# THE EFFECTS OF READING RECOVERY AS AN EARLY INSTRUCTIONAL INTERVENTION : EIGHT CASE STUDIES

BY

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
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MASTER OF EDUCATION

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## Abstract

Reading Recovery, an early intervention program, designed by Marie Clay (1991) for the New Zealand school system, accelerates the growth of at-risk grade 1 readers, enabling them to benefit from the literacy instruction in their classrooms and develop independent reading and writing strategies (Clay, 1991, 1992, 1993, 1994). This research explores the effects of Reading Recovery on 4 at-risk grade 1 students and compares their Observation Survey (Clay, 1993) scores to 4 at-risk grade 1 students who did not receive Reading Recovery. The Observation Survey (Clay, 1993) was administered to both groups of children in September of grade 1 and June of grade 2.

The results showed that the Reading Recovery children scored a slight advantage in Text Reading and Writing Vocabulary. Both groups scored within the same range on the other measures (Letter Identification, Word Test, Concepts About Print and Dictation), with the exception of one child in the comparison group.

The most important questions arising from this research are:

1. Should literacy programs in Kindergarten provide more child-centred, activity-based literacy experiences to scaffold the child's transition from home-based literacy to school-based literacy?

2. Should parents receive training to help them provide their children with supportive home-based literacy events?

3. Should we delay Reading Recovery until January of grade 1 or September of grade 2 in Canada?

4. Should we consider a two-model system of intervention (Reading Recovery and small group instruction)?

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Dedicated to:

the memory of my mother, Jean Winchell,
who is with me always

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## Chapter 1

## Introduction to the Study

Literacy learning begins in the home, during the child's early years, prior to formal schooling (Britton, 1970; Clay, 1975, 1991; Butler & Clay, 1979; Bruner, 1983; Lipson & Wixson, 1991; Schickendanz et al, 1990; DeFord, 1991; Goodman, 1994; Pinnell, 1994; Cox, 1994; Hiebert, 1994; Glazer, 1995; Sulzby, 1995; Teale & Sulzby,1995). Our education system and literate society demand that grade 1 children effectively use literacy learning strategies. However, children come to school with a variety of home literacy experiences and not all home literacy events prepare children equally to take advantage of literacy learning within the school system. This creates a group of children in every grade 1 classroom who struggle and fall behind their peers and are at-risk for failure in learning to read and write. Reading Recovery is an early intervention program designed to accelerate these struggling readers and writers, through individual instruction. This research examines the effects of Reading Recovery as an early intervention for grade 1 children at-risk for failure in learning to read and write.

## Reading Recovery and Reading/Writing Within the Classroom

Clay (1990; 1993) emphasizes that most children do not require the intense one-to-one tutoring of Reading Recovery. However, Reading Recovery provides many practical applications for teaching reading to both non- and at-risk students. An impressive body of research on emergent literacy and learning to read underscores the importance of an

instructional approach that is social, interactive, holistic and meaningful (Vygotsky, 1978; Goodman, 1986, 1994; Schickendanz et al, 1990; Clay, 1991; Palinscar & Klenk, 1992; Dupree & Iversen, 1994; Forman & Cazden, 1994; Goodman& Goodman, 1994; Halliday, 1994; Harste, Burke & Woodward, 1994; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994; Jones, 1995; Morrow & O'Connor, l995). Reading Recovery is such a program.

Reading and writing programs generally share the objective of bringing the child to an independent level of functioning in both reading and writing. It is the goal of Reading Recovery to discontinue the child from the program at an independent level of functioning which enables the child to benefit from the classroom reading program. The child discontinues when s/he has developed a self-extending system of reading and writing that is within the average or above average range for that child's classroom. It is necessary for both the at- and the non-at-risk child to develop a network of effective reading and writing processing strategies. Reading Recovery scaffolds the child in the acquisition of the prerequisite declarative knowledge (i.e. knowing that), procedural knowledge (i.e. knowing how) and conditional knowledge (knowing when and why), described by Paris, Lipson, Wixson (1994), which enable the child to access his/her network of effective processing strategies.

Clay's underlying theory of literacy is developed in Becoming Literate (1991). Clay's theoretical principles of literacy development include: (a) observing the child's reading and writing activities; (b) teaching new concepts from concepts the child already knows; (c) using a variety of genres and the child's own writing to teach reading; (d)

accelerating learning through scaffolded instruction on meaningful tasks and always maximizing the child's independence; and (e) basing instruction on strategies and problem solving rather than acquisition of items of knowledge (Dorn & Allen, 1996). These theoretical principles have direct application for classroom teaching in terms of supporting both the at- and non at-risk child.

Through Reading Recovery procedures the trained teacher observes what the individual child can already do and uses the child's strengths as the entry to reading and writing. Similarly, the classroom teacher can be coached to use daily observations of literacy activities to capitalize on a child's strengths to begin reading and writing. This liberates teachers from following the dictates of a standardized program which ignores individual strengths and weaknesses and forces every child to take identical steps to develop literacy. Supporting classroom teachers in the application of Clay's theory of literacy development opens the door to flexible programming which starts wherever the child is and extends the child's prior learning and scaffolds his/her transitions along the literacy development continuum.

## Emergent Literacy

Current literature views the concept of emergent literacy as a complicated network of sociopsycholinguistic activity, which begins early in the child's life, long before formal education. Teale and Sulzby (1995) identify four components of emergent literacy: it begins prior to formal

schooling, it is functional and goal directed, reading and writing are interrelated and develop concurrently, and literacy learning is social and interactive.

Children as young as two or three can identify signs (eg. MacDonald's), labels (eg. Cheerios) and logos in their environment (Goodman, 1986; Hiebert, 1988, 1994; Teale & Sulzby, 1995). Further, the scribble writing of preschool children can be identified as English, Arabic or Hebrew, depending on their written language environment (Harste, Burke & Woodward, 1994). Thus, written text is influenced by the language setting, which includes where it is found (home) as well as the cultural context (American, Arabic, Israeli). It is clear from this research that emergent literacy begins long before the child enters school.

Emergent literacy is linked to functional, goal-directed behaviour. For example, children see their parents reading the newspaper, following a recipe or using the telephone book. Children's first literacy learning is functional and goal directed, rather than acquired as a series of abstract skills taught in isolation. Moreover, young children, as literacy learners, do not learn to read and then learn to write. There is an interrelationship between speaking, writing and reading. Developments in speaking, writing and reading are mutually supportive and reinforcing (Teale & Sulzby, 1995).

Children's emergent literacy behaviours are conceptual and developmental, as demonstrated by Kayla, a five year old, (Teale & Sulzby, 1995). Kayla, at age five, wrote LAEYMABCODLPK for "I like rainbows because they have so many colors". These letters bear no sound/symbol

correlation to the message and, at first glance, appear to be random letters. However, observations showed that Kayla had not behaved randomly. She had invented a rule of one letter for each syllable in her message. If we assume the child's perspective, we can easily understand the conventions, strategies and logic they use. Through observations, we discover that children's conventions, strategies and logic change over time, demonstrating that literacy learning is a developmental process.

Fundamental to the concept of emergent literacy is that children are active in their learning, that they construct their own understandings about written language and that their parents or other caregivers play an important role as facilitators of emergent literacy (Teale & Sulzby, 1995). Parents provide literacy demonstrations by writing shopping lists, reading a bus schedule or a recipe. More importantly, parents and children interact together with print through activities such as cooking together and reading a recipe, reading directions for and playing a boardgame and interactive storybook reading. These and other literacy events are times when the adult, by scaffolding, enables a child to accomplish with support what the child could not accomplish independently (Bruner, 1983).

The concept of emergent literacy is consistent with the theoretical principles of Vygotsky which identify the context in which children develop literate behavior as being social, interactive and holistic (Vygotsky, 1978; Goodman, 1986; Palinscar & Klenk, 1992; Forman & Cazden, 1994; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994; Jones, 1995). It is within a social, holistic and interactive context that a child's learning is mediated by an adult or more knowledgeable peer. Vygotsky identified this as the "zone of

proximal development". The "zone of proximal development" is at the cutting edge of learning where, with support, a child accomplishes tasks and solves problems that could not be successfully completed independently. For the novice, success is achieved through individually responsive and temporary scaffolded instruction (Bruner, 1983; Palinscar, 1986; Kagan, 1990; DeFord, 1994). Vygotsky (1978) also maintained that learners must engage in contextualized, holistic activities rather than activities which feature strategy or skill instruction in isolation.

## Reading Recovery

Consistent with the principles of learning identified by Vygotsky (1978), it is within a contextualized, social and holistic environment that this research is conducted. Reading Recovery is intended to meet the needs of children who experience difficulty in developing effective reading and writing strategies and are at-risk in terms of not becoming independent readers and writers. Reading Recovery addresses the needs of this at-risk group of learners through individualized instruction that focuses on a process of acceleration, brought about through individually responsive and temporary scaffolding. Teaching decisions, made within the context of purposeful reading, are based on the child's strengths, such as awareness of meaning, syntax, visual cues and pragmatics, which enable the child to see the value of and apply effective reading and writing strategies on-the-run while reading.

One way to provide teaching decisions which are based on a students' strengths and weaknesses is to administer Clay's Observation

Survey (1993) and use the results to inform instruction. Students' early literacy programs are observed systematically over time to determine their knowledge of: the alphabet, concepts about print, and words presented in isolation, as well as the ability to write and take dictation. Children are also observed while they are engaged in the task of real reading by keeping a running record of and analyzing their miscues.

Reading Recovery is intended to supplement, not replace, a balanced classroom literacy program (Clay, 1991, 1992; Pinnell, 1995). Fundamental to Reading Recovery is the premise that reading is a strategic, meaning-making process occurring in the child's head, that reading and writing are reciprocal processes, success in one contributing to success in the other, and that children learn to read by reading connected text (Ministry of Education, NZ, 1985, 1992; Shanahan & Lomax, 1986; Clay, 1991, 1992, 1993, 1994; Wasik & Slavin, 1993). Reading Recovery accelerates the struggling beginning readers and enables them to benefit from the classroom literacy program, develop independent, self-generating systems and function within the average range in their classrooms (Clay, 1991, 1992, 1993, 1994; Pinnell, 1987, 1989, 1990;Slavin et al, 1993; Askew & Frasier, 1994; DeFord, 1995; Jones, 1995; Swartz & Klein, 1995; Taylor et al, 1995; Spiegel, 1995). Acceleration includes scaffolding the effective use of self-monitoring reading and writing strategies (Palincsar & Klenk, 1992) and working on strengths, by making the most productive teaching decisions for a particular child at a particular time (Clay, 199l, 1992, 1993, 1994; McDonough, 1992; Wasik & Slavin, 1993; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994). It is the child's ability to use sampling, predicting, confirming and self-correcting strategies while

reading that activate his/her self-improving system. This means that the child develops a self-extending system in which s/he learns more about reading and writing every time s/he engages in such activities (Pinnell, 1989; Clay, 1991, 1992, 1993, 1994; Slavin, Madden, Karweit, Dolan & Wasik, l993; Askew & Frasier 1994; DeFord, 1995; Jones; 1995; Swartz & Klein, 1995; Taylor, Short, Shearer & Frye, 1995).

There is an impressive body of research which suggests that failure in learning to read is preventable in all but a very small percentage of students (Clay, 1991; Pinnell, 1989; Slavin, Madden, Karweit, Dolan & Wasik, l991 & 1992). The crippling effects of reading failure are broadly known. Stanovich (1986) identifies and provides evidence that children who get off to a poor start in reading seldom grow into able readers. Stanovich calls this the "Matthew effect" (the rich get richer and the poor get poorer). Children with beginning reading problems are more likely to fall further and further behind their peers in reading and express a negative attitude toward learning(Juel, 1988).

The contention is that Reading Recovery provides these struggling beginning readers with an opportunity for success and reduces the need for future remediation and special education supports. This makes Reading Recovery a cost-effective intervention (Dyer & Binkney, 1995; Lyons & Beaver, 1995).

Dyer and Binkney (1995) compare the cost-effectiveness of Reading Recovery, retention and special education support based on teacher salary estimates. According to their estimate, there is a one-time cost of $2,063 in

teacher salary to serve 1 child in Reading Recovery, an annual cost of $5,208 to retain a child in grade 1 and $9,906 (spread over 6 years) to provide 1 child with special education support. According to their estimates, Reading Recovery is a cost-effective intervention.

In the Lancaster City School District in Ohio (Lyons & Beaver, 1995), Reading Recovery is shown to be cost-effectiveness when compared to the costs of retention (in grade 1) and special education. Retaining a child in grade 1, based on teacher salary for 5.5 hours per day x 182 school days per year, is $3,853 annually. The annual cost of special education for 1 student, based on teacher salary for 2.5 hours per day x 182 school days per year, is $2,275. Special education may continue over the 6 years of elementary school. Based on teacher salary, 30 minutes per day x 5 months of instruction, the annual cost of Reading Recovery for 1 student is $1,708. The Lancaster School experience shows Reading Recovery to be cost-effective.

Providing early support to the struggling beginning readers offers these children a chance at success. It reduces the need for future remediation and special education supports and thus, makes the program cost-effective in the long-run. (Dyer & Binkney, 1995; Lyons & Beaver, 1995).

## The Research Problem

The purpose of my research is to examine the effects of Reading Recovery in my training year. Four Reading Recovery students were compared to four at-risk children who did not receive Reading Recovery.

## Significance of the Problem

This research provides case study data on the effects of Reading Recovery as an early reading intervention within my school division. Although the effects of Reading Recovery have been well-documented (Pinnell, 1989; Clay, 1991, 1992, 1993, 1994; Slavin et al, 1993; Askew & Frasier, 1994; Pikulski, 1994; DeFord, 1995; Jones, 1995; Swartz & Klein; Taylor et al, 1995), this is the first documentation of Reading Recovery within my school division. These data form part of a beginning for an examination of early reading instruction interventions. In addition, the study contributes to the body of research on teaching beginning reading in terms of practical application.

Purpose of Research. This research investigates the effects of Reading Recovery as an early intervention for at-risk learners.
It is my contention that students in the Reading Recovery program will make better progress than those not involved in the program as measured by the tasks in Clay's (1993) Observation Survey.

The questions for this study are related to performance variation on the six tasks of Clay's (1993) Observation Survey. Each research question relates to any differences in performance on each task of the Observation Survey between at-risk students involved in the Reading Recovery intervention and those not involved in the Reading Recovery intervention before, immediately after and one year later. The question for study is:

Are there any differences in performance on the six tasks of Clay's Observation Survey between at-risk students involved in the Reading Recovery intervention and those not involved in the Reading Recovery intervention at the end of grade 1 and one year later, at the end of grade 2?

## Definition of Terms

### Reading Recovery

Reading Recovery. Reading Recovery is an early, short-term intervention program designed for the lowest achieving students at-risk in learning to read in grade one. The goal of Reading Recovery is to enable the lowest achieving at-risk students to achieve accelerated progress in 12-20 weeks of daily, individual, 30 minute lessons with a trained Reading Recovery teacher. Acceleration is achieved when the child has developed a self-extending system of reading and writing strategies. A self-extending system of reading and writing is a network of effective processing strategies which inform subsequent independent literacy learning every time the child reads or writes (Clay, 199l; 1992). This means that the child controls a

system of strategies which enables self-monitoring and cross-checking sources of information, in-the-head and on-the-run, while reading and writing independently. Strategy knowledge informs subsequent independent literacy learning every time the child engages in reading and writing (Stanovich, 1986; Clay, 1991, 1992).

Emergent Literacy. Emergent literacy is the term used to describe a child's developing concept that print has meaning. This concept begins at home, prior to formal schooling, and develops into conventional literacy in school (Teale & Sulzby, 1989).

At-Risk. At-risk is the term which refers to a person or group whose likelihood for success in learning is minimal or worse (Harris & Hodges, 1995).

Discontinue. In Reading Recovery, when a child develops a self-extending system of reading and writing strategies, the child is discontinued from the program (Clay, 1993).

Self-Extending System. In Reading Recovery, a self-extending system is a system of reading and writing strategies which contribute to improvement each time the child reads or writes (Clay, 1993).

## Reading Models

Interactive Model of Reading. In this view, reading is a meaning-making process which involves interaction between the reader, the text and the reading context (Rumelhart, 1994).

Transactive Model of Reading. A transactive reading model views reading as a "performing art", a transaction between the reader, the text and the reading context (Rosenblatt, 1994).

## Assessing Reading Performance

Accuracy. Accuracy in oral reading is calculated by determining the percent of correctly read words in relation to the total number of words in the reading passage using the following formula:

$$100 - \frac{\text{Number of Errors}}{\text{Number of Words}} \times 100 = \_\_\_\_\%$$

(Clay, 1993)

Error Rate. Error (or miscue) rate is calculated by determining the ratio between the number of reading errors and the total number of words (running words) in the selection as indicated by the following formula:

$$\frac{\text{Running Words}}{\text{Errors}} = \frac{150}{15} = 1{:}10$$

(Clay, 1993)

Self-Correction Rate. Self-correction rate is the ratio between the number of errors plus the number self-corrections, divided by the number of self-corrections, as determined by the following formula.

$$\frac{\text{Errors + Self-Corrections}}{\text{Self-Corrections}} = \frac{15 + 5}{5} = 1{:}4$$

(Clay, 1993)

Independent Reading Level. In Reading Recovery, when the accuracy is 95% or better, as measured by a running record, the text is at the reader's independent reading level (Clay, 1993).

Instructional Reading Level. Instructional reading level refers to the level of text a child can read with normal teacher instruction and support. In Reading Recovery the range is between 90% and 94% (Clay, 1993).

Frustration Reading Level. When word recognition accuracy rate drops below 90% as measured by a running record, even with teacher support and instruction, the reading level is frustration (Clay, 1993).

Running Record. A running record is a measure of oral reading which shows the number of errors and self-corrections, an analysis of which reveals how well a reader understands the text and uses language and letter/sound cues (Clay, 1993).

## Text Reading Levels in Reading Recovery

Following is an approximate grade level for book levels used in Reading Recovery.

| Reading Recovery Levels | Grade Level |
|---|---|
| Levels A, 1 - 4 | Preprimer |
| Levels 5 - 8 | Primer |
| Levels 9 - 12 | Early Grade 1 |
| Levels 13 - 15 | Mid-Grade 1 |
| Levels 16 - 20 | End Grade 1 |

## Chapter 2

## Review of the Literature

### Theoretical Framework

The historical development of how children learn, traced through the theories of Rousseau, Pestalozzi, Dewey, Piaget and Vygotsky has influenced early years education and the theories of literacy development. In the eighteenth century, Rousseau developed the first child-centred, experience-based educational philosophy and curriculum (Schubert, 1986). Pestalozzi extended Rousseau's approach to include informal instruction (Morrow & O'Connor, 1995). Dewey saw children as active learners, meaningfully involved in social life and defended the experience of the child as the basis for education (Schubert, 1986). This view was also defended by Piaget who perceived children as interactive learners who continually alter and reorganize their knowledge (Morrow & O'Connor, 1995). Vygotsky (1978) underscored the construction of new learning through social, interactive and holistic activities. Each of these theorists has influenced education in the early years and theories of literacy development by a focus on: the whole-child, creating the best learning environment, learning rather than teaching, the social interaction inherent in adult-child and child-child relationships, meaningful, holistic learning activities, and activity-based, child-centered learning (Morrow & O'Connor, 1995).

Theories of literacy development define literacy, not as a program to develop strategies or cognitive skills, but rather as a sociopsycholinguistic

activity which begins in the home long before the child enters school (Britton, 1970; Clay, 1975, 1991; Butler & Clay, 1979; Routman, 1988, 1991; Bruner, 1983; Glazer, l989; Sulzby, 1989; Barron, 1990; Lipson & Wixson, 1991; Schickedanz et al, 1990; Clay, 1991; DeFord, l991; Holland, 199l; Goodman, l994; Pinnell, 1994; Cox, 1994; Hiebert, 1994). Literacy principles and practices are grounded in research from diverse disciplines: linguistics, language development, sociolinguistics, anthropology, psychology and education. Changes in ideas about beginning reading problems have paralleled the changes in views about beginning reading.

Views of beginning reading have changed substantially from the 1960s when the instructional emphasis was on phonics (Hiebert, 1988), to a broader, dynamic view in which young children are "emerging" or evolving into conventional literacy (Clay, 1966; Sulzby, 1988, 1993). The earlier view focused on teaching a set of pre-conceived beginning reading skills. In contrast, the current emergent literacy perspective focuses instruction on providing early reading and writing experiences for young children in order to build on what they already know about literacy. An analysis of Jeanne Chall's data led Adams (1990) to suggest that within the context of "connected and meaningful reading - a systematic phonics instruction was a valuable component of beginning reading instruction" (p. 8).

<u>How children learn oral language.</u> Linguists and pychologists have debated at length the how children learn oral language, the factors influencing language development, if it is innate, and if language growth is dependent on the environment. Three theories important to this

discussion on the acquisition of language are: behaviorist, nativist and interactionist.

The behaviorists. The behaviorist view of language acquistion is grounded in stimulus-response theory (Skinner, 1957). According to this theory, the child hears a word, reproduces its sound and the child is praised by the adult for the attempt. This view does not account for the extraordinary speed of language acquisition in children nor invented language such as, *I runned around the park.*

The nativists. The nativists believe that human beings have an innate device which predisposes them to learning language (Chomsky, 1974). This theory accounts for children's invented language such as, *I seed three sheeps at the farm* (a generalization past tenses and plural forms). Children develop their own rule-governed systems from which they generate oral language.

The interactionists. The interactionists incorporate the ideas of the behaviorists and the nativists in the view that both innate and environmental factors influence the production of language. The interactionists believe that the ability to think and conceptual development through interactions with adults (what "cold" means) contribute to the acquisition of oral language.

Halliday. Halliday conceptualizes language acquisition as an active process in which children acquire language to function in their environments (Strickland & Morrow, 1990). He identifies 7 categories of

language functions: instrumental language required for getting one's needs met such as, *I want some milk*; regulatory language such as, *Follow me...I know the way*; interactional language such as, *We can play this game together, but you'll have to read the rules*; language related to ideas and feelings such as, *I am happy because I was invited to the party*; heuristic or imaginative language such as, *Let's be queens and kings in a castle*; and representational language such as, *I'll tell you what we did at the lake on the weekend.*

The importance of language. Literacy acquisition is rooted in oral language and involves a transition from oral to written language (Britton, 1970; Clay, 1975, 1991; Routman, 1988, 199l; Bruner, 1983; Sulzby, 1989; DeFord, 1991; Lipson & Wixson, 1991; Goodman, 1994; Pinnell, 1994; Glazer, 1995) . Theories of literacy development define literacy as a sociopsycholinguistic activity which begins in the home long before the child enters school rather than as a program of strategies or cognitive skills (Britton, 1970; Clay, 1975, 1991; Butler & Clay, 1979; Routman, 1988, 199l; Bruner, 1983; Barron, 1990; Lipson & Wixson, 199l; Schickendanz et al, 1990; DeFord, 199l; Holland, 1991; Goodman, 1994; Pinnell, 1994; Cox, 1994; Hiebert, 1994; Bus & Ijzendoorn, 1995; Glazer, 1995; Sulzby, 1995, Teale & Sulzby, 1995). By school entry, most children have mastered the syntax, semantics and pragmatics which relate to the language of their homes. Not all language learned at home provides an equally good match to the expectations of the school. However, language differences, previously interpreted as differences in individual intelligence, are now seen as a reflection of the child's sociolinguistic background (Teale & Sulzby, 1989; Glazer, 1989; Clay, 1993). Oral language is related

to literacy development because it is through the oral language of social interactions that children first respond to meaning, which is fundamental to reading and writing. It is children's experiences within social, interactive and holistic contexts which connect and develop oral and written language (Dyson, 1994).

Learning the code. Children invent a way to mesh the symbol with their experience and witness the power in manipulating and sharing this experience with others, as suggested by written messages to mom (Dyson, 1994; Sulzby, 1989, 1993, 1994). Children change their symbols over time. Gestures give way to words, and pictures yield to print. However, the development of symbols is not linear (Vygotsky, 1978). Children may use earlier controlled symbols, such as talk or pictures in ways that are later replaced by writing. Thus, children are connected to print in different ways, based on their personal experiences and sociocultural conceptions (Dyson, 1990, 1994). Their first attempts to orchestrate message and print are revealed in meaningful experiences such as writing and reading their names, environmental print or books (Dyson, 1990; Clay, 1991).

In the 1960s, reading was viewed as the mastery of a set of beginning reading skills in contrast to the current emergent literacy perspective which focuses on a literacy development continuum of reading and writing behaviors which evolve into conventional literacy (Clay, 199l; Hiebert, 1988; Sulzby, 1993, 1995; Teale & Sulzby, 1989) and highlights the importance of early reading and writing behaviors, such as telling a story

while pretending to read and making scribbles and letter-like representations.

All children develop some emergent literacy behaviors through participating in literacy activities within their homes when reading and writing are needed to achieve objectives(Britton, 1970; Vygotsky, 1978; Butler & Clay, 1979; Mason, 1980; Bruner, 1983; Anderson et al, 1985; Hiebert, 1988; Adams, 1990; Barron, 1990; Clay, 1991; Lipson & Wixson, 199l; Slavin et al, 1991; Morrow et al, 1992; Ollila & Mayfield, 1992; Sulzby, 1993, 1994, 1994; Pinnell et al, 1994; Bus & Ijzendoorn, 1995; Glazer, 1995; Teale & Sulzby, 1995). Literacy events which support the development of emergent literacy behaviors take place in homes which provide books and easily accessible print and writing materials (Harste, Burke & Woodward 1994). Ideally parents model writing (eg. grocery lists, cheques, cards, etc) and encourage children to experiment with writing. Ideally they read to children on a daily basis, ask thought-provoking questions, and relate the story to the child's experience (Ollila & Mayfield, 1992). Literacy behaviors develop at home when children have opportunities to interactively explore, experiment and negotiate meaning within their social and physical environments (Morrow et al, 1990). Such literacy events are meaningful, purposeful, take place in a holistic context and often involve an adult-child relationship (Schickendanz et al, 1990; Depree & Iversen, 1994). It is through these early, social, interactive, meaningful experiences with written and oral language that children learn to understand and control their own language and print (Clay, 1991; Goodman & Goodman, 1994; Halliday, 1994; Harste et al, 1994).

According to Vygotsky learning takes place in social contexts. It moves from the inter-personal (guided through social interactions) to the intra-personal (guided by self) through a series of transformations (Vygotsky, 1978; Forman & Cazden, 1994; Cambourne, 1995). Speech connects these interactions that are interpersonal (i.e. conversations, guiding comments, questions, demonstrations) and internalizes them into self-regulating speech (Britton, 1970; Vygotsky, 1978; DeFord, 1994; Moll, 1994; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994). Children seem to internalize this regulatory speech as they engage in a task silently and with growing competence. This has been identified as the development of procedural metacognitive strategies (Cox, 1994).

Another theoretical principle offered by Vygotsky is the "zone of proximal development". This is the cutting edge of a child's learning where a child is supported by the guidance of an adult or more knowledgeable peer in problem-solving what could not be accomplished independently. This is accomplished by scaffolded instruction, which implies that it is individually responsive and temporary (Bruner, 1983; Palinscar, 1986; Kagan, 1990; DeFord, 1994). Finally, Vygotsky (1978) maintained that learners must engage in contextualized, holistic activity rather than activities which feature strategies or skills instruction in isolation.

A flexible literacy program in school capitalizes on the many resources children bring with them such as their language, drawing, playing, storytelling and print experiences. These resources/behaviors are reflective of children's literacy thoughts and concepts (Sulzby, 1993).

Children attempt reading long before they attend to print and their attention to print is evidence of their construction of meaning and generation of hypotheses (Mason, 1980; Goodman, 1986; Clay, 1991; Murphy, 1991; Harste, Burke & Woodward, 1994; Sulzby, 1994; Ruddell & Ruddell, 1994). Children's understanding of language and literacy is systematic, organized and rule-governed according to their understanding of language and literacy. Children learn and use literate behavior prior to school entry and formal instruction. Language and literacy develop interactively throughout school, growing more flexible and complex (Mason, 1980; Goodman, 1986; Clay, 1991; Murphy, 1991; Harste et al, 1994; Sulzby, 1994; Ruddell & Ruddell, 1994; Teale & Sulzby, 1995). Consistency between home and school in terms of language and literacy increases success in reading and writing. Children who are dependent on the school to become literate benefit from authentic, holistic, interactive literacy experiences (Hiebert, 1988, 1994) Home and community language environments provide richness still undiscovered. New links between home, community and school language environments must be developed to ensure children's continued language and literacy growth (Ollila & Mayfield, 1992; Moll, 1994).

Current thinking about the most effective way to approach literacy instruction in young learners supports interactional and transactional models of reading (Clay, 199l; DeFord, 1991, 1994; Goldenberg, 1991; Hill & Hale, 1991; Morrison, 1993, 1994; Goodman, 1994; Pikulski, 1994; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994; Rosenblatt, 1994). Within the interactional model, reading is defined as a dynamic meaning-making process which involves interactions between the reader, the text and the

context of the reading event (Lipson & Wixson, 1991). According to the transactional model, reading is a meaning-making process, a transaction between the reader and the text (Rosenblatt, 1991). Reading Recovery is an early intervention which builds on the transactional model of reading and presents literacy instruction in a social, interactive, transactive, holistic and meaningful context (Clay, 1991; Depree & Iversen, 1994; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994).

## Review of Empirical Research on Reading Recovery

Reading Recovery was developed in 1976 by Marie Clay at the University of Aukland. It is now nationally and internationally implemented with teacher training sites in New Zealand, Australia, England, the United States and Canada. It is a short term, early intervention program designed to address the needs of the lowest achieving students who fail to succeed in learning to read after one year of reading instruction (Clay, 1991, 1992).

In the 1970s, Clay (1985) began research to determine the possibility of using early intervention to decrease failure in learning to read. At regular meetings, Clay and her team of teachers discussed, analyzed and justified pupil and teacher responses during instruction, procedures and instructional decisions. The procedures evolved over a three year period, culminating in field trials with 122 children in 1978 and replications in 1979 with 122 children (Clay, 1985).

After one year, discontinued Reading Recovery children had accelerated and performed at levels comparable to higher achieving peers.

Follow-up studies showed that discontinued Reading Recovery students, regardless of ethnicity, socio-economic status or linguistic group, continued to make progress comparable to the average student. The New Zealand studies demonstrated that, with appropriate, individual instruction, at-risk students can function at average levels for their classes and effectively use reading and writing strategies. These results have been replicated in New Zealand, Australia and the USA (DeFord, Lyons & Pinnell, 1991).

The American experience. In 1984-85, Ohio's first pilot study of Reading Recovery began to train teacher leaders with Marie Clay and Barbara Watson instructing a group of Reading Recovery teachers and one professor (Pinnell, 1989). The lowest-performing children (n=55) from six urban schools were selected for Reading Recovery in January of their grade 1 year. The children were compared to another group of randomly selected lowest-performing grade 1 students (n=55) from the same six urban schools. The Reading Recovery children out-performed the comparison group and compared favorably to the grade 1 students in general.

In 1985-86, on the basis of a pre-test, 110 lowest achieving grade 1 students from six schools were randomly selected for Reading Recovery or another intervention (Pinnell, Fried & Estice, 1991). The other intervention, which was not described, closely followed the basal reader lessons. It was delivered daily, within the classroom, by a trained teaching assistant, for the entire school year and focused on drill and skill practice. Reading Recovery students received an average of 67 daily, individualized

lessons. Of the students who received at least sixty lessons, 73% were successfully discontinued.

At the end of the year, tests on Clay's (1993) Observation Survey demonstrated that Reading Recovery children out-performed the comparison group and achieved an average grade 1 level on all measures. The groups were followed for two years. Text reading levels, in both the intervention groups and random samples of students at appropriate grade levels, were tested after one and two years. Group designation of the children was unknown to the testers. The average of text reading levels showed that the Reading Recovery group outperformed the comparison group in both years by at least three reading levels (Levels 9 -12 = early grade 1; Levels 13 - 15 = mid-grade 1; Levels 16 - 20 = end-grade 1). An analysis of these results show that the differences in text reading level between the 2 groups are minimal.

| | | |
|---|---|---|
| May, 1987 | Reading Recovery Group | 14.39 |
| | Comparison Group | 11.23 |
| May, 1988 | Reading Recovery Group | 19.70 |
| | Comparison Group | 16.71 |

Reading Recovery has been tested at twenty-two sites in Ohio. Without exception, the majority of students made accelerated progress and achieved reading levels average for their school or district (Clay, 1993).

Clay believes that it is critical to intervene at the beginning of reading instruction before the child experiences failure (Pinnell, 1987;

Pinnell et al, 1990; Clay, 1991, 1992; Madden et al, 1991; Pikulski, 1994). Clay recommends Reading Recovery as a first step in the early intervention of reading difficulties. The program is an individualized response based on the child's strengths and weaknesses and addresses individual needs. Research supports early intervention rather than later remediation (Adams, 1990; Madden et al, 1991; Wasik & Slavin, 1993; Pinnell et al, 1994) because children unsuccessful in their reading efforts, develop anxiety about reading and a negative concept about themselves as learners (Madden et al, 1991; Slavin et al, 1993).

Research (Allington, 1983; Adams, 1990; Goldenberg, 1991; Clay, 1992; Pikulski, 1994) demonstrates that successful reading interventions must include the teaching of effective self-monitoring strategies with daily opportunities to write independently and read books known to the child. Further, research supports the position that superior results are achieved through a balance between the strategic reading of whole, meaningful texts and writing for authentic purposes (Minister of Education, NZ, 1985; Adams, 1990; Clay, 1991; DeFord, 1991, 1994; Goldenberg, 1991; Hill & Hale, 1991; Morrison, 1993, 1994; Pikulski, 1994; Pinnell et al, 1994). Three programs which fulfill all of these criteria are: Reading Recovery, Reading Success and Reading/Writing Group (Pinnell et al, 1994). However, Pinnell et al concluded that Reading Recovery was the only intervention for which the "mean treatment effect was significant on all measures" which included dictation, text reading level, Gates-MacGinitie and Woodcock.

Dorn and Allen (1996) describe a successful Reading Recovery/Early Literacy program in Arkansas. The Early Literacy groups met for 45 minutes daily. The format included a variety of reading and writing activities. Activities using children's names were used to develop awareness of structure, functions and relationships in writing such as upper and lower case letters, concept of a letter and word, letter similarities and differences, length of word and concept of first and last.

Shared reading of ABC charts or books provided children with a picture/sound cue to relate to each letter. The teacher related the daily reading and writing to the chart and children could use the charts as a reference.

Familiar rereading was accomplished through the use of easy, predictable texts, charts, group generated stories and other writing in the classrooms. One child each day was selected to read a book that had been previously introduced to the group. The reading was conducted on a one-to-one basis and a running record was taken. Two or three teaching points were made to develop that child's problem solving ability to unlock unknown words.

Shared reading of Big Books, chart stories, poetry and teacher-produced materials, engaged the children in making predictions, fluent reading and problem-solving with group support.

Teachers read selections of recommended literature which provided children with vocabulary, language and content that would be beyond their independent reading levels.

Word analysis activities based on daily literacy events provided opportunities for children to use problem-solving strategies. For these activities, teachers used materials such as magnetic letters, sentence strips, word cards and word walls.

Interactive writing was provided to help children acquire early literacy behaviors which are necessary for successful reading. Such behaviors include: directionality, one-to-one matching, concept of a letter and a word, phonological awareness and developing a bank of high frequency words.

Shared writing focused on producing a meaningful story through dialogues between the teacher and children. The teacher compiled the finished product into Big Book form. It was illustrated by the children and used for familiar rereadings.

Journal writing provided an opportunity for independent writing. The teacher wrote a story, modelled and verbalized problem-solving. Children were encouraged to rehearse their stories before the group prior to writing them. During journal writing the teacher worked individually with the focus child. This was followed by a teacher response to each child's writing and a fast teaching point for each child.

Cut-up sentences were used once a week with the focus child. The teacher cut up the message (who wrote the message is not clear from the article) and the child reconstructed it. This provided practice in visual searching and using syntactic awareness.

A new book, selected for the following day's focus child, was introduced to the group at the end of the lesson. Specific questions were directed to the focus child and that child read certain pages or the whole book independently. This was followed by a group reading.

The results are encouraging. In this program the lowest achieving first graders received Reading Recovery and other low achievers, instead of going on a waiting list for Reading Recovery, received small group literacy instruction from trained Reading Recovery teachers. The preliminary data in the pilot year showed that schools with the Reading Recovery/Early Literacy program discontinued more students than schools which did not offer the program.

When space in Reading Recovery became available, Early Literacy group children began Reading Recovery. Fifty-six percent were discontinued after an average of 25 lessons, compared to an average of 65 lessons (in 13 weeks) for children who received Reading Recovery only. Dorn and Allen (1996) note that 30% of children who received the small group Early Literacy program achieved average levels of reading and did not require the individual programming of Reading Recovery. In my Reading Recovery group three students were discontinued after 12 weeks

and 51 lessons; 25 weeks and 113 lessons; and 32 weeks and 149 lessons.

The Dorn and Allen (1996) study provides support for a two-program intervention model. Their innovation allows the Reading Recovery teacher to deliver Reading Recovery to the neediest individuals, while providing small group support to the children who qualify for Reading Recovery, but for whom there is no space. This model may address the concern raised by Shanahan and Barr (1995) and Centre et al (1995) that, without any intervention, between 20 and 30% of at-risk children in September of grade 1 are no longer at-risk by the end of grade 1.

Tumner (1990) suggests that Reading Recovery may be responsible for a temporary acceleration in learning to read but may not systematically address the reading-related skills necessary for progress that endures over time. The skills referred to are: phonological awareness, syntactic awareness and phonological recoding. In Reading Recovery the daily writing and "sound and letter boxes" (Clay, 1993) are used to teach phonological awareness and phonological recoding (i.e. the ability to relate letters to their corresponding sounds). The cut-up sentences are used to teach syntactic awareness. Although all three reading-related skills are taught in Reading Recovery, how often and how intensively is left to the discretion of the Reading Recovery teacher. The effectiveness of teaching these fundamental reading-related skills is thus reliant upon the skill and timing of the Reading Recovery teacher. Tumner (1990) suggests that it may be advantageous to plan more systematic and intense instruction in these reading-related skills for at-risk learners.

Criticisms of Reading Recovery have been identified and discussed by Shanahan and Barr (1995), who point out that Reading Recovery has been a topic in over one hundred journal articles and professional presentations. However, few authors have given an empirical evaluation of the efficacy of this program. The published, empirical evaluations are too narrow in number and scope to allow the analysis needed by policy makers.

In their review of published and unpublished Reading Recovery studies, Shanahan and Barr found no research that was not seriously deficient in terms of methodology or reporting. For example, a bias in favor of Reading Recovery is created by the omission of data on students with poor attendance or students who do not complete the Reading Recovery intervention. This is a serious allegation and future research into Reading Recovery must ensure methodology and reporting that is beyond reproach. Also, it seems important to establish broader empirical evaluations which provide the analysis required by policy makers.

Regression to the mean. According to Shanahan and Barr (1995) it is misguided to compare Reading Recovery students with regular grade 1 students because of the effects of regression to the mean. This is the tendency of scores to vary toward the expected average score. The effect of this in Reading Recovery is that the Reading Recovery children comprise the group most likely to score upward on retests, even if no learning has taken place. However, the regression to the mean phenomenon does not account for the longevity of gains in learning,

documented in many studies (DeFord, Lyons & Pinnell, 1991; Pinnell, Fried & Estice, 1991; Slavin et al, 1993; Clay, 1994; Pikulski, 1994; Dyer & Binkney, 1995).

Differences in beginning formal instruction. Shanahan and Barr (1995) pointed out that in New Zealand, children selected for Reading Recovery at age six have already received one year of reading instruction. In North America children generally do not experience formal reading instruction until grade 1, when they are six. Adherence to the North American policy of beginning Reading Recovery in September of grade 1 is likely to create a subset of children in Reading Recovery who are not really at-risk. Clay (1990) defends that policy by underscoring the fact that all prevention programs render treatment to people who do not need them. She explains that the delivery of Reading Recovery is based on predictions of future risk of failure in learning to read in grade 1. Such predictions require the system to make judgments regarding the limits of availability of the intervention.

Identifying children at-risk. At-risk in Reading Recovery is a relative versus absolute notion (Shanahan and Barr, 1995). A child selected for Reading Recovery is at-risk relative to the performance of classmates, teacher evaluation and Observation Survey (Clay, 1993) scores. Entering and discontinuing levels are based on the average at each site. But schools differ in size, type and population. Thus, identifying children "at-risk" is relative to the norm in each school division. The relative notion of at-risk, based on the averages at each site, means that the Reading Recovery groups may follow vastly different first year programs and use a

variety of sequences of instruction to meet individual requirements. Because the Reading Recovery intervention adapts to most educational contexts, it responds to individual needs. It is no wonder that research findings reviewed are inconsistent. Apples and oranges are sometimes being compared.

Shanahan and Barr (1995) reviewed Barr's 1971 study which demonstrated that half of the children who were among the lowest 20% in September of grade 1 were no longer in that lowest achieving group at the end of grade 1, even though they received no special intervention. The authors also reviewed a study by Center et al (1995) which showed that substantial gains were measured among the lowest achieving 30% of children who received no Reading Recovery intervention.

Clay explains these discrepant findings by pointing out that, in New Zealand, it is within the first year of school, the transition year, that the child translates his/her prior competencies into effective responses which promote learning within the classroom literacy program (Clay, 1990). It is after this first year of literacy instruction that children are identified for Reading Recovery in New Zealand. This raises questions about beginning Reading Recovery after Kindergarten in Canada, rather than after the child has had opportunities to develop literacy competencies in a good classroom program.

Shanahan and Barr (1995) noted that the Ohio State Pilot required double the average number of lessons that were required for discontinuing in New Zealand. This has major implications for the cost-

effectiveness of Reading Recovery in North America. Shanahan and Barr suggested that the inflated average number of lessons in the USA may be caused by the lower entry scores of the American Reading Recovery students, the disparity in instruction between Reading Recovery and American classrooms, or more supportive New Zealand home environments which foster progress in Reading Recovery. The high average number of lessons required for discontinuing during the first year of the Ohio State Pilot was greatly reduced in subsequent years (Continuing Contact, Winnipeg, 1996).

Successful discontinuation. According to Shanahan and Barr (1995), the major problem with Reading Recovery research is related to who is included in the experimental group. In the experimental sample, Reading Recovery studies tend to include only the children who are successfully discontinued from the program . This exaggerates the success of the intervention. Also, most research did not count children with poor attendance or learning problems and failed to state this is the discussion. Shanahan and Barr suggested that all children who are selected for Reading Recovery must be counted in the analysis. Further, they suggested that research should include demographic information on both control and experimental groups.

The preceding criticisms, notwithstanding, Shanahan and Barr (1995) stated that Reading Recovery students make gains comparable to, and at times, greater than, average students during their grade 1 year. By grade 3, the gains made by Reading Recovery students are comparable to the classroom average.

The goal of Reading Recovery is to accelerate the at-risk child so that after a short-term early intervention of reading and writing support, s/he develops a self-extending system of literacy behaviors. The premise is that this permits the child to function independently at an average or above average level within the classroom (Clay, 1991; 1992). Reading Recovery is one intervention which presents literacy instruction in a holistic, interactive and meaningful context. Our views of how children learn and how we should teach them have an interesting historical development. Current thinking about the most effective way to approach literacy instruction in young learners supports an interactional model (Clay, 1991; DeFord, 1991, 1994; Goldenberg, 199l; Hill& Hale, 199l; Morrison, 1993, 1994; Pikulski, 1994; Pinnell, Lyons, DeFord, Bryk &Seltzer, 1994).

Limitations of Reading Recovery

In summary, Shanahan and Barr (1995) reviewed over 100 published and unpublished articles and presentations on Reading Recovery. They identified the following limitations:

1. The empirical evaluations were too few and narrow in scope to permit the analysis required by policy makers.

2. All Reading Recovery research was seriously inadequate in terms of methodology or reporting.

3. The effects of regression to the mean tends to skew the scores toward the expected average and inflate the results.

4. Unlike their peers in New Zealand, North American children have not had a year of reading instruction by age 6 and there is a risk of creating a subset of children in Reading Recovery who are not really at-risk.

5. In Reading Recovery at-risk is relative to the performance of classmates, teacher evaluation and the Observation Survey (Clay, 1993) scores. At-risk is relative to the norm in each school division.

6. The lowest achieving 20% to 30% of grade 1 children in September are no longer in that group at the end of grade 1 - even with no special intervention.

7. The cost-effectiveness of Reading Recovery is challenged by the Ohio State Pilot, which required double the average number of lessons required in New Zealand.

8. Reading Recovery research tended to exclude from the experimental group, students who did not discontinue and those with poor attendance. This was not stated in the discussion.

All of the preceding limitations, except the one regarding who is included in the experimental group, apply to this investigation. Therefore, the results must be interpreted with these constraints in mind.

Instructional Implications

Teachers' restricted views of literacy may prevent them from recognizing and valuing children's home literacy experiences. Children are variously successful at school in capitalizing on literacy knowledge acquired at home. If the instructional program at school is restricted to isolated skill instruction, there are serious implications for children who

depend on school for becoming literate (Dyson, 1990). Children need a supportive environment in which to explore their own literacy agendas. Concurrently, they need guidance and scaffolding from knowledgeable teachers who assist children in connecting and expanding their various literacy experiences.

Literacy Development. These early literacy experiences and social interactions are organized into schemata which help children construct meaning from language and print (Goodman, 1986; Goodman & Goodman, 1994; Ruddell & Ruddell, 1994).

The way children learn language reflects their acquisition of literacy (Britton, 1970; Clay, 1975, 199l; Y. Goodman, 1986; Sulzby, 1989; Lipson & Wixson, l991; DeFord, 1991; K. Goodman, 1994; Goodman & Goodman, l994; Pinnell, 1994, Hiebert, 1994. Frith (in Ehri, 1994) has described the development in learning to read in three phases: logographic, alphabetic and orthographic. In the logographic phase, the child uses visual context or graphic features to read, for example, uses logos to read McDonald's or Cheerio's. The alphabetic phase begins with the association of grapheme-phoneme relationships, associating the /d/ in dog with the letter name for d and ultimately sounding and blending the word, dog. The orthographic phase is characterized by the use of alphabetic principles, patterns, shared letter sequences and making analogies to unlock unfamiliar words.

Linguistic awareness (ability to understand and segment words, syllables and phonemes from speech) and metalinguistic awareness (knowledge about one's language and ability to direct, regulate, monitor

and evaluate) are important in early reading (Yopp & Singer, 1994). Research suggests a high correlation between beginning reading and spelling (Juel, Griffith & Gough, 1986; Ehri & Wilce, 1987; Juel, 1988; Ehri, 1989). The development of phonemic awareness (knowledge of component sounds of speech and ability to blend and decode) is critical to reading and writing development prior to grade two (Ehri & Wilce, 1987; Yopp, 1992). Reading and writing are reciprocal processes (Calkins, 1983; Graves, 1983; Pinnell, 1989; Clay, 1993). Presenting writing in meaningful and holistic contexts provides support. Having to write ideas focuses attention on letters and how they cluster in repetitive segments.

Thus, the current thinking is that reading and writing are two parts of the same process and emerge in an interrelated way in literacy development (Calkins, 1983; Graves, 1983; Shanahan & Lomax, 1986; Pinnell, 1989; Lipson & Wixson, 1991; Clay, 1993). Shanahan and Lomax (1986) concluded that there is a reciprocal relationship between reading and writing and that an interactional model of instruction provides benefits of knowledge-sharing from both entities.

In addition to using the interactional model of reading instruction, Palincsar and Klenk (1992) conclude that children also need opportunities to discover independently-developed strategies as they read and write in holistic, meaningful situations. This challenges the current remediation practices used in addressing the needs of "at-risk" learners. Palincsar & Klenk (1992) advance three metaphors which are consistent with the Vygotskian principles of learning as a social, interactive and holistic activity. The metaphors are: "instruction as scaffolding, learning as

cognitive bootstrapping, and classrooms as communities of inquiry" (1992, p. 211). The encouraging outcomes of this approach in addressing the needs of the at-risk student challenges traditional methods. It underscores the need to revisit and re-define educational programs for at-risk learners in terms of the teacher, the learner and the curriculum.

## Research on Instructing At-Risk Learners

Pikulski (1994) reviewed five effective, early intervention programs for preventing reading failure in at-risk learners. An impressively growing body of research supports the notion that failure in learning to read is preventable in all but a very small portion of children (Clay, 1985; Hall, Prevatte & Cunningham, 1993; Hiebert, Colt, Catto & Gury, 1992; Hiebert & Taylor, 1994; Ohio State University, 1990; Pinnell, 1989; Reynolds, 1991; Slavin, Madden, Karweit, Dolan & Wasik, 1992; Taylor, Frye, Short & Shearer, 1992; Taylor, Strait & Medo, 1994 in Pikulski, 1994). Pikulski found very little evidence that interventions after grade 2 were effective and Kennedy, Birman & Demaline (1986) found that interventions after grade 3 were largely ineffective.

According to Pikulski (1994) intervention programs to prevent reading problems are actually cost effective in comparison to the costs of remediation, retention and costly but minimally successful special education programs. From the perspective of eliminating humiliation and frustration, the human savings are incalculable.

The five programs reviewed by Pikulski are: Success for All, the Winston-Salem Project, the Boulder Project, the Early Intervention in Reading Project and Reading Recovery. All five programs met the following criteria. Accounts of the programs were published in a national American education journal, reviewed by a board; focused on grade 1 students identified as being at-risk for learning to read; and provided data that suggested program effectiveness. The programs are described first and then critiqued. Finally, the salient features of successful early reading instructional programs are outlined.

Success for All. Success for All is a total school program for Kindergarten to grade 3 and was implemented in very low socioeconomic, inner-city schools in Maryland and Pennsylvania. This program focus involves both classroom instruction and supplemental support. The heterogeneously grouped classrooms are grouped by reading level for 1 1/2 hours per day of reading instruction in groups of 15 to 20. What distinguishes "Success for All" from regular programs is that whole group, direct instruction is complemented by 20 minute, one-to-one tutoring, given by the child's classroom teacher, for those who require it. The tutoring of the at-risk students uses the same strategies and skills emphasized in the whole group reading activity. Preschoolers attend 1/2 days and kindergarten is full days in the Success for All schools.

Winston-Salem Project. The Winston-Salem Project of North Carolina (Pikulski, 1994) involved the grade1 classes of two schools. One school was middle class and the other was in a low socioeconomic district. The heterogeneously grouped classrooms were taught for thirty

minutes in each of the following blocks: basal block; writing block; working with words block and self-selected reading block. The basal block used paperbacks, an anthology of children's literature and teaching suggestions from a new basal series. The writing block included independent student writing and mini-lessons of five to ten minutes. The working with words block focused on learning to read and spell words, a word wall and using manipulatives to make words. The self-selected reading block included reading books from a variety of genres and related to science and social studies themes. The program provided teacher continuity by having the same teacher follow the grade 1 class into grade 2. Three hours and fifteen minutes per day were devoted to reading-related activities and at the school with the greatest number of at-risk learners, the chapter one and special education teachers were used to provide an additional 45 minutes of small group instruction.

Early Intervention in Reading. Several schools in Minnesota implemented the Early Intervention in Reading (EIR) program (Taylor, Short, Shearer & Frye, 1995) in middle and low socioeconomic schools. In this program, the classroom teacher provides an additional 20 minutes of daily reading instruction to the 5 to 7 lowest achieving students. The focus was on: repeated readings of picture books or child-generated summaries of these books and word activities that emphasized phonemic segmentation, blending and other word recognition skills. In addition, individuals or pairs read from the small group with the teachers, aides or volunteers for five minutes.

Boulder Project. The Boulder Project (Pikulski, 1994) was implemented in two schools. Chapter 1 teachers worked with a group of three children for 30 minutes a day and an aide worked concurrently with another group of three children using lessons planned by the teacher. In mid-year they switched groups. The instructional time included: repeated readings of predictable books; teaching word identification skills by analogy or word pattern; writing words from the word pattern activity and independent writing.

Reading Recovery. As described, Reading Recovery is an individually designed program for the lowest achieving grade 1 students. The program is delivered for 30 minutes daily by a trained teacher. The focus is: rereading familiar books; taking a running record of a book introduced the previous day; working with words and letters; having students write as independently as possible; cutting up and reconstructing sentences which go home for practice; and introducing the underlying concepts, language and specific vocabulary associated with a new book and reading it.

Critique of the programs. The five programs represent a great deal of variation in how they relate to the regular classroom reading program. Both Reading Recovery and the Boulder Project are delivered outside the classroom and are supplemental to the classroom reading program. Neither of these two programs addresses the important issue of how to improve poor classroom reading instruction.

Although EIR is delivered by the classroom teacher within the classroom, there are no recommended changes to coordinate the classroom reading instruction with EIR instruction. EIR is added to the regular classroom reading program. The same is true for Reading Recovery.

The Winston-Salem Project and Success for All incorporate changes in instruction at several grade levels. The Success for All program involves: preschool and full-day kindergarten; clearly described reading instruction; a variety of personnel to maintain small reading groups; and grouping across grades 1 to 3 based on reading level.

Similarly, the Winston-Salem Project involved school-wide change. Teaching is organized into 30 minute blocks for all students (at-risk and not at-risk) and 45 minutes of teaching is added to the school with the greatest number of at-risk students.

Clay (1993) recommends a high quality literacy program as the first step of an effective early intervention program. Allington and McGill-Franzen (1989) report on the importance of effective classroom instruction for at-risk students and the need for coordinating classroom instruction and intervention programs. Pikulski (1994) suggests that the positive effects of these five programs might be enhanced if high quality literacy programs at the classroom level were coordinated with high quality early intervention programs.

One-to-one tutoring is used exclusively in Reading Recovery and to some extent in Success for All and EIR. However, small group instruction is the predominant mode of instruction in EIR, Success for All, and the Boulder and Winston-Salem Projects. According to a review by Wasik and Slavin (1993), individual tutoring is the most effective mode of instruction. The success of the Boulder Project and EIR demonstrate that at least some at-risk students can be successful in small group settings. This suggests that early intervention might begin in a small group and move to individual instruction for those students who need more intense support.

Pikulski (1994) underscores the need for additional instructional time for at-risk learners. However, he cautions that critical to success is what is done during the additional instruction time devoted to reading.

All five projects used natural texts with non-controlled vocabulary (only Reading Recovery used them to the exclusion of all other texts). All five programs used no traditional workbooks or isolated skills practice materials. Pikulski (1994) suggests that the ideal reading texts in early intervention programs would be some combination of natural texts, predictable texts and teacher/child generated texts.

All five programs present reading as a meaning-making process and also focus on word identification strategies to promote independence in reading. Adams (1990) documents a strong research base that identifies greater achievement in reading with instruction that balances reading meaningful texts and word identification strategies.

In all five programs, the most frequently used teaching activity was the repeated reading of books and other texts. The efficacy of this technique in contributing to fluency is well researched (Dowhower, 1989; Herman, 1985; Samuels, 1979 in Pikulski, 1994). In Reading Recovery, the student reads a new book after the teacher has introduced the content and vocabulary. The student reads the same book the following day and then the book is available for rereading during later lessons or at home. Some of the programs use partner or small group repeated reading. The number of repetitions varies from program to program. Some instruction in comprehension is given, but the majority of teaching time is devoted to word recognition fluency, which has been identified as a major concern for at-risk students.

Letter and word level instruction is a part of all five programs. Phonemic awareness training is included in EIR, Reading Recovery and Success for All. This enhances children's awareness that the spoken word is comprised of identifiable sounds.

Writing is included in all five programs, mostly focusing on word recognition. The writing component in Reading Recovery and the Boulder Project is brief. The writing is a student generated sentence or two, based on the current story or word patterns in that lesson. The writing activity in the Winston-Salem and Success for All programs is more extended. The writing in EIR is a summary of what has been read, composed by the groups of participating students.

Assessment procedures vary from project to project. Daily running records are used to monitor fluency, error and self-correction patterns in Reading Recovery. Running records are documented every three days in EIR. Oral reading in checked every week in the Boulder Project and comprehensive assessments every quarter. The three supplementary programs follow progress in oral reading. Success for All evaluates students every eight weeks. Writing portfolios and teacher observations are the means of assessment in the Winston-Salem Project. Pikulski (1994) identifies successful early interventions programs with instruction based on systematic and regular assessment.

All programs, except the Winston-Salem Project, include home reading. The Winston-Salem Project made reference to increased parent participation in school activities since the inception of the project. Therefore, the omission of home reading may have been an oversight in the writing of the report. The most impressive parent involvement is in Success for All, which includes a school-based parent support team. Twenty minutes of home reading daily is part of Success for All. The Boulder Project students take books home nightly and are reinforced with gift books. Every third day, the EIR students must read a story summary at home. Reading Recovery students take home and read: the cut-up sentence and one or more books daily. Although it varies, all projects include a home reading component.

Experienced, certified teachers are used in all five programs and teacher aides are used in two programs. In EIR, a teacher aide listens to one or two children read story summaries. The teaching is delivered by the

the EIR-trained classroom teacher. The Boulder Project uses a teacher aide to deliver the same lesson as the teacher, who takes responsibility for lesson plans and decisions.

During the first year of the program, consultation is available in all five programs and teachers new to the programs can network with experienced teachers. Pikulski (1994) emphasizes the importance of this support for any teacher who is embarking on an early intervention program.

The program with the greatest support for teachers is Reading Recovery. During year one, Reading Recovery teachers-in-training meet weekly with the teacher leader. These meetings include two opportunities over the year for each teacher to benefit from peer observation and responses to his/her teaching of a Reading Recovery lesson, behind-the-glass. Flexible and less intensive consultation is available in the Boulder and EIR projects.

Teacher training varies among the projects. Reading Recovery requires the most rigorous training, which includes a 30-hour session prior to the beginning of the school year and 2 1/2 hours weekly over the first year. The Winston-Salem Project provides a week of training before the school year and meetings of unspecified duration throughout the school year with the curriculum coordinator. One or two days of training is provided for teachers in the EIR and Success for All Projects. Training before the school year was not described in the Boulder Project report.

## Characteristics of Successful Early Reading Programs

Based on Pikulski's (1994) evaluation of five early intervention programs, recommendations for successful early years literacy instruction for at-risk learners include:

* Coordination of the instruction with high quality classroom literacy programs.

* More time devoted to reading instruction than is received by children who are not at-risk. The instruction must be high quality.

* Small group instruction with individual instruction for at-risk children.

* Early intervention, preferably in grade 1. The goal is to prevent reading difficulties.

* Use of simple, predictable, natural language texts

* Repeated readings of the same text to develop fluency and confidence.

* Focus on word patterns, phonemic awareness and phonics instruction.

* Daily writing component which draws the child's attention to letters and words.

* Continuous assessment that tracks the student's progress and drives instruction.

* Daily home reading component.

* Teacher training before initiating the program and providing with continuous teacher support for at least the first year of the intervention.

Reading Recovery provides early intervention to support literacy development in at-risk learners that is consistent with 10 out of 11 of Pikulski's (1994) recommendations for a successful early intervention program for at-risk learners.

# Chapter 3

## Overview of the Study

This research examines the effects of the Reading Recovery program as an early intervention for children at-risk in learning to read in grade I. At-risk in Reading Recovery refers to the children whose scores on Clay's (1993) Observation Survey of Early Literacy Achievement fall within the lowest 20% of their class. Eight children from the same grade I classroom, all identified by Clay's (1993) Observation Survey of Early Literacy Achievement as being at-risk in learning to read in grade 1, were monitored and followed to the end of grade 2. One group of 4 children was provided with Reading Recovery. The other group of four children, because of budgetary restraints, received no Reading Recovery. The progress of the two groups of children was monitored and compared using the tasks in the Clay (1993) Observation Survey as well as the Alberta Diagnostic Reading Program (1986) which contains passages at reading levels beyond the grade 1 level, which is the ceiling level of the literature selections used in the Reading Recovery program.

Reading Recovery is an early intervention program for children at-risk in learning to read in grade 1. My research was initiated in my training year as a Reading Recovery teacher. It was the first year my school division selected teachers to train in Reading Recovery. There were no data available on the students within my school division regarding the effectiveness of Reading Recovery. My research provides data on the at-risk grade one students selected to participate in the Reading Recovery

Program in the school in which I was involved and compares their grade I performance with at-risk non-Reading Recovery students in the same school. It also examines the end of year carry-over effects in grade 2.

## Method

A case study design was chosen because this research method was appropriate to time and place constraints, which limited the investigation. Descriptive case studies, however, are helpful in the identification of questions that require further research. High-quality case study research is achieved through close contact between subject and data collection from multiple sources (Bogdan & Biklen, 1982). This case study research meets the criteria of intense contact between subject and data collection.

This study compared the reading achievement of 4 at-risk students who participated in the Reading Recovery program and 4 at-risk students who did not, because of resource constraints, before the intervention, at the end of grade 1, and one year later.

### Subjects

The subjects were all grade one students who were identified as being at-risk in learning to read. They were from the same grade one classroom in a lower middle-class/working-class urban school. The school is dual track, English/French-Immersion. The children in the study were in

the English program. The target group consisted of 3 boys and 1 girl. The comparison group also consisted of 3 boys and 1 girl.

## Procedure

Students are selected for Reading Recovery regardless of ethnic, linguistic or socio-economic background, intelligence, language achievement, physical handicaps or perceived learning disabilities. The identification involves observation by a team of kindergarten teachers, grade one teachers and the trained Reading Recovery teacher. The identified children are assessed using An Observation Survey of Early Literacy Achievement (Clay, 1993). The final decision regarding participation is made by identifying which children are the neediest at that point in time. After selection, the students begin an individually delivered program with a trained Reading Recovery teacher.

All eight children were identified in September, 1994, by their grade 1 teacher as being at-risk for learning to read. The Observation Survey was administered to all eight children. In consultation with the classroom teacher, the Reading Recovery Teacher Leader and on the basis of the results of the Observation Survey, four children (cases 1, 2, 3 and 4) were selected to participate in the Reading Recovery program. Due to budget limitations, the other four children (cases 5, 6, 7 & 8), ranked as at-risk through the Observation Survey (Clay, 1993), were not selected to participate in the Reading Recovery intervention. This was the author's training year as a Reading Recovery teacher.

The Reading Recovery program consists of thirty minute, daily lessons which are highly structured according to the following format: (1) rereading of known books, focusing on meaning; (2) taking a running record using a book introduced in the previous lesson to assess the application of reading strategies and inform the next part of the lesson which focuses on the code; (3) working on letter identification and making and breaking words using plastic letters; (4) writing and, within this context, hearing and recording sounds in words; (5) reconstructing the child's written story, which has been cut up; and (6) introducing and attempting to read a new book. This story is used the next day to take a running. Within the context of reading and writing, the Reading Recovery teacher is promoting the use of problem solving and reading strategies which lead the child to develop a self-extending system of reading.

The comparison group followed the language arts program within the classroom. The grade 1 teacher began the year teaching reading through the use of charts, poems and the Literacy 2000 (1989) books. Literacy 2000 (1989) books were used for silent reading, buddy and guided silent reading. In addition, the teacher chose selections from the Journeys (1988) reading program to augment theme-related reading materials. Students also engaged in a printing lesson on letter formation preceding journal writing three to five times per week. Also prior to journal writing the teacher led the class in brainstorming, activating prior experiences and modelling. Some copying, to facilitate task completion, but very little and only in the beginning weeks was required. Starter phrases such as This is ...., I like..... were provided. Work on phonetic skills followed the journal writing. Just before March, the teacher introduced formal and separate

spelling lessons based on the Dolch word list of the 220 most frequently used words and emphasized vowel sounds. Thus, the grade 1 teacher provided the children with a rich and supportive Language Arts program which included daily opportunities to read and write and emphasized meaning as well as grapheme/phoneme relationships.

The grade 2 teacher used a theme approach to teaching reading. She included work on sight words and had three homogeneous reading groups. The reading groups had guided silent reading and group reading. In addition, the children had independent silent reading for 15 minutes daily. Classroom reading material was eclectic and multi-level. The grade 2 teacher augmented the Journeys (1988) and Impressions (1984) reading programs with additional selections of poetry, prose and non-fiction. Her lowest reading group read Sunshine (1988) books and her highest reading group read books of their choice. Writing Process in her classroom began with brainstorming for ideas with a partner and sharing this with the whole group. The actual writing was done independently and read to a partner. The partners checked their work together for spelling, punctuation and meaning. The teacher edited individually with children. Not every writing piece was made into a good copy. Author's chair was a daily event at which children shared their on-going works. Every Friday the children wrote a TWAS (This Week At School) letter home. Most parents made responses in their children's TWAS journal. At the end of November The Canadian Spelling Program (1979) was added to Language Arts. Weekly lessons included a pretest, activities with words, homesheets and a test. Thus, the grade 2 teacher also provided a rich and supportive Language

Arts program with daily opportunities to read and write in which both the target and comparison groups participated.

Measures

In the first week of grade 1 all children in both groups were pretested using Clay's Observation Survey (Clay, 1993). The tasks in the Observation Survey are thus the dependent variables.

The Observation Survey (Clay, 1993) was given as a pretest in September, 1994 of grade 1, before the Reading Recovery training began and as posttests in June, l996 of grade 2. As suggested, the Observation Survey (Clay, 1993) allows the teacher to observe:

- oral language and a child's control over sentence structures and inflection
- the reading of continuous text (running records)
- letter knowledge
- reading vocabulary (words known in reading)
- writing vocabulary (words known in writing)
- concepts about print (how print encodes information)
- hearing sounds in words (dictation)
- making links between those sounds and letters

The purpose of the survey is to measure achievement or progress and to observe behaviors in order to inform instruction. (See Appendix A for a descriptions and examples of the six subtests.)

The Observation Survey is administered in about 30-45 minutes and has standardized administration procedures for each subtest. It can be used over a two or three year period. Reliability measures are provided for each subtest and reliability coefficients are high. Clay (1993) reported full-scale test-retest reliability coefficients ranging from 0.73 to 0.89 on a New Zealand sample of grade one children. This research reported corrected split-half coefficients ranging from 0.84 to 0.88.

According to Clay (1993), the observations obtained from the Observation Survey provide the teacher with information on the strategies the child is using in reading and writing, what the child finds easy and what the child is neglecting. Clay cautions that none of the subtests should be used alone. Subtests should be used together and in conjunction with other relevant information with the intent of informing instruction. Much of the information derived from the tasks is qualitative in nature and involves guidelines for reporting qualitative data on the child. However, stanines are provided for all but the text reading tasks if more objective information is needed.

Instrument: The Observation Summary

The Observation Summary (see Appendix B) brings together what the teacher has observed in the Observation Survey. What the child can do, what the child partially knows and what is needed are summarized on the Observation Summary sheet which provides spaces to record the results of each test. Scores are entered, but summary statements

explaining what the child knows are included. Observational notes made during the testing are also recorded.

The back of the Observation Summary sheet contains a framework to facilitate the analysis of the child's problem solving strategies. Analysis is made in six areas:

* useful strategies on text
* problem strategies on text
* useful strategies on words
* problem strategies on words
* useful strategies on letters
* problem strategies on letters

To ensure consistency in interpreting observations, there are also guidelines regarding which tasks to examine for each area and how they interrelate. A summary is written describing the child's current way of responding. This includes what the child can and cannot do on text reading and writing and how the child's word and letter level strategies help or hinder reading and writing. This summary statement requires the teacher to synthesize all the information and observations made on the child's reading. The summary provides the teacher with information about the child's specific needs in terms of a reading and writing program. The Reading Recovery Selection Sheet (see Appendix B) provides another form to record the test results of all children administered the Observation Survey.

Training Program

Reading Recovery begins with two weeks of Roaming Around the Known (Clay, 1993) in which no new learning is introduced. This is an opportunity for the child to experience fluency and develop flexibility with what they already know about reading and writing and for the teacher to observe and record other behaviors as they develop. Roaming precludes the imposition of a pre-sequenced set of instructional procedures on the child and establishes the basis for the teacher to go where the child is and work forward from the child's individual responses.

The child's responses guide the teacher's choice of several books which the child can read at about 90 percent accuracy or better as measured by Running Records. The teacher uses the Roaming period to discover how the child interacts within the teaching relationship. The teacher records what the child does well, what strategies s/he uses and anything more s/he observes that demonstrates knowledge of letters, words and other features of print.

In addition to recording what the child is able to do, the teacher must capture the child's interest, advance the child's confidence and enlist the child as a collaborator in learning to read and write. At the end of Roaming in the Known, the child should be fluent, flexible, confident and eager to proceed with new learning.

New learning emerges through the scaffolded instruction of each Reading Recovery lesson. The goal is for the child to develop a self-extending system of effective strategies for reading and writing. The child learns ways to detect and correct errors independently. The Reading Recovery teacher helps the child understand how s/he has worked out a word or text so that the child develops metacognitive awareness of strategic processing on text and in writing.

After massive reading practice at one level, the text difficulty is gradually increased. The sequence is repeated: scaffolded instruction in using effective reading and writing strategies, massive practice and the gradual introduction of more difficult text.

Data Collection

Data was collected from Clay's (1993) standardized Observation Survey, daily running records, telephone interviews with parents and classroom teachers and conversations with students. Investigator triangulation was not achieved in this study. In this research the author is considered an *active participant* (Wolcott, 1988).

## Chapter 4

## Data Analysis and Results

I implemented a Reading Recovery program in an English/French Immersion school situated in a lower middle-class/working-class urban area. I administered Clay's Observation Survey in September, 1994 to 8 grade 1 children who were identified by the school team as being at-risk in literacy development. The grade 1 teacher, the Reading Recovery teacher and the Reading Recovery teacher leader selected 4 children for Reading Recovery (three boys and 1 girl). The 3 boys were discontinued from the program and the remaining child received service until June, 1995. The other 4 children (3 boys and 1 girl) received no Reading Recovery training. In June of the following year, I administered the Observation Survey to the 8 children in the study. Six of the 8 children were reading at levels beyond the grade 1 level tested by the Observation Survey. Passages from the Alberta Diagnostic Reading Program (1990) were used to ascertain the reading levels of these 6 children. Of particular interest is whether continued progress into grade two is maintained and how the Reading Recovery students compare to at-risk children who did not participate in the program. A comparison of the Observation Survey results and a discussion follows.

The results of the Observation Survey indicated that the two groups achieved similar success in the areas of Letter Identification, Word Test, Concepts About Print and Dictation. The greatest differences emerged in Text Reading Levels and Writing Vocabulary. The Reading Recovery group achieved text reading levels ranging from Level 10 (a beginning-

grade 1) to Grade 4 and the non-Reading Recovery group achieved text reading levels ranging from Level 2 (pre-primer) to grade 3. The Writing Vocabulary scores for the Reading Recovery group ranged from 46 to 65 and the other group scored between 27 and 64. Following is a case by case synopsis and a complete summary of the Observation Survey data. The names used are fictitious.

## Single Case Analysis

## Reading Recovery Cases

### Case I

Case I, Cam, born July 5, 1988, is the younger of two boys in a two-parent family. One parent works in the television industry and the other parent is in personnel. The first language in the home is English.

Cam told me that he likes swimming, stories and Nintendo. He does not like coming to school because he would rather stay home and play. At school he likes gym, computer, music and recess. Cam's father coaches the hockey and soccer teams on which his son is a player.

Cam was friendly, cooperative and responsive in the Reading Recovery instructional setting. He demonstrated well-developed expressive language and communicated effectively. Cam engaged willingly in challenging tasks and often displayed a great deal of self-

confidence. He would comment: "This will be easy for me". He followed directions well and asked for clarification when it was needed.

Cam was discontinued from the Reading Recovery program in January, 1995 after 12 weeks and 51 lessons. The recommended number of weeks for the intervention is 12 to 15. Cam's independent Text Reading Level was 12 (approximately a beginning/mid-grade 1 level) and the accuracy rate was 98%, the self-correction rate was 1:1. This was comparable to that of his not at-risk classroom peers in January. Following are the results of the Observation Survey from September, 1994 and January, 1995 of grade I and June, 1996, of grade 2.

Observation Survey Results

| | September, 1994 | January, 1995 | June, 1996 |
|---|---|---|---|
| Letter Identification | 15/54 | 53/54 | 53/54 |
| Word Test | 0/20 | 15/20 | 19/20 |
| Concepts about Print | 9/24 | 19/24 | 17/24 |
| Writing Vocabulary | 2 | 38 | 51 |
| Dictation | 0/37 | 35/37 | 36/37 |
| Text Reading | Level 1 | Level 12 | Grade 4 |

Cam had developed a self-extending system of reading and writing strategies by January, 1995. He demonstrated the use of sight vocabulary, letter-sound associations, short and long vowels and word endings in reading and writing. He used monitoring, self-correction and cross-checking in reading (predominantly using visual cues to cross-check against other cues). These gains were maintained and surpassed as

evidenced by Cam's grade 4 score on the Alberta Diagnostic Reading Program (1990) in June of the following year.

Case 2

Case 2, Harry, born September 23, 1988, is the youngest of three boys in a two-parent family. English is the language spoken at home.

Harry's parents own and operate a small business. In the fall of 1994, his mother told me that she and her husband had purchased a new building and moved their business. There was considerable stress involved with the move. The family enjoys going to watch hockey games in which the oldest child is a player. The father plays hockey with the boys three or four nights a week. They have a pool in their backyard and enjoy water play in the warm weather.

Harry told me that he likes hockey, baseball and reading. He is interested in "bunnies". He has two best friends and likes to play tag with them. He likes to go to school. His favorite activities are: maths., gym, computer, music and French.

Harry is a friendly, gregarious child. He was responsive in the Reading Recovery instructional setting. He demonstrated well-developed expressive language and effectively communicated his message. He showed a lack of confidence in his abilities to read new text. Often he would say: "I can't do this, it's too hard for me.". He followed directions well and asked for clarification when needed.

Harry was selected for Reading Recovery in September of 1994. He was discontinued from the program in April, 1995, after 25 weeks and 113 lessons, compared to Cam, who discontinued after 12 weeks and 51 lessons. Harry was discontinued at independent Text Reading Level 14, with a 94% accuracy rate and a self-correction rate of 1:3. This was commensurate with the reading level of his classroom peers not involved in Reading Recovery in March. Following are Harry's results on the Observation Survey at entry and exit from Reading Recovery and at the end of grade 2.

Observation Survey Results

| | September, 1994 | April, 1995 | June, 1996 |
|---|---|---|---|
| Letter Identification | 15/54 | 53/54 | 54/54 |
| Word Test | 0/20 | 16/20 | 20/20 |
| Concepts About Print | 13/24 | 20/24 | 19/24 |
| Writing Vocabulary | 3 | 36 | 65 |
| Dictation | 0/37 | 36/37 | 35/37 |
| Text Reading | Level 1 | Level 14 | Grade 2 |

An analysis of Harry's Running Records from January to March showed that his text reading errors were generally driven by meaning and structure and cross-checked against visual cues. During reading he often used analogy to decode a new word. For example, he would say: "I know 'night' so this is 'light'." Observations from his Running Records showed a need to re-read for meaning and ask himself: Does it make sense? Can we say it that way? Using these questions enhances the development of

independent reading, indicating that Harry was monitoring for meaning and beginning to develop a self-extending system of reading and writing strategies. He maintained these gains throughout grade 2. In June, 1996, Harry scored at the grade 2 reading level on the Alberta Diagnostic Reading Program (1990).

Case 3

Case 3, Fran, born July 28, 1988, is the younger daughter of two girls in a two parent family. Her father is employed in the automotive industry and her mother stays home. The first language in the home is English. Her parents are first generation Canadians. Fran understands Italian, which is spoken in her grandparents' homes.

Fran's mother told me that as of October, 1994, her husband began working nights, which means that he is sleeping when the girls get up for school and he is leaving for work when they return home. Fran's mother indicated that Fran found this change very upsetting and that Fran missed her father. The family enjoys skating together in the winter, going to the park in the summer and visiting relatives.

Fran told me that she likes skating, swimming, birthday parties and going to the park. She specifically said that she dislikes fighting and I know from our encounters that she also dislikes bugs and worms. She likes coming to school and enjoys gym, music, French, journal and ABC books. She dislikes working hard because it makes her tired.

Fran is a gregarious and friendly child. She was responsive and took initiatives in the Reading Recovery instructional setting. She used expressive language effectively to communicate her message, although she had difficulties with verbs (sometimes omitting them) and verb tenses (slide for slid). Fran engaged willingly in challenging tasks which elicited appeals for help. She had difficulty understanding and following directions. She frequently needed clarification and support to successfully follow directions.

Fran began Reading Recovery in September, l994. At the end of May, 1995, she had received 32 weeks and 149 lessons and had achieved a Text Reading Level of 14 with an accuracy rate of 93% and a self-correction rate of 1:9, compared to Cam and Harry, who discontinued after 12 weeks/51 lessons and 25 weeks/113 lessons respectively. It should be noted that Harry discontinued in early April with an accuracy rate of 94% at Level 14 and a SC rate of 1:3. As of September, 1996, the Reading Recovery Institute requires a minimum discontinuing text reading level of 15. Although Fran's reading level was 14, with an accuracy rate of 93%, her self-correction rate was far too high at 1:9 and it was the end of May. This text reading level was not sufficiently high for Fran to be discontinued from Reading Recovery in grade I. It should be noted that 40/149 lessons, 27%, were missed due to student or teacher absences, school closures and professional development.

Observation Survey Results

| | September, 1994 | June, 1996 |
|---|---|---|
| Letter Identification | 10/54 | 53/54 |
| Word Test | 0/20 | 20/20 |
| Concepts About Print | 4/24 | 18/24 |
| Writing Vocabulary | 2 | 46 |
| Dictation | 0/37 | 33/37 |
| Text Reading | Level 2 | Level 10 |

According to Fran's Running Records, she was reading at a Level 9 in mid-March, 1995, and was beginning to ask herself: Does it make sense? Can we say it that way? The use of these questions helped Fran search for information using all cueing systems (meaning, structure and visual). In March, 1995 she was producing complex sentences during independent writing. She composed sentences such as: " Today my mom is picking me up from school " (the underlined letters indicate the sounds she heard and wrote independently). She used letter boxes and analogies to help herself. When a vowel was needed she wrote a, e, o on her practice page and tried to find the one that sounded and looked right.

In June, 1996, at the end of grade 2, Fran's reading level had diminished to Level 10, a middle grade 1 level. In spite of her high scores in all other measures, she did not develop a self-extending system of independent reading and writing strategies. She requires additional intervention to succeed in school.

Case 4

Case 4, Jack, born September 13, 1988, is the only child of a two parent family. The father works in an office and the mother stays home. The language in the home is English.

Jack told me that he likes riding his bike, Nintendo and playing with his dog. At school he likes gym, computer and recess. Jack's mother takes him to swimming lessons in the winter and soccer in the summer.

Jack was talkative, friendly and cooperative in the Reading Recovery instructional setting. His expressive language was well-developed and he communicated his message effectively. Jack engaged in challenging tasks with sighs, deep breathes, stutters and exclaiming: "This is hard! Wait a minute... I can do it!". He had difficulty understanding directions and often needed extensive clarification and support.

Jack was discontinued from Reading Recovery in May, 1995 after 32 weeks and 149 lessons. He discontinued at Text Reading Level 16 with an accuracy rate of 92% and a self-correction rate of 1:5. This compares to Cam, also discontinued, after 12 weeks, 51 lessons, at reading level 12, with an accuracy rate of 98% and a self-correction rate of 1:1; and Harry, discontinued after 25 weeks, 113 lessons, at reading level 14 with an accuracy rate of 94% and a self-correction rate of 1:3; and Fran, not discontinued, after 32 weeks, 149 lessons, with a text reading level of 14 and an accuracy rate of 93% and a self-correction rate of 1:9.

At discontinuing, Jack was monitoring his reading by rereading, checking and searching for cues (Syntax: Can we say it that way? Semantics: Does it make sense? Visual: Does it look right?). Jack demonstrated a well-developed core of high frequency words which support his fluency in reading and writing. Following is a summary of the Observation Survey results from grades 1 and 2 that show he was keeping pace with peers not included in the intervention at the end of grade2.

Observation Survey Results

| | September, 1994 | May, 1995 | June, 1996 |
|---|---|---|---|
| Letter Identification | 18/54 | 51/54 | 53/54 |
| Word Test | 0/20 | 17/20 | 19/20 |
| Concepts About Print | 3/24 | 16/24 | 19/24 |
| Writing Vocabulary | 1 | 49 | 56 |
| Dictation | 0/37 | 34/37 | 37/37 |
| Text Reading | Level A | Level 16 | Grade 2 |

Jack maintained the gains he had made at the end of Reading Recovery in grade1. He achieved high scores on all measures. By the end of grade 2 Jack had continued to develop a self-extending system of independent reading and writing strategies. In June, 1996, Jack scored at the grade 2 text reading level on the Alberta Diagnostic Reading Program (1990).

## Summary of Time Spent in Reading Recovery

The following chart documents the discontinuing rate for each of the 4 students who participated in Reading Recovery.

| Case Number | Time | Dates | Outcome | Text Level |
|---|---|---|---|---|
| Case 1 | 12 weeks | Sept. - Jan. | Discontinued | 12 |
| Case 2 | 25 weeks | Sept. - April | Discontinued | 14 |
| Case 3 | 32 weeks | Sept. - May | Not Discont. | 14 |
| Case 4 | 32 weeks | Sept. - May | Discontinued | 16 |

## Non-Reading Recovery Cases

The four students in the non-Reading Recovery group scored low enough to qualify for Reading Recovery but could not be accommodated in the program because of time and budget constraints. Pseudonyms are used in place of the students' actual names.

### Case 5

Case 5, Don, born December 15, I988, is the youngest of three boys in a three parent family. His father is self-employed in sales and his mother stays at home. The language spoken in the home is English.

Don was on life-support for the first nine days of his life. His mother described him as delayed in reaching the childhood milestones, such as walking and talking. Family activities include car rides to various small towns in the province, walks at the zoo and on hiking trails, swimming and tobogganing. At home the family enjoys playing boardgames and reading.

Don's favorite activity at school is "pluses and take-aways". At home he likes to play Lego and computer. He enjoys playing frozen tag with his friends. His favorite boardgames are Operation and Snakes and Ladders.

Observation Survey Results

| | September, 1994 | June, 1996 |
|---|---|---|
| Letter Identification | 7/54 | 47/54 |
| Word Test | 0/20 | 7/20 |
| Concepts About Print | 9/24 | 14/24 |
| Writing Vocabulary | 1 | 34 |
| Dictation | 0/37 | 27/37 |
| Text Reading | Level A | Level 2 |

Don made considerable progress in Letter Identification, Writing Vocabulary and Dictation between the two test times and moderate progress in Concepts About Print. However in Word Test and Text Reading Level his progress was minimal. At the end of grade 2, he was reading at the pre-primer level and had not developed a broad base of sight word vocabulary. Don will require intensive intervention to help him become an independent reader and writer.

Case 6

Case 6, John, born November 4, 1988, is the only child of a two parent family. The language spoken in the home is English. His mother works in telemarketing and his step-father works in the military.

John's mother said that although John was late talking, he spoke in complete sentences when he began talking. The family enjoys reading, biking and going to the park together.

John's favorite activities at school are gym, science and mathematics. His least favorite activity is writing. Outside of school John likes biking, collecting rocks and competitive swimming.

Observation Survey Results

| | September, 1994 | June, 1996 |
|---|---|---|
| Letter Identification | 28/54 | 53/54 |
| Word Test | 0/20 | 17/20 |
| Concepts About Print | 6/24 | 18/24 |
| Writing Vocabulary | 2 | 27 |
| Dictation | 0/37 | 37/37 |
| Text Reading Level | Level A | Grade 3 |

John made notable progress in all areas, except in Writing Vocabulary, which, according to the New Zealand norms, should be over 50 by the end of grade 2. However, Writing Vocabulary notwithstanding,

John was reading at the grade 3 level, measured by the Alberta Diagnostic Reading Program (1990). He has developed an effective self-extending system of reading and writing strategies.

Case 7

Case 7, Sue, born July 12, 1988, is the older of two girls in a single parent family. She lives with her mother, who is employed by the military. The language in the home is English.

Sue's mother indicated that she was concerned about Sue's shyness. She thought that enrolling Sue in Brownies and gymnastics might help her daughter be less shy. Family activities include swimming, biking and boardgames.

Sue's favorite activities at school are crafts and field trips. Sue dislikes writing because some words are too hard for her to spell. She also dislikes Spelling tests. She likes to play wall ball, tag and hide-and-go-seek with her friends.

Observation Survey Results

| | September, 1994 | June, 1996 |
|---|---|---|
| Letter Identification | 21/54 | 52/54 |
| Word Test | 0/20 | 20/20 |
| Concepts About Print | 3/24 | 17/24 |
| Writing Vocabulary | 2 | 64 |
| Dictation | 0/37 | 37/37 |
| Text Reading Level | Level A | Grade 1 |

Sue has made great progress in all areas except Text Reading Levels. In fact, text reading results were puzzling because she seemed to have all the necessary supporting skills in place for reading. Yet, at the end of grade 2, her independent reading level was grade 1 according to the Alberta Diagnostic Reading Program (1990).

Case 8

Case 8, Tim, born October 20, 1988, is the older of two children in a two parent family. His father works nights in the food industry and his mother works in customer service. The language in the home is English.

Tim's mother shared with me that Tim was two weeks pre-mature and was born with the umbilical cord around his neck and was very blue in color. Tim was late talking and began to form 2-3 word sentences when he was three years old. Tim had frequent ear infections and colds from one to three years of age.

Tim's mother said that her husband works the night shift and is usually sleeping when Tim goes to school in the morning and at work when Tim comes home. Tim's mother picks up the two children from the babysitter's at 6:00 and makes dinner. The children are in bed by 8:00 o'clock. This leaves little time for pleasure activities with the children.

Tim told me that he likes to play outside, ride his bike and go on picnics with his family. At school his favorite activity is playing and his least favorite thing is doing work. Tim said that he has no books at home and does not read at home, except for the books which go home through the school.

Tim was talkative and friendly during the administration of the Observation Survey. His expressive language was inhibited by his articulation problem and he sometimes spoke in phrases rather than complete sentences. He sometimes needed directions repeated before proceeding with the task.

Observation Survey Results

| | September, 1994 | June, 1996 |
|---|---|---|
| Letter Identification | 28/54 | 53/54 |
| Word Test | 0/20 | 20/20 |
| Concepts About Print | 4/24 | 20/24 |
| Writing Vocabulary | 1 | 42 |
| Dictation | 0/37 | 36/37 |
| Text Reading | Level 2 | Grade 2 |

Tim made sizable gains on all measures and on the Alberta Diagnostic Reading Program (1990), in June, 1996, he scored at reading level grade 2. He has developed an independent system of reading and writing strategies.

## Observation Survey Data Summary

The two test results (grade I entry and end of grade 2 retest) of each subtest of the Observation Survey for each group are displayed in the following tables, beginning with reading level results, letter identification, word test, concepts about print, writing vocabulary and dictation.

### Reading Levels

Reading Recovery levels reported as:

| | |
|---|---|
| A, 1 - 4 | = preprimer |
| 5 - 8 | = primer |
| 9 - 12 | = beginning grade 1 |
| 13 - 15 | = mid-grade 1 |
| 16 - 20 | = end grade 1 |

Reading levels reported as grade levels (eg. gr.2) refer to the Alberta Diagnostic Reading Program (1990).

Text Reading Level

| Reading Recovery | Beginning Grade I | End Grade 2 |
|---|---|---|
| Case 1 | Level 1 | Grade 4 |
| Case 2 | Level 1 | Grade 2 |
| Case 3 | Level 2 | Level 10 |
| Case 4 | Level A | Grade 2 |
| **Non-Reading Recovery** | | |
| Case 5 | Level A | Level 2 |
| Case 6 | Level A | Grade 3 |
| Case 7 | Level A | Grade 1 |
| Case 8 | Level 2 | Grade 2 |

All children in both groups entered the study at the pre-primer reading level. It is interesting to note that the Reading Recovery child with the highest reading level (Level 2) at the beginning of the study, emerged from grade two with the lowest reading score (Level l0: mid-grade 1). In addition to Reading Recovery, this child received resource support in a small group in grade 1 while she was in grade 1 and in grade 2.

At the end of grade 2 the Text Reading data indicate that:

* one each of the Reading Recovery group scored at grade 4, grade 3, grade 2 and Level 10 (mid-grade 1)

* two of the non-Reading Recovery group scored at grade 2, one at grade 1 and one at Level 2 (pre-primer)

* the range of scores in the Reading Recovery group was from Level 10 (middle to end grade 1) to grade 4

* the range of scores in the non-Reading Recovery group was from Level 2 (pre-primer) to grade 2

* three out of four Reading Recovery children were reading at grade 2 or better

* two out of four non-Reading Recovery children were reading at the grade 2 level

* there was a range of two grade levels between the highest scoring Reading Recovery child and the highest scoring non-Reading Recovery child.

* there was a difference of 8 Reading Recovery levels between the lowest scoring Reading Recovery child and the lowest scoring non-Reading Recovery child.

The results of the Text Reading Levels are reflective of the point made by Shanahan and Barr (1995) that with no special intervention, 50% of the lowest achieving grade I students, who receive no intervention, will no longer be in the lowest achieving group at the end of grade 1.

## Miscue Analysis

### Reading Recovery Students

Following is an analysis of the miscues made by the Reading Recovery group in the final assessment in June, 1996.

Cam. Cam tested at the grade 4 reading level. He made 3 errors. One error was an omission, he neglected visual cues. However, meaning and syntax were maintained. The other 2 errors were driven by visual cues, neglecting to use meaning and syntax. Substitutions did not make sense in the passage: "such" for "much" and "tight" for "tipped".

Harry. Harry tested at the grade 3 reading level. Of the 4 errors he made, 2 were driven by visual cues, neglecting meaning and syntax. These errors did not make sense: "dreamy" for "dreary" and "complaint" for "company". He used all cues in the other 2 errors and they made sense in the story: "then" for "when" and "explained" for "exclaimed".

Fran. Fran tested at Level 10, which is a mid-grade 1 level. She made 6 errors and no self-corrections. Two errors were driven by visual cues and made no sense: "torrible" for "terrible" and "noisy" for "noise". Three errors were driven by meaning and syntax; they made sense in the

story ("jokes" for "stories"; "spider" for "mosquito"; "a" for "some". One error was driven by all 3 cuing systems ("book" for "books").

Jack. Jack tested at a grade 2 level. He made 3 errors. Two errors made sense in the story. One was driven by meaning and syntax ("under" for "against") and the other was driven by meaning, syntax and visual cues ("coming" for "camping"). The 1 error driven by only visual cues was "f--l" for " felt". He did not say a complete word and his utterance made no sense.

Non-Reading Recovery Students

Don. Don tested at the pre-primer level. His 1 error was "red" for "yellow" which indicates that he used no visual cues and although the error made sense syntactically, it conflicted with the picture, which showed a yellow hat. This indicates that Don knows that print carries meaning but he is unable to effectively integrate all 3 cuing systems.

John. John tested at the grade 3 level. He made 4 errors. Three of the errors made sense in the passage and were driven by meaning, syntax and visual cues: "dirty" for "dreary", "place" for "places" and "explained" for "exclaimed". The other error was driven by visual cues only and made no sense: "suces" (pronouncing the e as a long e) for "success".

Sue. Sue tested at the grade I level. She made two errors. One was an omission, she used no visual cues. However, she used meaning and

syntax to maintain meaning. The other error was driven by meaning and syntax and made sense in the story: "said" for "asked".

Tim. Tim tested at the grade 2 level. He made 1 error, which was driven by meaning and syntax. It made sense in the selection: "the" for "fresh".

## Letter Identification (LID)

The following chart summarizes performance on the letter identification task at the beginning of grade 1 and end of grade 2.

| Reading Recovery Group | Beginning Grade 1 | End Grade 2 |
|---|---|---|
| Case 1 | 15/54 | 53/54 |
| Case 2 | 15/54 | 54/54 |
| Case 3 | 10/54 | 53/54 |
| Case 4 | 18/54 | 53/54 |
| Non-Reading Recovery Group | | |
| Case 5 | 7/54 | 47/54 |
| Case 6 | 28/54 | 53/54 |
| Case 7 | 21/54 | 52/54 |
| Case 8 | 28/54 | 53/54 |

The Reading Recovery group entered grade 1 with lower scores in LID than the non-Reading Recovery group. By the end of grade 2, with the exception of one child (Case 5) in the non-Reading Recovery group, all children in both groups demonstrated almost perfect scores in LID.

## Word Test

As indicated in the following chart, based on knowledge of 20 sight words, all children in both groups began grade 1 with a score of 0 on the Word Test. The data show very little difference between the two groups by the end of grade 2, except for Case 5, who scored 7/20:

* the range of scores in the Reading Recovery group was 17 - 19.
* the range in the non-Reading Recovery group was 7- 20.

| Reading Recovery Group | Beginning Grade 1 | End of Grade 2 |
|---|---|---|
| Case I | 0 | 19 |
| Case 2 | 0 | 20 |
| Case 3 | 0 | 20 |
| Case 4 | 0 | 19 |
| Non-Reading Recovery Group | | |
| Case 5 | 0 | 7 |
| Case 6 | 0 | 17 |
| Case 7 | 0 | 20 |
| Case 8 | 0 | 20 |

## Concepts About Print (CAP)

As depicted in the chart, the entry scores for the two groups were identical except for one child in Reading Recovery who scored 13/24 and one child in the non-Reading Recovery who scored 6/24. The data showed that at the end of grade two:

* the range of scores in the Reading Recovery group was 17/24 - 19/24.

* the range in the non-Reading Recovery group was 14/24 - 20/24.

Again Case 5 showed relatively low gains, from 9/24 to 14/24.

| Reading Recovery Group | Beginning Grade 1 | End of Grade 2 |
|---|---|---|
| Case 1 | 9/24 | 17/24 |
| Case 2 | 13/24 | 19/24 |
| Case 3 | 4/24 | 18/14 |
| Case 4 | 3/24 | 19/24 |
| Non-Reading Recovery Group | | |
| Case 5 | 9/24 | 14/24 |
| Case 6 | 6/24 | 18/24 |
| Case 7 | 3/24 | 17/24 |
| Case 8 | 4/24 | 20/24 |

## Writing Vocabulary
(the number of words written in 10 minutes)

Children in both groups entered grade 1 with 1-3 words. By the end of grade 2 writing vocabulary should be 45 or greater. The data showed the following range of scores: Reading Recovery group: 46-65 and non Reading Recovery group: 27-64 (3/4 scores were below 45).

| Reading Recovery Group | Beginning Grade I | End of Grade 2 |
|---|---|---|
| Case 1 | 2 | 51 |
| Case 2 | 3 | 65 |
| Case 3 | 2 | 46 |
| Case 4 | 1 | 56 |
| Non-Reading Recovery Group | | |
| Case 5 | 1 | 34 |
| Case 6 | 2 | 27 |
| Case 7 | 2 | 64 |
| Case 8 | 1 | 42 |

Children in both the Reading Recovery group and the non Reading Recovery experienced many opportunities to write in grade 1 and grade 2. In the grade 1 classroom journal writing was done 3 to 5 times weekly. The teacher preceded this activity with brainstorming, activating prior experiences and modelling. The grade 2 classroom teacher began writing process with brainstorming for ideas with a partner and sharing this with the class. The actual writing was done independently and read to a partner. The partners checked the writing for spelling, punctuation and meaning. The teacher edited individually with children.

## Dictation

As shown below, both groups scored well on dictation with the exception of Case 5. The range for Reading Recovery was 33-37 and 27-37 for the other group.

| Reading Recovery Group | Beginning Grade 1 | End of Grade 2 |
|---|---|---|
| Case 1 | 0/37 | 36/37 |
| Case 2 | 0/37 | 35/37 |
| Case 3 | 0/37 | 33/37 |
| Case 4 | 0/37 | 37/37 |
| Non-Reading Recovery Group | | |
| Case 5 | 0/37 | 27/37 |
| Case 6 | 0/37 | 37/37 |
| Case 7 | 0/37 | 37/37 |
| Case 8 | 0/37 | 36/37 |

## Summary of Findings

Clay (1993) considers text reading level to be the most important indicator of progress because text reading measures assess the child's effectiveness in using cues flexibly on text. Center et al (1995) make the same point in their evaluation of Reading Recovery.

The Reading Recovery group scored slightly better than the comparison group in the text reading level. The Reading Recovery scores were: grade 4, grade 2, grade 2 and level 10 (mid-grade 1) and the comparison group scores were: grade 3, grade 2, grade 1 and level 2 (pre-

primer). This is at face value. Given the error of the instrument and random variation, this difference may be more apparent than real.

The Reading Recovery group showed superior scores in Writing Vocabulary (the number words written from memory in 10 minutes). A Writing Vocabulary score of over 45 is expected by the end of grade 2. All Reading Recovery students scored over 45 on Writing Vocabulary, compared to only 1 non-Reading Recovery students whose scores exceeded 45. The Reading Recovery group scores for Writing Vocabulary are as follows: 46, 51, 56 and 65 and the comparison group's scores are: 27, 34, 42 and 64.

With the exception of Don, Case 5, the final scores in Letter Identification, Word Test, Concepts About Print and Dictation were within the same range for both groups.

## Chapter 5

## Discussion

The results of this investigation must be interpreted cautiously. Reading is a complex process which is influenced by many factors in a child's life, such as, cognition, emotion/attitude, sociology and culture. Similarly, the children's progress is also a reflection of many factors, including: the efficacy of instructional decisions made by the Reading Recovery teacher, the effectiveness of the classroom literacy program and the literacy events within the child's home.

The analysis of the data attempted to determine whether at-risk learners who received the early intervention, Reading Recovery, would maker superior progress in learning to read when compared with the progress of at-risk learners who did not receive Reading Recovery. Progress was measured by Clay's (1993) Observation Survey. The data showed a marginal difference between the two groups, with the Reading Recovery group showing a very slight advantage in Text Reading and Writing Vocabulary, which may be attributed to random variation and error of measurement. Given the marginal difference in progress between the two groups, what does this imply about the effectiveness of Reading Recovery as an early intervention in learning to read?

It may be helpful to revisit Pikulski's (1994) recommendations for increasing the probability of success in early intervention programs. His first recommendation is the importance of coordinating excellent instruction in both the classroom literacy program and the early

intervention program. There is no structure in Reading Recovery to coordinate classroom and intervention instruction. The issue of excellent instruction is a tricky one. The Reading Recovery teacher in this study was in her training year. She was in the process of learning how to make the most effective teaching decisions, responsive to each individual's need, while on-the-run and she had the benefit of critical, peer feedback during this training year. The classroom teachers in this study, however, were not in any program which allowed their teaching to be evaluated and responded to by professional peers. One can imagine the possibilities if a program of peer evaluation and feedback was available to classroom teachers to help them identify strengths and weaknesses in their teaching. Such a program could be the basis for a network to promote and support teacher development and change as it relates to effective teaching of literacy and early intervention programs.

Pikulski (1994) recommends the following:

1. At-risk learners should receive more reading instruction than learners who are not at-risk.

He underscores the need for quality instruction. It was an unfortunate timetable conflict that made it necessary for Reading Recovery to be scheduled during the regular classsroom reading instruction in grade I. The result was that the four Reading Recovery students actually received less, not more, classroom reading instruction.

2. For success in reading, the at-risk learner should receive instruction in a very small group of 4 or 5 or in a one-to-one situation.

The classroom teacher provided some small group instruction for all of the children in the study. The Reading Recovery children were seen individually. This criteria was fulfilled.

3. Early intervention in grade 1 is preferable to and more successful than later intervention.

The goal should be the prevention of reading difficulties. This is certainly a goal of Reading Recovery.

4. Using easy, predictable, natural-language texts ensures student success.

The classroom teachers provided a rich and varied collection of texts at a variety of reading levels. Similarly, the texts in Reading Recovery range from very easy to difficult and are rich in language, predictability and pictures.

5. Children should be taught that reading is a meaning-making activity.

He recommends repeated readings to help at-risk students develop fluency. The classroom teacher and the Reading Recovery met these criteria within their programs.

6. At-risk learners should have instruction in phonemic awareness and phonics.

The classroom teacher provided formal phonics instruction to the whole class following the journal writing activity. Whole class phonics lessons have been found to be ineffective, however, for the majority of children (Gough & Juel, 1990; Juel, 1994 in Juel, 1996). Of more benefit is a phonics lesson delivered to a small group of 4 or 5 children who need it. The Reading Recovery children received phonics instruction daily, based on their needs at the time.

7. Daily writing is an important component of a successful early intervention program.

In the grade 1 classroom, journal writing was carried out three to five times a week. It was preceded by a printing lesson on letter formation, brainstorming, activating prior experiences, modelling and some copying (but only in the beginning weeks of school). Within the Reading Recovery lesson, children wrote one or two sentences daily. They wrote with maximum independence, receiving support and instruction only when absolutely stuck. The sentences were cut up and reconstructed by the children. This focused the child on syntax, meaning and graphohonemic cues. It also provided the child with opportunities for fluent writing of frequently-occurring words.

8. Fundamental to successful early intervention programs is ongoing assessment to monitor student progress.

Instructional decisions in Reading Recovery are based on daily running records and daily observations recorded by the Reading Recovery teacher. It is essential that the Reading Recovery teacher interact with the child within his/her "zone of proximal development" and keep the child on the cutting edge of learning. During the training year, it may be that the Reading Recovery teacher was not always having the student operate at this instructional level.

9. Home reading is an important element of successful early intervention programs.

Within the Reading Recovery program one or more books are sent home for independent reading at home. In addition, the cut-up sentence goes home and the child can reconstruct it and read it again. Also, the parents are invited to observe Reading Recovery lessons. All parents (usually the mother) of the Reading Recovery children observed at least one lesson and received a package of materials which provided information on listening to their child read and other ways of promoting literacy at home. The classroom teacher of the students in this study had a home-reading program and children took one book home daily. However, these books were not necessarily at the child's reading level.

10. The regular teacher should deliver the early intervention program and receive training prior to implementation and also on-going support, at least throughout the first year.

Reading Recovery meets these criteria, except it is not necessarily the regular teacher who delivers the Reading Recovery program. A thirty hour summer workshop is followed by 2 1/2 hour, weekly meetings during

the training year and at least two opportunities to teach "behind-the-glass" and receive critical feedback from peers. In subsequent years, there are almost monthly Continuing Contact sessions and the opportunity for one "behind-the-glass" lesson for each Reading Recovery teacher.

## Implications for Instruction

One implication for literacy program effectiveness it to coordinate classroom instruction and intervention on the basis of the of the evidence that identifies young children as active and purposeful learners of language and literacy (Bissex, 1980; Clay, 1975, 1979a, 1982; Ferriero & Teberosky, 1982; Y. Goodman, I986; Harste, Woodward & Burke, 1984; Sulzby, 1985 in Pinnell, 1989). Exposure to and use of language for a variety of purposes enhances children's development and use of new language forms. Research on language learning and emergent literacy (Teale & Sulzby, 1986) support curriculum that recognizes children as active constructors of knowledge. A whole-language approach provides varied opportunities for children to experience rich demonstrations, interactions, and independently experiment with and use language meaningfully. This is in contrast to curriculum that is skills-based, with a focus on small, isolated units of language (letters, sounds and words).

Clay (1993) clearly identifies a high quality classroom literacy program as critical to the success of Reading Recovery. Reading Recovery cannot succeed when children spend the remainder of their day receiving low quality classroom instruction in sterile literacy programs.

Teale and Sulzby (1989) recommend that literacy activities be integrated across the curriculum. Literacy activities which support reading and writing development include:

1. Reading aloud teaches children reading behaviors and story structure, and contributes to their world view and background knowledge, which is essential to successful reading.

2. Discussion before, during and after reading helps children construct meaning, identify themes and relate the story to their own experiences. The discussion must be interactive and should include a focus on the characters, how they respond and what motivates them. Children should make predictions and inferences.

3. Shared and repeated readings of big books and predictable stories are supportive opportunities to explore the book in depth and to practice what they are learning.

4. Storybook readings contribute to children's independent "readings" of books before they can read conventional print. Sulzby (1985) refers to this as "emergent storybook reading or independent reenactment" and it gives children a forum to practice what they learned from interactive storybook readings.

5. Guided readings offer demonstrations and explanations of useful strategies for independent reading.

6. Independent reading is an occasion to integrate and practice reading strategies on text. It is also a time to read to and listen to a reading partner.

7. Shared writing in which the teacher scribes the children's stories demonstrates writing strategies for children.

8. Interactive writing provides children with the opportunity to see how words work and how to relate sound to symbol.

9. Writers' Workshop is a time for students to experiment and negotiate meaning through the writing process.

10. Literacy within play is one way to ensure developmentally appropriate literacy instruction. Classroom centres should be rich in reading and writing opportunities. Art and dramatic responses to stories are facilitated when materials are easily accessible to the children. The drama centre needs a supply of puppets, flannel board characters, simple props and a dress-up box.

Schickendanz et al (1990) analyzed the qualities of successful home-based literacy events and extrapolated qualities which could apply to school-based literacy events. They suggest that successful school-based literacy events should be functional, meaningful, child-initiated/directed, scaffolded and within the child's zone of proximal development. Teachers interested in providing such a learning environment require in-servicing and on-going support. This learning environment should immerse the

child in reading easy, predictable texts and writing his/her own messages. The focus in reading and writing is meaning-making. However, teachers must skillfully and systematically teach syntactic awareness, phonological awareness and phonological recoding. Such a learning environment would have no need for workbooks, skills in isolation drills or the use of predetermined sequences to teach reading skills. Effective instruction helps children access what they know and develop their knowledge while reading and writing for their own purposes.

In such a program, continuous assessment, based on writing portfolios, teacher observations and anecdotal notes drives instructional decisions. Children who are not progressing could be given a diagnostic survey and referred to Reading Recovery. At weekly meetings the Reading Recovery teacher and the classroom teacher could discuss the at-risk children and coordinate their instructional efforts.

The preceding literacy activities are representative of child-centred, holistic literacy experiences which contribute to an exciting and rich literacy program in the classroom. School systems committed to early intervention programs and prevention of reading difficulties are well advised to assess the quality of literacy programs and instruction in their schools. Effective literacy programs are child-centred, developmentally appropriate, experience based, social and interactive opportunities for children to explore, negotiate and develop their literacy learning (Teale & Sulzby, 1995).

## Implications for Further Research

This research raised more questions than it answered. How does the at-risk learner learn to read? What are the most effective way to teach the at-risk learner? Would it be more effective to begin Reading Recovery in January of grade1 and teach the at-risk grade 2 students from September to December? Would the effectiveness of Reading Recovery be enhanced by a more systematic approach to syntactical awareness, phonological awareness and phonological recoding? If classroom teachers and Reading Recovery teachers met weekly to discuss the strengths and weaknesses of their respective instructional strategies, how would that impact on their professional growth and teacher effectiveness? What would be the impact of a parent program that trained the parents of at-risk learners to provide effective home-based literacy support? Is it more effective to adopt a two-program intervention, a Reading Recovery/Early Literacy model?

Other questions for research which arise from this study are:
What are the implications of Reading Recovery in terms of:

* instruction at the classroom level?
* professional development for classroom teachers?
* the delivery of special education programs in terms of the teacher, the student and the curriculum?
* understanding the development of children's language and literacy behaviors?
* teachers promoting the active involvement of children in reading?
* teachers helping children make the reading/writing connection?

* teachers promoting independence in reading and writing and helping children develop a self-extending system in literacy expertise?

In summary, the most important issues which emerged from this research were:

* Should Kindergarten literacy programs be more oriented to providing literacy-based activities which would scaffold the child's transition from home-based literacy to school-based literacy along the literacy development continuum?

* Should parents be provided with models and training to assist them in providing their children with supportive home-based literacy experiences?

* Should grade I in Canada be considered the first year of formal literacy training and therefore, delay Reading Recovery intervention until January of grade 1 or September of grade 2?

* Should a two-model intervention program (Reading Recovery and small group instruction) be considered?

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