records of reading text and from writing products (Clay, 1985). The reading aspects of the program followed the required pattern; the writing section was omitted if and when the teacher was short of time. Subsequently, tutors have paid attention to this point. A recent study of this kind was reported from Ohio comparing many variables across five programs, including Reading Recovery (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1991).

- What control group studies have been done?

In many ways the research designs used to evaluate this program have been somewhat unusual, governed more by the type of questions to be answered for the education system than by the tenets of traditional methodologies in educational psychology. What Hatry, Winnie and Fisk (1981) called the Cadillac of evaluation research designs (the controlled randomised experiment) does not answer questions about low scorers accelerating to mean levels as a result of educational treatments (and therefore cannot address the social inequalities issues in education). To answer this questions many studies used children in the same school and class, who did not need the tutoring, as the comparison group. In several Ohio studies a random sample of children in Year 1 classes, chosen from those scoring plus or minus one standard deviation from the state mean, were used as a comparison group.

Two Ohio studies used a randomised control group design (Pinnell, DeFord, & Lyons, 1988; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1991).

6. *Information for Educators and Administrators*

How did people know (a) that this was an innovation and (b) that it worked effectively? This section discusses how administrators were informed about the Reading Recovery program. Reading Recovery programs accept a continuing need to educate everyone about their purposes, procedures and outcomes, and to have up-to-date information on the program's operation and outcomes available for lay and research enquirers. The sheer complexity of the program, and its surprises or unexpected outcomes, make this education process necessary.

- An attractive feature of the program is the way in which it feeds back information on success to all participants from the beginning. Children take only a few weeks to show that they feel in control of their work tasks; parents report changes in children in the first few weeks. Reading Recovery teachers like to see children making accelerated progress before they feel confident of the outcome, administrators are surprised when the first children are discontinued and able to survive back in their classrooms. Researchers are the last to accept the results, waiting for the follow-up studies and evidence that there is more to the gains than scores on word-reading tests, and waiting for the follow-up studies and evidence that there is more to the outcomes than regression to the mean. In contrast, parents and school committees study the teachers' graphs of child progress and join the supporters early in the program. It has been the enthusiasm of the teachers and the joy of the children at having some control over their own success that has been most surprisingly replicated in each country worked in so far.

- Reading Recovery has a device which created a powerful training setting and also provided a window on change. It is a very large one-way screen. All the in-service courses for teachers use this screen between two rooms. Children working at a table set against the screen wall in one room can be observed by teachers in another room. They discuss the teaching demonstration in detail as it occurred. Visitors can also observe the program in this way. The one-way screen becomes a shop window for the program. At any time it has been possible to arrange for two teaching sessions to show two children at work for 30 minutes each in an intensive lesson. Two children are needed to show that each lesson is different. The teacher training situation is also available for public inspection. Both are impressive to watch. As the child and teacher work, the teachers-in-training comment on the flow of events with tentative hypotheses of why this or that is occurring in the lesson and with questioning and debate about teacher and child behaviours. Anything unclear will be clarified; the tutor calls for this. Educators and administrators have seen these two levels of training proceeding at the same time and can compare what they see with (a) class teaching they have seen, (b) in-service training they have known. (To reduce the number of interruptions to the program such opportunities for observation have been used only for important communication purposes and not merely for the curious.)

- Another source of readable data was available as soon as children were being discontinued from the program. The progress of each child in terms of starting and finishing levels can be related to successful performance on the classroom reading materials. The administrator who supported the first field trials in New Zealand was the first to see such results. He could read progress from a teacher's records of book reading during lessons. Comparing these with the typical progress in classrooms he could see accelerated progress. Because the Reading Recovery teacher routinely plots the progressive rise in text difficulty on graphs each week, principals (head teachers) soon became aware of the rates of progress being made. They surprised us by sharing examples with their staff, their school committees and their supervising inspectors.

- The first research reports usually evaluated the progress of Reading Recovery children against an unusual control group—all other children of the age cohort in the same schools not in the program. This comparison was necessary to show that the lowest performers in the age cohort could be moved from a level where they were in the tail-end of the achievement distribution to levels around average for the age group. The research questions were "Did the Reading Recovery children move at an accelerated rate compared to their classmates?" and

“Did they reach average levels of performance?” One would expect the lowest performers on the tests to be significantly different at first from such a control group and that after successful intervention they would not be significantly different, which was what happened. When graphed, the data were again convincing and lines plotting progress for the treated children changed direction and joined the average progress line about the time the children were discontinued. Progress after that time continued on the same slope as that of the control group. Children who had not been rated by teachers as ready for discontinuing were, as expected, below the discontinued group in mean score. Thus, teachers’ predictions about discontinuing on the basis of how children were reading and writing could be seen to have been upheld and the program’s goals had been reached. Statistical comparisons supported this (Clay 1985).

Most treatment programs equate groups initially, then apply a treatment and test for significant differences. In order to answer Reading Recovery’s main questions, the research design had to be different. It began with groups that were different and applied a treatment to bring the groups to similar positions. Using the age group’s performance after the Reading Recovery children had been removed as the control group, set up a stringent test of the program’s effectiveness. However, because extremes of a distribution usually move towards the mean on second testing, and this regression to the mean often accounts for most of the gain in studies, this must be checked in such research designs. In fact the gains held up, over and above regression to the mean.

While such designs have validity for administrators, they do not have control for the possibility that the children would have improved as much in their school’s existing programs. From the purist’s viewpoint of scientifically establishing the relationship of treatment to results, this has been considered but seemed so unlikely that a no-treatment control group has not been tested.

- It is helpful if publications of several types are available to satisfy different readers in the education and political system. Usually the same report will not serve all audiences. The press, television and journalists were always given appropriate written documentation on the program before they conducted their interviews. The short, easy-to-understand statements that were accurate allowed them and us to quickly identify points of confusion. I worked on the principle that we had to reduce misunderstanding by anticipation, planning and good forms of reporting, because once abroad, misinterpretations of a new program take a very long time to clear up. It is true to say that we were conservative and careful over any claims or exposure of the program.

- Meetings, seminars, discussions and new materials have to be prepared as the program expands to new areas. Information has to be available to key people. Seminars were held for professionals interested in education. Invitations to appear on television were diverted to obtain shots of children and teachers at work on the program and to administrators who had come to value it. The questions of politicians were answered, visitors were arranged for in schools or at training sessions. In short, every means was taken to ensure that the messages that became public were clear, true to the strengths and limitations of the program, written at several levels for different audiences coming from a wide spread of professional involvement. A complex program was able to proceed down a clear path, picking off each challenge or counter argument on the way until acceptance of the program was achieved, in two countries, by a vote of funds in a budget. The aim of the communications was not propaganda or advertising, but charity of messages true to the conceptualisation of the program.

If you have a rather creative solution to a problem it breaks with traditional problems and concepts. We forced the distinction of Reading Recovery and remedial reading by the name, but our new name became a popular one for others to rename remedial reading! So it was not all plain sailing. For the present most educators and journalists in New Zealand now accept Reading Recovery as an early intervention program which is quite different from traditional remedial reading programs. Before long there will be another cohort of new journalists who need to be educated all over again.

7. *Survival, Innovation and Dynamic Processes of Change*

How can a program like Reading Recovery prepare itself to change as required (a) to adapt to conditions in other education systems and (b) to take aboard new theoretical insights as they emerge in the literature, so that “black holes” in current rationales for aspects of the program can be filled by new information after it has been tried and tested on the population for which Reading Recovery was designed?

Society. The environment within which the innovation is generated is itself changing. Its success will be affected by the economy, political stability, social expectations, labour market, education’s relations to other societal sectors, unions, and the state of technological change and educational development. Financing, decision-making, support structures, size of the system, and the relation of the individual school to the system at large, and the goals of the innovation, are important factors also. Any educational change will be embedded in a network of these factors and any one of the factors may undergo a shift which in turn facilitates or hinders the process of mounting the innovation. As an example, after six years of slow but steady progress, Reading Recovery’s development in New Zealand was suddenly faced with accelerated change when a new government was elected. Such societal factors require the innovation to adjust through problem-solving in a continuous pattern of change.

The education system. Because an education system is designed to maintain itself and because it does this by existing laws, regulations and other control mechanisms, taking an innovation aboard involves a change process with problem-solving as each new response to the innovation appears in the system. Advocacy for change can occur as a conflict with what exists and this potential must be recognised. Conflict with existing provisions, regulations, beliefs or professional roles is likely to be continuous in an innovating system so that neither consensus nor conflict is an indicator of success or failure (Dalin, 1978). When an innovation is taken over by another education system from the one in which it originated, it must allow for a problem-solving period while the receiving system makes its adaptations. The art in the change process is that the changes should not distort or diminish its payoff and any changes made should be explicitly referred to theories of what is occurring. Compromise, or unthinking adaptations can readily change the impact of the innovation and reduce its capacity to deliver effective results. During periods of expansion every effort should be made to ensure that the parts of the program retain their cohesion and links with other parts of the program.

The training. When preparing an informed leadership the program always faces challenges from those in training. Four key factors in an implementation of Reading Recovery program stress informed leadership (Dalin, 1978).

- A university-level training program to train tutors and staff who will act as consultants to the educational systems and who can explain the implications of compromises and modifications for the expected outcomes.
- Persons at the highest level of administrative decision-making who understand the instructional features of the program. Expansion should only proceed after such an administrator has been appropriately briefed on-site with a fully operational program.
- The tutors are seen as leaders in their local districts. They have, during their training, been expected to learn to explain the program to those who need to know about it, to answer criticisms, to argue for retention of its basic principles, and to write letters to the local papers or use local media to correct misunderstandings about the program. They have an important leadership role in their own districts, where they train teachers for the local schools over the period of a year, maintain contact with past trainers operating independently in their schools, and are able to deal with the public and professional education about the program at the district level.

- In the Reading Recovery program child learning, teacher learning, system learning and community learning made up effective maintenance systems, with a Reading Recovery tutor as the agent of redirection supported by full comprehension of the program's aims among the educational administrators.

Like the media and newspaper journalists, the educators keep playing musical chairs and changing their responsibilities, so there is a continuing need for Reading Recovery to explain itself to new audiences. This keeps the program on its toes and throws up the possibility of improved conceptualisations, and clearer statements of changing issues.

Programs have disappeared after trials which paid too little attention to training the teachers, educating administrators or achieving cohesion of theoretical and practical training.

The creation of substitutes. Dalin believed that one of the main reasons for innovations becoming rejected was the creation of substitutes. Substitutes arise within a program when attention to detail, explication and the training of teachers have been insufficient to sustain the original advocacies (Wolfson & Timmerman, 1985). Care must be taken to minimise the vague and ambiguous corners of the theory and procedures so that alternative and drastically varied interpretations of how to teach are not made unwittingly.

Substitutes arise when the program is successful, because the teaching looks easy and is copied superficially. Effort, quality control, time and attention may be reduced and there may be tinkering with the components of the program. Only a monitoring of the implementation and an insistence on training as designed can control this.

Substitutes can arise from adaptations of the program to settings that vary in many practical aspects, or from political and economic constraints on an operation of funding. In particular, short-cuts in training have often been offered as a (false) economy for Reading Recovery training.

However, substitutes also arise from extensions to the theory behind the program, from alternative and equally reasonable conceptualisations or from challenging and oppositional theoretical positions.

Control over the creation of substitutes that threaten the Reading Recovery program has been attempted in several ways. The teachers receive a year-long training during which time their understanding of the procedures and the program are tested by their tutors, their peers and themselves against their actual practice while teaching. Local programs in a peer group of schools are organised by highly trained tutors, who train the teachers while at the same time acting as Reading Recovery teachers themselves so as not to lose touch with operations at the workforce. Teachers bring their bright ideas for changes to the tutors, who must be able to relate them up through theory and back to implications for children and/or the program, and they will pressure in discussion for either consistency or change in the program. When would a change be sanctioned? If it did not threaten the acceleration in learning achieved in the program, or the range of reading and writing skills which improve, or the emphasis on independent learning that is related to continued progress. The effectiveness of the change would need to be clearly demonstrated for the designated population of children.

Most of the substitutes offered have either been welcome adaptations for size of school, available personnel, age of entry and other organisational factors, or they have been clearly an unacceptable break with the principle that every child's program is different and takes a different course. Training teachers to devise and deliver that instruction in individual lessons follows from that principle.

Programs have disappeared after trials which paid too little attention to training teachers, educating administrators, or maintaining cohesion between theoretical and practical training.

A conservative model. Is this a conservative model of change? Robinson (1989) claimed that it was. She said it would not allow important questions about the classroom programs serving five- and six-year-old learners to be posed. She was quite correct. Given that there has always been massive innovation in classroom programs across the world such that we are

deluged with variety, and that successful interventions known to reduce the incidence of reading difficulties are very rare, a choice had to be made. Reading Recovery continues to develop as a program which takes in children from any kind of prior instruction sequence, and returns children to any classroom program. In order to do that the instruction must bring children to a level of independence in their processing of print (in reading and in writing) such that they can survive back in their classroom with a not-noticing teacher. They need to be pushing the boundaries of their own knowledge during the usual program in their classroom.

I would argue that there is a body of theory which can be used to guide what is done in classrooms and what is done in Reading Recovery, and this is what I have tried to write about as the construction of inner control (Clay 1991). However, the realisation of that theory in classroom practice looks very different from what it is necessary to do with the "hard-to-teach" children in Reading Recovery. I hold firmly to the belief that it is inappropriate to use models of programs and procedures that work well with the hardest-to-teach children as models for what should be done in classrooms for most children who learn easily. One does not get to good classroom practice for all children by studying what is need by the lowest 20 percent.

Theory and responsive teaching. Movement in theory presents most of the dilemmas. Working from a "tool" concept of theory as an aid to thinking about complex interrelationships, and accepting that tentativeness must be a feature of any current formulation, one must allow for the guiding theory of an innovation to change. Given that implementation takes time, however, one must guard against dissipation or destruction of a successful innovation before an adequate test of the original theory within the education system has been made. A period of protectionism is warranted.

Challenges. A strong challenge for the program in its early days was that it was unlikely to be able to help sufficient children. The percentage that can be helped depends (a) on the funding of the program, i. e., what percentage of low achievers is provided for and (b) on the energy and critical theoretical vitality of the application which affects the proportion of children discontinued from the program at average levels. The program has already been shown to be cost-effective when it creates savings on existing programs in some settings, because it does not merely provide for children with special needs but reduces their numbers (Dyer, 1992). As fewer children with severe reading retardation are found in the upper primary school, release of resources should cover costs of the early intervention and the programs offering more specialist teaching to a small number of children unable to graduate from Reading Recovery at independent levels of functioning in the classroom.

There is one particularly strong threat to the Reading Recovery program. Reading Recovery was designed, applied and evaluated for a special population and it uses unusually stringent criteria for success. Pupils from the tail-end of the low achievement distribution were to be moved into the average band of performance or (statistically) a significantly different population was to become not statistically different from the (variable) average group (this is not a comparison with the exact mean but with performance within the average band). As most instructional theory and practice in reading are not directed to this group but to children who succeed in reading, then the bulk of advocacy about reading and writing instruction will come from theorists who are not familiar with the extreme difficulties of this special population of children. A cautious response to claims for changes to the program on the theoretical grounds is this.

The program has been shown in research to work with this population of children and the results have been demonstrated in day-to-day progress on process variables as well as pre and post-program tests (Clay, 1985; Huck, et al., 1985; Wheeler, 1986). A major change in any component of the program should not be made without similar research documentation of its enhancing effects plus any losses incurred, on the same unrestricted special population of children.

Reading Recovery is potentially vulnerable to this challenge. Most concern in an education system is for the quality of education in the system as a whole, and for the philosophies of the society, and of learning which guide it.

In its efforts to guide the flotilla of educational changes towards a chosen destination, educators can see a somewhat different teaching approach for a selected few (say the lowest 20 percent of achievers) as a threat to the overall philosophy or chosen practice. It is sometimes hard to convince them that it is possible to go by a different route to the same outcomes for some children who have not responded to the general system.

Success is relative and time-limited. The biggest threat to survival follows the success of a new intervention program. An innovative program that is getting good results has many supporters in the growth stage. Once it is in place it is taken for granted. More than that, it is a well-known fact that preventive programs, once implemented and effective, destroy the evidence that they are needed, and after a time without the evidence before it the public, politicians or educators may gradually reduce the program's resources and effectiveness. However, there will be a lag time before the systemic effects of the innovation are noticed and a further period before they can be ignored.

In this paper I have tried to contrast the ease with which Reading Recovery children achieve what seems to be the impossible task of reaching average levels of performance in most cases, with the continuing challenges of the educational enterprise of making a valued intervention live in an education system. Dalin (1978), whose interesting work found ready application to this project, sums up my sense of 16 years of work.

Educational innovation . . . is not a magic shortcut to educational wonderland. It is not a bag of tricks easy to apply to troubled school systems. It is difficult, time-consuming, energy-exhausting, and costly. There is no single way to improve the teaching-learning process in our schools.

In the decade ahead the half-life of the program will be plotted. Many innovative educational programs are not developed, explored and continued, and the easy summary is that nothing works. "When work shows signs of success, why is the harnessing of the innovation to the system not a real issue?" asked White (1979, p. 286). Why do critics consider it important that the innovation take account of all emerging theoretical guesses, and the evidence from experiments under special conditions, when they give little or no attention to theories about:

- mounting the innovation in a system
- replicability
- variance in different settings
- and how the program can change in response to new evidence and yet be considered the same program?

Implementation and dissemination have their own bodies of theory and their own evaluation criteria and innovations do not last unless due attention is paid to these aspects of an innovation. It is these issues which I have tried to address in this paper, and they are indeed complex.

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