

ANALYSES OF READING RECOVERY® TEACHERS
BASED ON PROFESSIONAL DEVELOPMENT
STAGES AND YEARS OF EXPERIENCE

By

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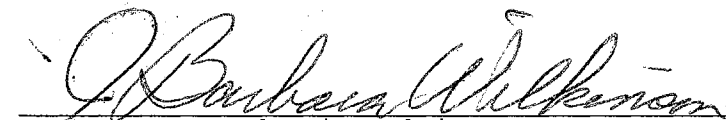
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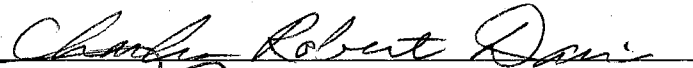
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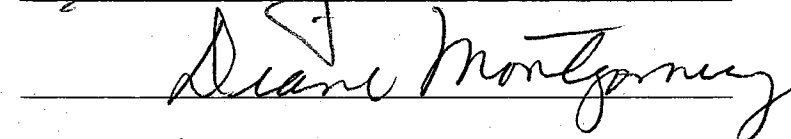
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TABLE OF CONTENTS

Chapter		Page
I.	THE RESEARCH PROBLEM	1
	Introduction.....	1
	Learning Throughout a Teacher's Career.....	2
	Reading Recovery.....	3
	Statement of the Problem.....	5
	Significance of the Study.....	7
	Purpose of the Study.....	10
	Research Questions.....	11
	Statement of the Null Hypotheses.....	12
	Definition of Terms.....	14
	Assumptions.....	15
	Limitations.....	16
II.	REVIEW OF THE LITERATURE.....	17
	Reading Recovery.....	17
	Definition and Descriptions of Effective Teachers.....	20
	Members of a Learning Community.....	21
	Reflective Decision Making.....	22
	Manage and Monitor Student Learning... Knowledge of Subject Matter and Pedagogy.....	26
	Committed to Students and Their Learning.....	28
	Differences Between Expert and Novice Teachers.....	30
	Professional Development.....	34
	Reading Recovery Staff Development Model.....	38
	Constructivist Theory.....	41
	Zone of Proximal Development and Teaching.....	46
	Summary.....	49
III.	METHOD.....	52
	Subjects.....	53
	Instruments.....	55

	Procedure.....	60
	Data Analysis.....	61
	Summary.....	63
IV.	RESULTS.....	65
	Sample.....	66
	Variables of Interest.....	67
	Student Achievement Scores.....	69
	Analysis of Null Hypotheses.....	70
	Summary.....	76
V.	DISCUSSION.....	78
	Introduction.....	78
	Discussion of Findings.....	79
	Conclusions.....	86
	Implications for Educators.....	88
	Recommendations for Future Research.....	90
	REFERENCES.....	92
	APPENDICES.....	107
	Appendix A - Observation Survey and Woodcock Reading Mastery Testing Forms.....	108
	Appendix B - Teacher Questionnaire.....	118
	Appendix C - Parent/Teacher Consent Forms.....	121
	Appendix D - Oklahoma State University Institution Review Board for Human Subjects Research Form.....	126

LIST OF TABLES

Table	Page
1. Description of Subjects.....	54
2. Professional Experience.....	54
3. Educational Experience.....	55
4. Description of Teacher Sample.....	66
5. Means and Standard Deviations of Teacher Effectiveness Indicators.....	68
6. Means and Standard Deviations of Student Achievement Scores and Number of Discontinued Children Aggregated by Teacher.....	69
7. Results of ANOVA Analyses for Null Hypothesis 1- Student Achievement Differences Between Levels of Zone of Proximal Development in Their Teachers.....	71
8. Results of ANOVA Analyses for Null Hypothesis 2-Number of Discontinued Students Between Levels of Zone of Proximal Development in Their Teachers.....	72
9. Results of t-test Analyses for Null Hypotheses 3 and 4- Student Achievement Differences Between Teachers in Training and Trained Teachers.....	73
10. Results of Pearson Product Moment Correlation Analyses for Null Hypotheses 5(a-d)- Correlation of Student Achievement and Number of Discontinued Students with Age and Years of Teaching Experience of Their Teachers..	75
11. Results of t-test Analyses for Null Hypotheses 5(e) and 5(f)- Student Achievement Differences Between BA Trained Teachers and MA Trained Teachers.....	76

CHAPTER I

THE RESEARCH PROBLEM

Introduction

The ability to read is a powerful predictor of students' academic achievement. Students who are unsuccessful at reading in the early grades seldom catch up with their peers (Anderson, Wilson, & Fielding, 1988; Juel, 1988). While the best method of reading instruction has been debated since formal reading instruction began, many experts conclude that the method is not the key variable in reading achievement (Allington, 1983; Bond & Dykstra, 1967). The key variable is the effectiveness of the teacher delivering the instruction (Algozzine & Wood, 1994; Clay, 1991; Cohen, 1971). Research makes clear that student learning is effected by teachers' knowledge, qualifications, and experience (Webster, 1988).

Researchers have emphasized the critical role teachers play in the beginning reading instruction (Adams, 1990; Chall, 1983). The teachers' role becomes even more critical when teaching students who display difficulties in learning to read (Allington & McGill-Franzen, 1989; Clay, 1985). Findings from fifteen years of longitudinal research about how children become literate showed that children's learning

depended on the teachers' instructional action, specifically the opportunities they are provided to negotiate meaning through conversation with the teacher (Wells, 1986). In a comprehensive review of teachers' instructional actions, Duffy and Roehler (1982) concluded that instructional effectiveness does not depend on prescriptions, commercial programs, or teacher education programs that direct teachers to engage in specified actions in order to ensure effective reading instruction. Instead, instructional effectiveness was dependent upon the teachers' ability to flexibly adapt their actions to fit specific contexts (Duffy & Roehler, 1982).

Learning Throughout a Teacher's Career

The ability to adapt to meet the needs of the students is paramount in today's classrooms. Teachers learn how to be flexible through reflecting on their experiences, having conversations with other teachers, and participating in staff development. If teachers are required to be flexible and to become better problem solvers, they need support through staff development and other learning opportunities (Slavin, 1994; Tharp & Gallimore, 1988).

Effective teachers are adult learners who want meaningful learning experiences. A staff development model based on this belief could be described as a constructivist theory model. Constructivism is a theory about learning, not a description of teaching (Fosnot, 1996). In a staff

development model based on this theory, teachers would engage in meaningful problem solving, generate their own hypotheses and test them, challenge the thoughts of others to produce the disequilibrium that facilitates learning, reflect on experiences, and dialogue with other professionals within a learning community (Fosnot, 1996).

Reading Recovery

Reading Recovery® training provides a framework that encapsulates the ideas of constructivism. During training teachers are engaged in meaningful conversations within a learning community. Teachers challenge the thinking of each other which results in formulating a different hypothesis or expanding the given hypothesis. The teachers have an opportunity to reflect on their own teaching decisions and the teaching decisions of others.

The Reading Recovery program resulted from Dr. Marie Clay's research in the 1960s (Clay, 1966). She collected data from observing children's reading and writing behaviors and used this information as a basis for the Development Project of 1976-77 and the Field Trial Research in 1978. Through work with educators, reading advisers, and students, the most effective teaching procedures were developed. These procedures were then recorded so that other teachers could follow them. The extensive research and procedures have been documented in the Reading Recovery Guidebook (Clay, 1993b). Reading Recovery has been implemented in New Zealand,

Australia, Canada, the United Kingdom, and the United States. From 1985 to 1997, a total of 436,249 children were served by Reading Recovery in the United states (Askew, Fountas, Lyons, Pinnell, & Schmitt, 1998). There are now 21 universities that serve as teacher leader training sites in the United States. Reading Recovery sites operate in 48 states and the District of Columbia (Frasier, 1996).

Year-long training is a vital part of Reading Recovery. For the teachers, the training is one of intensive interaction including daily individual teaching and a weekly demonstration and discussion seminar. These seminars allow observation and analysis of the reading process and teacher decision making in response to reading behavior.

Teachers are led by trained teacher leaders to observe and articulate behavior as it occurs in the lesson. They are challenged in the sessions to defend and explain their verbalizations and their teaching decisions. These three aspects: demonstration, articulated observation, and a challenging environment, form the basis of the teacher training (Clay & Watson, 1981).

The training also provides teachers with the opportunity to problem solve various student difficulties. This problem solving may be done with a group of teachers, with a colleague, or alone with the teacher leader. The goal of the training is for teachers to continue to improve their teaching skills and become better problem solvers even without weekly inservice training.

Reading Recovery is an expensive intervention (Dyer & Binkney, 1995). To help defray the costs, teachers need to be able to teach as many children as possible each year. The goal is that the number of children a teacher discontinues from the Reading Recovery program and returns to the regular classroom full-time increases as the teacher gains more experience. However, there has not been any empirical data reported in the literature that shows experience makes a difference in the number of students who are discontinued from the Reading Recovery program (Askew et al., 1997).

Statement of the Problem

In 1986, The Holmes Group proposed reform measures based on its concern for teacher training. Their report began with a strong statement identifying the problem as both chronic and epidemic (Grant, 1990). The call for reform includes decreasing the lecture-based model of telling teachers what to do, moving learning into real contexts, and focusing on the cognitive processes of learning (Brown, Collins, & Duguid, 1989; Lambert, 1989; Pinnell, 1987; Shor, 1987).

Reading Recovery offers a staff development model that addresses some of The Holmes Group concerns, such as relating teacher training to classroom practice and focusing on cognitive learning. During the first year of training, teachers are involved in weekly learning sessions that address these issues. However, after the first year of

training, the amount of staff development decreases. Teachers are required to attend six seminars a year instead of weekly meetings. Also, the amount of individual meetings with teacher leaders decreases. The problem to study is whether or not the waning of staff development has an effect on the teachers' development. There is no empirical data in the area of Reading Recovery that reveals whether teachers have developed enough of a self-extending system at the end of their first year to be able to learn more each year based on their own teaching (Askew et al., 1997). If they have not developed a self-extending system, the difference in staff development contact may affect their Reading Recovery instruction.

Staff development using constructivist learning theory supports the idea of a self-extending system (Fostnot, 1996). Through this learning model, teachers reflect on their past teaching decisions and formulate alternative teaching decisions. Experience provides the avenue for learning. As teachers gain more knowledge through experience and professional development, they pass through different levels of the zone of proximal development (Vygotsky, 1978). The more teachers learn, the less dependent they are on others for instructional support. As teachers become more grounded in their theoretical knowledge and pair that with teaching practice, the more effective they become (National Board, 1999).

Research studies report varying results about teacher experience and the effects of that experience on student achievement. Postlewaite and Ross (1992) supported a relationship between teacher experience and student success. Their study concluded that total teaching experience was one of the five most powerful indicators of student reading achievement. The Handbook of Research on Teaching (Wittrock, 1986) ignored experience as a factor. Brophy and Good (1986) concluded that quality of interaction, management, and enthusiasm have greater importance than teacher experience. From their research, Pinnel, DeFord, Lyons, and Bryk (1995) have concluded that experience alone is not a factor in the students' reading achievement. They agreed with Britzman (1987), who contended that reflection and learning were more critical processes than experience. The experience, to be valuable, must be examined critically.

Therefore, the effects of teacher experience are unclear from the literature. If the training in Reading Recovery is based on the constructivist model of learning, then teachers will continue to learn from their teaching and from meaningful conversations with others in the learning community. Since the teachers are learning from their experience, should not experience be a factor?

Significance of the Study

Research identifies the teacher as the key variable in the students' learning. Teachers' knowledge about their

subject and their knowledge about teaching can affect students' achievement (Webster, 1988). Thus, teachers need a strong knowledge base before they begin teaching. An effective staff development model will help teachers gain more knowledge as they continue in their career. This would result in a positive change of instruction in the classroom (Joyce & Showers, 1980).

The staff development model utilized in Reading Recovery provides an avenue for teachers to learn on an individual basis. Through weekly seminars teachers are taught how to implement the Reading Recovery program for each child. Each teacher is constructing their own learning.

The learning of the more experienced Reading Recovery teachers appears to be different than the novice Reading Recovery teacher. During the training year, the novice teachers are concerned with learning all the strategies and terminology. The next year they seem to begin to focus on the learning needs of each child. The teachers become better at following the needs of the child instead of their own agenda (DeFord, 1993). This has been observed through watching tapes of teaching sessions, by reviewing student and teacher records, and by talking with other teachers. However, it has not been documented whether or not the students are learning at a quicker rate and thus are achieving more. Pinnell (1997), one of the Reading Recovery leaders, has called for more research that goes beyond the initial training year.

Teachers in Reading Recovery are expected to learn from their own teaching, from observing other teachers, and from dialogueing with other colleagues (Clay, 1991). This expectation is also the goal of the constructivist model of staff development. In Reading Recovery the intention is that Reading Recovery teachers make more effective instructional decisions after reflecting on past teaching decisions. What the teachers learn from one child, they can use with another one. It is the goal of Reading Recovery that through initial training and teaching experience, the teachers will develop their own knowledge. Through on-going required professional development classes, Reading Recovery teachers continue to refine their skills to effectively teach children (Askew et al., 1998). The knowledge would then be used to make more effective teaching decisions. One would then expect that this would result in higher student achievement. The students of an experienced teacher should be reading at a higher level than those working with a first year teacher. However, these trends have not been documented. Clay has called for more research in this area so that administrators will have the information to use when implementing Reading Recovery (Bufalino, 1997). Results from this study will provide preliminary data to answer this question.

Purpose of the Study

The purpose of this study was to determine how professional development stages influenced the success of Reading Recovery teachers and to assess if experienced Reading Recovery teachers were more effective than Reading Recovery teachers in-training. Effectiveness was determined by two measures of positive outcomes: (1) the teachers' ability to increase students' reading and writing capabilities as evidenced by student achievement on the Observation Survey (Clay, 1993a) and the Woodcock Reading Mastery Tests-Revised (1987); and (2) the number of students that the Reading Recovery teacher discontinued from the Reading Recovery program. It is considered successful to discontinue students because the student no longer needs the additional individualized reading program.

Professional development stages were based on the constructivist theory. Teachers continue to learn about the theory of reading and the art of teaching as they work with their students and problem solve with colleagues. They are encouraged to reflect on the teaching decisions they make. As teachers continue to refine and further develop their skills to effectively teach children who are at risk of failing to learn how to read and write, they pass through a developmental course that parallels Vygotsky's theory of self-regulation. This continuum of learning can be described in five stages within the zone of proximal development. These five stages are assistance provided by more capable

other, transition to self-assistance, assistance to self, internalization and automatization, and deautomatization and recursion.

Teachers progress to the next stage at their own rate. As teachers reach the next stage, they are expected to make more effective teaching decisions. This would result in higher student achievement. This study will determine if there is a relationship between the teachers' zone of proximal development, the achievement of their students, and how many students successfully leave the Reading Recovery program (discontinue).

Research Questions

The following questions will guide the study:

1. Is there a relationship between the stage of constructivist theory (zone of proximal development) of learning of the Reading Recovery teacher and Reading Recovery student achievement?
2. Is there a relationship between the stage of constructivist theory (zone of proximal development) of learning of the Reading Recovery teacher and the number of discontinued Reading Recovery students?
3. Is there a difference in student reading achievement after 60 Reading Recovery lessons between teachers in training and teachers with more Reading Recovery experience?
4. Will the Reading Recovery teachers with more experience be able to discontinue more students from the

program after 60 Reading Recovery lessons than Reading Recovery teachers in training?

5. Do the demographic characteristics (i.e., age, years of teaching experience, highest degree) of Reading Recovery teachers affect the achievement levels of their Reading Recovery students?

Statement of the Null Hypotheses

1. There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the zone of proximal development of their Reading Recovery teacher.

2. There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the zone of proximal development of their Reading Recovery teacher.

3. Students who receive 60 lessons from a Reading Recovery teacher in training will perform as well as students receiving instruction from more experienced Reading Recovery teachers, as measured by the six literacy measures of the Observation Survey developed by Marie Clay (1993a) and the Woodcock Reading Mastery Tests-Revised (1987).

4. More experienced Reading Recovery teachers will not discontinue more students from the program after 60 Reading Recovery lessons than Reading Recovery teachers in training.

5(a). There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the age of their Reading Recovery teacher.

5(b). There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the age of their Reading Recovery teacher.

5(c). There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the number of years of teaching experience of their Reading Recovery teacher.

5(d). There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the number of years of teaching experience of their Reading Recovery teacher.

5(e). There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

5(f). There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

Definition of Terms

For the purpose of this study, terms are operationally defined as follows:

At-risk Students: in a school context, at-risk means those students who are presently eligible for special or compensatory education

Continuing Contact: inservice for trained Reading Recovery teachers that meets six times a year for three hour sessions. The inservice is led by the teacher leader.

Discontinuation: the act of exiting from Reading Recovery after the student has exhibited independent application of required reading and writing strategies. Acquisition of strategies is determined by assessment and daily work which must yield evidence of students' ability to continue to learn from their own efforts in a regular classroom setting.

Reading Recovery: a short-term intervention program in which a highly trained teacher helps the lowest achieving first graders learn effective reading and writing strategies.

Reading Recovery teacher in-training: a teacher engaged in the year-long Reading Recovery training program. During the year of training the teacher is working with four Reading Recovery students.

Reading Recovery teacher: an experienced primary teacher who has successfully participated in a year-long

Reading Recovery training program led by a certified Reading Recovery teacher leader.

Reading Recovery teacher leader: a certified trainer of teachers in the Reading Recovery program. Certification is earned through participation in a year-long training program at an approved training site (Clay, 1987).

Running Records: a written record of a child's oral reading behavior taken by a teacher who acts as a neutral observer.

Self-extending system: a set of operations which allows a child to read better every time he or she reads. In reference to teaching, a teacher improves instruction through each teaching experience.

Strategies: the reader's mental problem-solving actions which are applied when reading and writing continuous text.

Zone of Proximal Development: the distance between what an individual has learned to do without help and his or her level of potential learning with support from a more knowledgeable person.

Assumptions

1. All Reading Recovery teachers in this study are being trained or have been trained by qualified Reading Recovery teacher leaders.

2. All trained Reading Recovery teachers in this study have continued their professional training by attending six continuing contact sessions a year.

3. All Reading Recovery teachers are implementing the Reading Recovery program according to the Reading Recovery Guidebook.

4. The assessment of the Reading Recovery teachers will be conducted through self-report. Therefore it is assumed that teachers completing the questionnaires will do so in a forthright, honest, and professional manner.

Limitations

This study involved teachers in Oklahoma and Northern Texas who were willing to be part of the research study. Findings may be generalized to other teachers with the same teaching experience and training.

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature is presented in six sections. The first section briefly describes Reading Recovery and related research. The second section presents the literature on the definitions and description of effective teachers. The third section discusses the differences between novice and experienced teachers. The fourth section relates professional development to its importance in preparing effective teachers. The fifth section describes the Reading Recovery staff development model. The sixth section describes the constructivist theory of learning.

Reading Recovery

Reading Recovery is an early intervention program which provides daily individual instruction to low-progress readers during their first-grade year (Clay, 1985). Clay constructed the framework for Reading Recovery after years of research observing the reading behaviors of good readers (Pinnell, 1990; Pinnell, DeFord, & Lyons, 1988). Clay (1991) believed that one must know how good readers progress in order to help other children become successful readers. Reading Recovery strives to help the lowest achieving

readers develop the reading systems good readers use, make accelerated progress to reach the level of their peers, and then continue to progress independent of supplemental instruction (Clay, 1985; Pinnell, 1990).

Each Reading Recovery lesson follows a standard sequence of events. However, every lesson is tailored to the child's needs on a minute-to-minute basis as powerful teaching opportunities arise (Clay, 1985; Pinnell, 1990). The lessons begin with rereading of familiar texts which provides opportunities for orchestrating strategies while helping build the child's fluency and feeling of success. Next, the child reads a book that was read for the first time during the previous lesson. While the student reads independently, the teacher takes a written account of what the child is reading. This coded record, called a running record, is used to analyze the child's use of reading strategies.

Next the child composes and writes a message, usually one or two sentences. The teacher guides the student through opportunities to analyze sounds in words and practice writing high-frequency words fluently. Then the teacher writes the child's story on a strip of paper and cuts it up for the child to reassemble. This task forces the child to attend to the visual information, to reread, and to check for accuracy.

Finally, the teacher selects a new book for the student to read which is more challenging than the last. The teacher

supports the child in developing and using the cognitive processes good readers use. These steps provide an outline of typical Reading Recovery lessons.

When children have successfully completed their Reading Recovery program, they are discontinued from the program. Requirements for discontinuing are not based on a specific test score or a set of strategies (Clay, 1985). Children must have a system of strategies in place which enables them to continue learning from their own reading efforts. Clay refers to this system as a self-improving or self-extending system. Students must be able to show independence in reading and writing. Children must also be placed in a appropriate group at about the average level of their class (Clay, 1985).

Research shows that children who begin the Reading Recovery program around their sixth birthday read in the average-band performance of their peers in 12 to 15 weeks (Dunkeld, 1991). Dunkeld reported that 86% of 13,000 first graders that are at-risk who had a full Reading Recovery program reached the average level of the classroom. Follow-up studies involving discontinued Reading Recovery students in Columbus, Ohio, showed that a high proportion of these students continued to make progress in second and third grade (Pinnell et al., 1988). Their mean text reading level fell within the average band of all children in their grade. In contrast, the mean text reading of a comparison group of

students who did not receive Reading Recovery fell farther behind each year.

Reading Recovery is an intense individual intervention program. It has strengthened the reading and writing processes of many students who were at-risk. It is also an intensive training program that provides teachers optimal techniques to utilize when teaching students that are at-risk.

Definition and Descriptions of Effective Teachers

The effective teacher is a difficult concept to define. Many professionals do not agree on how to discriminate high-quality teaching from average teaching. Past effective schools' researchers described effectiveness knowledge without pinpointing a precise definition of effectiveness (Duffy, 1982; Lehem & Crook, 1988). When a term being studied can not be universally defined, it causes controversy in teacher effectiveness studies (Boyer, 1988; Brophy & Good, 1986; Robinson & Good, 1987; Sirotnik & Goodlad, 1988).

The problem of defining effective teaching was recognized by the Carnegie Corporation's Task Force on Teaching as a Profession in 1986 (National Board, 1999). Their report recommended the establishment of a National Board for Professional Teaching Standards. In 1987 the National Board was created. The goal of the board is to improve student learning by strengthening teaching. It is an

independent, nonprofit, nonpartisan organization governed by a 63 member board of directors. Most of the directors are classroom teachers.

The National Board for Professional Teaching Standards has identified several core factors that characterize teachers who effectively enhance student learning (National Board, 1999). The board has identified the following factors: membership in the learning community, reflection and decision making, managing and monitoring student learning, knowledge of subject and pedagogy, and knowledge of students and their learning. These core factors provide a model of effective teaching practice which encompasses the findings of current educational research.

Members of a Learning Community

During the 1980s, the metaphor of the school as a community of learners emerged (Lambert, et al., 1995). In a community of learners, both individual and collective growth are valued, as are the processes for achieving that growth. Student and adult learning are seen as fluid and linked. "Achievement is increased when the culture of the school supports learning for both students and adults" (Lambert et al., 1995, p.15). This was the first movement to place a high value on teacher growth and to link teacher and student learning.

By being in the learning community, teachers make a commitment to continually improve their teaching. They

realize that effective teaching is learned. Self-enhancement is a focus of their teaching careers. Learning is as important to them as it is to their students. Effective teachers attend seminars and inservice and seek and obtain updated reading content (Rosenberg, O'Shea, & O'Shea, 1991).

Reading Recovery teachers are also part of a learning community. During the first year, teachers attend weekly three hour inservice sessions and receive university credit. During each subsequent year, trained Reading Recovery teachers attend six additional training sessions called "continuing contact". During continuing contact, teachers further refine and develop their skills to effectively teach children. Through clinical and peer-critiquing experiences, teachers continue to learn and consult teacher leaders about children whose learning is puzzling (Askew et al., 1998). Reading Recovery teachers are encouraged to attend Reading Recovery conferences and to form their own study groups to discuss specific areas of Reading Recovery. Reading Recovery teachers continue to learn from each other and from teaching their students.

Reflective Decision Making

The theoretical foundation of reflective thinking and teaching dates back to 1933 when Dewey (1933) described reflection as active, persistent, and careful consideration of belief or supposed form of knowledge in the light of the ground that supports it and the further conclusions to which

it tends. Reflective teachers constantly question their own actions, monitor practice and outcomes, and consider the short-term and long-term effects upon the students. Dewey separated reflective thinking into two phases. First, there must exist a state of doubt. Some form of problem must present itself. Second, there must exist a willful act in the attempt to resolve the state of doubt. Conscious thought toward solving the problem must take place in reflective thought.

Schön (1987) conceptualized reflective teaching as a process of making new sense of teaching performance in the context of classroom events. Reflection can take place both subsequent to action, as one's thoughts return to the situation, and in the midst of action when individuals think about practice. Furthermore, logic does not reside in events occurring in the classroom, but afterwards in the conclusions that participants reach when they are reflecting on the meaning of those events.

In reflective decision making, teachers link decision making and the intervention of theory and practice. Reflective teaching expands the expectations for teachers' roles and self-evaluative behaviors from technician to empowered decision maker (O'Shea & O'Shea, 1990; Ross, 1989; Smyth, 1989). To function in this role, effective teachers in reading analyze what they do in instruction, why they behave as they do, how effectively they instruct, and alternative ways to instruct in order that readers learn.

Reflective practitioners often need help in developing observation skills and must be provided with opportunities for analyzing teaching (Wildman & Niles, 1987). Necessary attitudes and resources, such as time and collegial support for nurturing reflection, are essential. Seminars, discussions, or reviews are needed to encourage reflection in and on action.

Clay (1991) agrees that teachers should be experts in observation. A major thrust of Reading Recovery training is teaching teachers to become careful observers of children's reading and writing and to use these observations to inform their teaching. Reflection-in-action (Schön, 1987) is a central ingredient of the Reading Recovery training. Teachers are taught to make careful observations and clear records of the student behaviors and the related teacher behaviors. During the lesson teachers can reflect on their instructional decisions. If the desired child's response is not given, the teacher changes the instruction. This may occur numerous times throughout the lesson. After the lesson, teachers analyze their notes to see if there is any pattern in the child's behavior. If this behavior needs to be changed, the teacher decides on a plan of action.

Manage and Monitor Student Learning

Effective teachers understand that engaged learning time is the key to student achievement. A synthesis of research related to learning found that classroom management

and quantity of instruction were highly influential variables to student learning (Wang, 1990). They know they need to facilitate a classroom environment that is conducive to learning. "Accomplished teachers create, enrich, maintain and alter instructional settings to capture and sustain the interest of their students and to make the most effective use of time" (National Board, 1999, p.1).

Monitoring student learning ensures that instruction is meeting the needs of the students. This requires frequent assessment and can take many forms. Common assessments are portfolios, special projects, exams, and standardized tests. Keeping a record of students' learning over time can help the teacher respond to demands for accountability; teach through direct, first-hand interactive experiences that enhance brain development; and help children perceive learning to be important and worthwhile (Helm, 1997). Effective teachers use assessment to inform the teaching process (Griffin, 1991). However, the classroom is made of a group of individuals. "Accomplished teachers do not treat a class as a monolith. They know that a class does not learn; individual students do" (National Board, 1999, p.3).

Assessment of students contributes to the theory of constructivist learning and is influenced by it (Chittenden & Gardner, 1991). Chittenden and Gardner contend that even though individuals construct knowledge and meaning together, the interpretations derived from personal schemas mean that

outcomes will be different. Therefore, assessment must be different.

Assessment is different in the Reading Recovery program. Assessment is from authentic work of the student. Careful observations are made during each lesson. Daily running records are taken to assess what strategies students use during independent reading. After carefully analyzing the lesson, the teacher plans for the next day. Clay (1991) states emphatically that Reading Recovery follows the child. Through careful observation and analysis of student performance, effective Reading Recovery teachers make instructional decisions that impact students' learning.

Knowledge of Subject Matter and Pedagogy

Effective teachers know their subject matter well. They appreciate how knowledge in their subjects is created, organized, and linked to other disciplines (National Board, 1999). The teachers show their students how knowledge in one area can be related to another. Effective teachers create innovative ways of translating theory into classroom practices (Walberg, 1984; Wang, 1987).

Effective educators also know the importance of critical thinking. "They must understand how students think, if they are to create experiences that actually work to produce learning" (Darling-Hammond, 1996, p.194). Effective teachers encourage students to question prevailing canons

and assumptions to help them think for themselves (National Board, 1999).

Continuing their own knowledge about teaching methods is important for effective teachers. Self-enhancement is a focus of their teaching careers (Boyer, 1988; Rosenberg et al., 1991). "Effective teachers desire to learn beyond the minimum requirements or basic professional competencies" (O'Shea, 1994, p.201).

Reading Recovery teachers also value self-enhancement. Reading Recovery requires a year of training. The success of Reading Recovery is contingent upon a teacher's skill in designing and implementing a "superbly sequenced programme determined by the child's performance, and to make highly skilled decisions moment by moment during the lesson" (Clay, 1993b, p. 9). Experienced teachers of young children volunteer to participate in an intensive, year-long training course that includes: (1) assessment training in the use of the Observation Survey, prior to the beginning of school; (2) a weekly inservice session; (3) daily teaching of a minimum of four children; and (4) school visits by a teacher leader (Gaffney, 1994).

The training is based on research and theory (Clay, 1991). Teachers continue to learn through required continuing contact sessions with other trained Reading Recovery teachers. Learning from teaching students, colleagues, and research is a priority of Reading Recovery training.

Committed to Students and Their Learning

The last item listed by the National Board was knowledge of students and their learning. Effective teachers know the interests of their students and use that when developing curriculum. "Successful teachers operate on the basis of students' needs and strengths" (O'Shea, 1994, p. 201).

An exploratory study was conducted by Mayer (1994) to document the knowledge of students held by highly effective primary school teachers. One highly effective teacher in the study gathered knowledge about students from parents, other students, classroom observation, working with the students, and reviewing formal school records. The teacher used this knowledge to improve students' work habits and to assist them with academic problems. Mayer (1994) concluded that the teacher's teaching effectiveness might stem from the knowledge of her students, specifically the scope and depth of that knowledge, and the importance attached to knowledge of individual students.

The belief that all students can learn is also a description of effective teachers (Cunningham & Allington, 1999; Slavin, Maden, Karweit, Dolan, & Wasik, 1993). Brophy and Good (1986) argued that effective teachers have positive expectations and communicate those expectations to students using appropriate materials, meaningful curriculum, and workable procedures and methods.

The National Board believes that:

Accomplished teachers understand how students develop and learn. They incorporate the prevailing theories of cognition and intelligence in their practice. They are aware of the influence of context and culture on behavior. They develop students' cognitive capacity and their respect for learning. Equally important, they foster students' self-esteem, motivation, character, civic responsibility and their respect for individual, cultural, religious and racial differences (National Board, 1999, p.5).

The belief that all students can learn is also imperative to Reading Recovery teachers. Through teaching students effective reading and writing strategies, teachers expect students will accelerate from the bottom of their class to the average band of their class (Clay, 1993b).

Reading Recovery teachers also know their students well and use this knowledge in their teaching. During the first two weeks of the program, the teacher explores the child's known set of information, helps establish a working relationship, and boosts the child's confidence (Swartz & Klein, 1994). This known set of information could be letters and words the child identifies and words he or she can write. The teacher uses this information to build an

individualized learning experience for that child based on the student's strengths.

Effective teachers are members in the learning community, reflect on their teaching which informs their decision making, monitor student learning, possess a knowledge of the subject and pedagogy, and have a knowledge of students and their learning. The same traits are characteristics of effective Reading Recovery teachers.

Differences Between Expert and Novice Teachers

The difference between expert and novice teachers may be seen in their observation of classroom environment and student interactions. For example, expert teachers notice different aspects of classrooms than do novices, are more selective in their use of information during planning and interactive teaching, and make greater use of instructional and management routines (Berliner, 1987, 1988; Calderhead, 1983; Peterson & Comeaux, 1987).

Another framework for explaining differences between expert and novice teachers is the characterization of teaching as a complex cognitive skill. Central to this characterization is the concept of schema, an abstract knowledge structure that summarizes information about many particular cases and the relationships among them (Anderson, 1984). Many differences in the thinking of experts and novices acting in cognitively complex domains can be explained using this concept. For example, the cognitive

schemata of experts typically are more elaborate, more complex, more interconnected, and more easily accessible than those of novices (Leinhardt & Greenon, 1986). Therefore, expert teachers have larger, better-integrated stores of facts, principles, and experiences to draw upon as they engage in planning, interactive teaching, and reflection.

Also central to the characterization of teaching as a complex cognitive skill is the concept of pedagogical reasoning, or the process of transforming subject-matter knowledge into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the students (Shulman, 1987). This form of thinking is unique to teaching. It is relatively undeveloped in novice teachers (Feiman-Nemser & Buchmann, 1986, 1987).

Pedagogical reasoning can be observed as teachers combine information from existing schemata to fit the particulars of a given lesson. Because experts have well-developed and easily accessible schemata for aspects of teaching such as instructional activities, content, and students, they are able to plan quickly and efficiently. On the other hand, novices often have to develop or at least modify and elaborate their schemata during planning. Their schemata for pedagogical content knowledge seems particularly limited. While experts' knowledge structures include stores of powerful explanation, demonstrations, and examples for representing subject matter to students,

novices must develop these representations as part of the planning process for each lesson. Further, because their pedagogical reasoning skills are less well developed than experts, this planning is often inefficiently carried out (Livingston & Borko, 1989).

This difference in pedagogical reasoning skills is evident as teachers work with students of various abilities. Teachers with extended knowledge structures can adapt the lessons to meet the needs of the students at that moment. They are willing to modify and adjust as needed. Teachers with less knowledge have fewer stores of information from which to choose. When the lesson is not progressing well, they do not know what or how to change it. Fogarty, Wang, and Creek (1983) reported that novices fail to adapt instruction in response to student cues. They are limited by their knowledge. Thus, their instruction may not be as effective.

To teach successfully, teachers must develop expertise in both pedagogical and content knowledge and in how these two forms of knowledge interact in teaching (Berliner, 1987). A mental representation formed by a teacher during planning serves as a guide to move the lesson forward while interactive decision making allows the teacher to adapt the plan to students' needs as the lesson progresses (Parker & Gehrke, 1986). Shulman (1987) conceptualized a teacher's mental representation of a lesson as a bridge linking the teacher's understanding of the lesson content to the

learning of the students. He described teaching as a learned profession and pedagogical content knowledge as a teachers' special form of professional understanding. Berliner (1988) suggested that during planning, novice teachers form mental representations of their lessons that are too narrow or incorrect and that, therefore, lead to problems during teaching.

The experiences of novice and expert teachers in Reading Recovery are similar to those in general education. One central theme is the ability to plan lessons. Reading Recovery teachers in-training have difficulty in planning daily lessons as do first year classroom teachers. During the first year they are learning the procedures and theoretical concepts. They are also becoming familiar with the reading books that are used in instruction. At the same time they are observing their students and planning effective lessons. It makes the first year sometimes difficult. Some teachers do not feel comfortable with their knowledge until their second year (DeFord, 1991).

The cognitive structure is different between Reading Recovery teachers in-training and those with more experience. First year teachers learn the theoretical framework of Reading Recovery. They are encouraged to construct their own learning combining what they already know about teaching reading with the theory learned in class. Teachers are continuously learning and adding to that

theory as they teach each student. Through careful observation and reflection, the schemata changes.

Reading Recovery teachers must also develop expertise in pedagogical and content knowledge and how these two forms of knowledge interact with their teaching. In Reading Recovery this is a cyclical process. The theory informs the teaching and the teaching informs the theory. As Reading Recovery teachers gain more experience and learn more in class, their content knowledge about using the Reading Recovery techniques improve (Askew et al., 1997). Teachers become better at using the techniques that are the best for each student. They learn to make teaching decisions that deliver the most learning gains. The process of learning and implementing the program takes time.

Professional Development

The primary goal of literacy education is to make a difference for children and society. The way to accomplish this goal is to find ways to increase the expertise of teachers. Conscious attention to teacher development is required (Pinnell, 1991). In children's literacy development, the knowledge base has been considerably expanded through research in the past two decades. The next two decades offer unprecedented challenges for literacy education related to a rapidly changing elementary-school population (Hodgkinson, 1985).

Congress has also recognized the importance of professional development. It adopted the National Education Goals 2000: Educate America Act, which became law in 1994 and was amended in 1996 (Executive Summary, 1999). Over the last four years, Goals 2000 has allocated over \$1.7 billion to the States. At least 90% of each State's award is subgranted to districts in support of local reform, professional development, and preservice education. In 1997 more than 3,000 local awards were made (Executive Summary, 1999).

Goal 4 of the National Goals directly addressed staff development. It states that "by the Year 2000, the Nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the 21st century" (U.S. Dept. of Education, p.3, 1999).

In the past, staff development has been held after school hours or on the weekends. Usually it has been a one time event with little follow-up. This type of approach to helping teachers improve their skills is rapidly losing favor as researchers, staff developers, and teachers themselves recognize the massive re-education that will be necessary to carry out major reforms (Lewis, 1994). Goldenberg and Gallimore (1991) posit that this type of staff development must be abandoned if educators genuinely wish to change and improve their teaching strategies.

Dr. John Daresh (1984), Professor of Educational Administration at the University of Cincinnati, stated that in-service education is not very effective. He believes that efforts are generally sporadic and that little attention is paid to the relationship between professional development for teachers and the improvement of instruction. This claim is supported by the results of a study by Moore and Hyde (1981). In their investigation of in-service education in three urban school districts, Moore and Hyde found that the choice of activities was not as much a conscious policy as it was an accumulation over time of politics, teacher contract negotiations, and government funding.

The Consortium for Policy Research in Education has reviewed the status of professional development (Consortium for Policy Research in Education [CPRE], 1999). They have found that little has changed. In-service may or may not be relevant to teachers' professional needs. Districts receive little guidance about how to manage and improve their efforts. "Innovators are trying some interesting new approaches, and a few states are implementing changes for new teachers, but the vast majority of districts are doing what they have always done" (CPRE, 1999, p.2).

One way to make in-service more effective is to allow time for teachers to share what they have learned and how they can apply it to their instruction. Asking teachers to make explicit their ideas promotes the importance of those ideas. When teachers articulate the theory behind their

decisions they become more conscious of what they know and the decisions they make (Heckman & Peterman, 1996). Knowing what one knows as well as what others know through public mindfulness in organizations like school promotes learning among all participants and encourages inquiry into the worth of existing practices.

Joyce and Showers (1980) spent two years examining the research on the ability of teachers to acquire teaching skills and strategies. They analyzed more than two hundred studies and concluded that the most effective inservice must meet the following conditions:

1. Presentation of theory
2. Modeling or demonstration
3. Practice under simulated conditions
4. Structured feedback
5. Coaching for application

If any of these components are left out, the impact of training will be weakened in the sense that few numbers of teachers will transfer what they learn into the classroom.

Effective staff development will give teachers the tools they need to meet the demands of students who are at-risk. Teachers need inservice that evolves over time and a chance to practice their skills in the classroom. Slavin (1994) agrees that there is a need for schools to invest in extensive staff development to help teachers learn and incorporate in daily lessons the latest developments in curriculum and instruction. It may be the most cost

effective means of improving the achievement of all children.

Reading Recovery Staff Development Model

Research has shown that most forms of in-service training are not designed to provide the on-going interactive cumulative learning necessary to develop new conceptions, skills, and behaviors (CPRE, 1999). It seemed that it did not matter how much advance training and staff development occurred prior to implementation. It was when teachers actually tried to implement new approaches that they had the most trouble.

By using Reading Recovery teacher leaders the problems of implementation are negated. Reading Recovery uses a trainer of trainers model. University professors (trainers of teacher leaders) prepare district or county level teacher leaders who in turn train teachers in the Reading Recovery teaching techniques. This model ensures that Reading Recovery will have the support at the school district and site levels necessary for successful program implementation (Swarz & Klein, 1994).

The teacher leader training is very intense. Training is received for a full academic year at a university site recognized by the National Diffusion Network. The teacher leader training model includes (1) a study of program procedures that includes working with children; (2) an in-depth study of the theoretical foundations upon which the

procedures are based; (3) training in the process of working with adult learners; and (4) training in management and administrative implications of program implementation. These trained teacher leaders then return to school districts to train teachers who will then work with first grade readers who are at-risk (Frasier, 1996).

Teachers at the school district are then trained for one academic year by the teacher leader. These teachers are called "in-training" Reading Recovery teachers. The initial year of training consists of a weekly three hour graduate course. After the initial training year, Reading Recovery teachers attend six continuing contact sessions per year which are led by the Reading Recovery teacher leader.

In addition to teaching the clinical course for an entire year, the teacher leader is responsible for providing individual help to teachers in-training and for those previously trained. The leader assists teachers through regular visits to their schools and individual observation of lessons. In these sessions the leader is able to give specific, critical feedback to teachers and to engage with them in solving problems about the progress of individual children.

Monitoring is integral to the program and takes place at many levels. Leaders monitor the behavior and understandings of teachers; teachers assist each other by monitoring through observation, analysis, and discussion; and teachers monitor children's progress through ongoing

analysis of reading and writing behavior. All participants learn to monitor their own progress.

Schön (1991) suggested that there are ways of knowing necessary for professional competence as a Reading Recovery teacher: facts/rules/procedures, thinking like a teacher, and reflection in action. The facts, rules, and procedures are taught during the training year and during the continuing contact the following years. Thinking like a teacher may be interpreted as combining theory and practice to make the most effect teaching decisions. Reflection in action occurs after each lesson with each child. The teacher reflects about the decisions she made and the students' responses to them. Subsequent teaching is dependent upon these conclusions.

A powerful component of the Reading Recovery staff development model is the continuing contact between the trained teachers and the teacher leader. Reading Recovery teachers are required to attend six continuing contact sessions per year. This avenue allows for a built-in renewal system that updates teachers on new ways to be effective in their work (Smith-Burke, 1996).

Professional development and the quality of teacher decision making make a difference in students' success (Lyons, Pinnell, & DeFord, 1993). Staff development also aides in the teachers' ability to discontinue more students from the Reading Recovery program. Clay (1997) cites

educator Pearson's comments about the implication of teacher education in Reading Recovery:

Reading Recovery has managed to operationalize that vague notion that teachers ought to reflect on their own practice. That behind the glass play by play analysis and the collegial debriefing with the teacher after her teaching session represent some of the best teacher education I have witnessed in my 28 year history in the field (p. 663).

A body of research (Alverman, 1990; DeFord, 1993; Power & Sawkins, 1991) indicates that Reading Recovery teacher training has a powerful and long lasting impact on the teachers who participate. The skills and knowledge teachers develop in Reading Recovery contribute to their ongoing learning and result in an impact on children across time.

Constructivist Theory

Constructivism is a theory of learning and a theory of knowing. The key concept of constructivism is that learning is an active process of creating, rather than acquiring, knowledge (Burns, Heath, & Dimock, 1998). Constructivist learning theory is not age- or stage-bound but refers to the processes of cognition for humans (Lambert et al., 1995).

The following principles provide a general framework of constructivism:

- Learners bring unique prior knowledge and beliefs to a learning situation.
- Knowledge is constructed uniquely and individually, in multiple ways, through a variety of tools, resources, and contexts.
- Learning is both an active and reflective process.
- Learning is developmental. We make sense of the world by assimilating, accommodating, or rejecting new information.
- Social interaction introduces multiple perspectives on learning.
- Learning is internally controlled and mediated by the learner. (Burns et al., 1998, p.1)

Constructivism is all about inquiry, exploration, and autonomy (Burns et al., 1998). Constructivism shifts from passive to active learning and valuing authentic tasks. According to research in education and psychology, constructivism mirrors the way humans learn (Fosnot, 1996). Humans learn by doing and by interacting with others. A significant contribution of Vygotsky (1978) is the understanding that intelligence, meaning, and thought are constructed in interaction with others and that this construction is also historically cumulative and sociocultural.

More than 50 years ago John Dewey challenged prevailing views of learning by suggesting education is an internal process in which the learner uses prior knowledge and experience to shape meaning and to construct new knowledge (Dewey, 1933). The new knowledge is influenced by reflection, mediation, and social interaction. The knowledge exists within the learner and "evolves in nonlinear ways from the experiences and attitudes of the learner" (Lambert et al., 1995, p.19). Jean Piaget (1985) added to this idea of learning with his research about developmental learning. According to Piaget, as learners mature, they develop new cognitive structures, or schemas, that are more sophisticated, allowing them to make sense of increasingly more complex knowledge. This developmental meaning-making propels and influences children and adults alike (Kegan, 1982).

Making sense of new learning is a part of self-reflection. The ability to reflect on one's learning is a part of constructivist learning. Schön (1983) suggests that the key to growth and development as a teacher is the ability to reflect on one's learning, to adapt behavior based on that reflection and to develop a theoretical framework that takes into account one's experiences. "A teacher's greatest opportunity for growth is systematic inquiry into his or her own teaching and learning" (Stallworth, 1998, p.77).

Vygotsky (1978) also viewed learning as developmental and socially constructed. He believed learning was most effective in the zone of proximal development (ZPD). The ZPD is the "distance between what an individual has learned, that is, what he or she can do without help from others, and their level of potential learning, that is, what he or she can do with support from others" (Lyons et al., 1993, p.170).

Vygotsky (1978) argued that learners working within this ZPD awaken a variety of internal cognitive processes when the learner is interactive with people or in cooperation with others. According to Vygotsky, the higher cognitive processing first appears on the social level, between people, and later on the individual level, inside the learner. Once the processes are internalized, they become part of the learner's independent developmental achievement.

Vygotsky (1962, 1978) stressed that learning could not be viewed without context, as if independent of cultural or historical influences or significance. Learning is a cumulative experience derived from an individual's cultural and historical experiences. Learning is a social activity in which knowledge is constructed as a result of interaction and shared efforts to make sense of new information (Brooks & Brooks, 1993; Leinhardt, 1992).

Making sense of this new information occurs in the ZPD (Vygotsky, 1962). This is the central arena through which

individuals' interactions make sense of what they think and believe and create new ideas and information. It is the time for self-reflection and self-evaluation.

Learning, self-reflection, and making sense of new ideas are central forces of teacher professional development. Professional development can be viewed as constructivist learning. Constructivist learning theory assumes learners bring experience and understandings to the classroom. Teachers bring their teaching experience to each new teaching situation. They apply what they know to accommodate the current learning situation.

Constructivists believe learning is socially constructed. Meaningful staff development is also socially constructed (Joyce & Showers, 1980; Lyons et al., 1993). Teachers learn from listening to other colleagues and from articulating their own ideas (CPRE, 1999; Stallworth, 1998). Teachers who have a chance to network with other professionals no longer feel that are teaching in a vacuum. They feel energized by the dialogue with other teachers with similar educational issues.

Reflection and metacognition are essential aspects of constructing knowledge and meaning. Schön (1991) described reflection as the time teachers judge the effectiveness of their teaching. Effective teachers take action based on their new understandings.

Part of the reflection is assessing one's own learning. Teachers can establish learning goals and criteria for

success. Through self-assessment teachers can determine how much they have learned as well as the process by which they have come to know.

Through self-assessment teachers can determine their level in the ZPD. They can determine what they can do easily and with what they need support. Thus, they can know what kind of professional development they need.

The ZPD can be used to discuss conditions that apply to Reading Recovery teachers' learning of new teaching skills (Lyons et al., 1993). The Reading Recovery programs often requires reconstruction of teachers' theoretical understandings about the learning process. "Acquiring these new abilities involves learning a new language to describe, assess, explain, and interpret phenomena" (Lyons et al., 1993, p. 172). As teachers acquire skill in making more effective teaching decisions, their thinking and ability to regulate their actions follows a developmental course that parallels Vygotsky's theory of self-regulation.

Zone of Proximal Development and Teaching

According to Tharp and Gallimore (1988), the developmental progression of teachers' ability to regulate their teaching performance can be viewed as a continuum of five stages within and beyond the ZPD. The five stages are: (1) assistance provided by more capable others; (2) a transition from assistance by others to self-assistance; (3) assistance provided by the self; (4) internalization and

automatization; and (5) deautomatization and recursion. Reading Recovery teachers' development may be described in terms of these five phases.

Assistance provided by more capable others is the idea that Reading Recovery teachers' behavior is initially regulated by teacher leaders:

The teacher leader's primary goal is to provide assistance by focusing teachers' attention on specific principles...that need to be understood early in the training...The novice teachers learn how to make powerful teaching decisions that support and advance the child's learning through conversation with the teacher leader and peers (Lyons et al., 1993, p.172-173).

The novice Reading Recovery teacher learns the program procedures from the teacher leader who is the more capable other.

As the weeks of training progress, teachers may develop to the stage of transition from assistance by others to self-assistance. The teacher leader's responsibility declines as the Reading Recovery teacher controls more of the learning process. Teachers become their own consultants, providing assistance to themselves. Through careful self-reflection via lesson records, audio tapes, or video tapes, teachers discern their teaching effectiveness.

The next stage of self-regulation is assistance provided by the self. Teachers' thinking and decision-making

becomes more refined and expanded as they gain more knowledge and experience (Lyons et al., 1993). Developing the cognitive processes necessary to assist oneself is a complex skill that takes time. But when teachers start to assist themselves, rather than asking the teacher leader or others for guidance, there are "significant gains in their teaching performance" (Lyons et al., 1993, p.175).

After teachers are able to assist themselves, their behavior becomes internalized and automatic. They do not require another person telling them what teaching decisions to make. Tharp and Gallimore (1988) describe this process in the following way: "In theoretical terms, once self-directed assistance disappears, we may presume that the individual has emerged from the ZPD for the task at hand...Assistance, from others or the self, is no longer needed and would now be disruptive" (p. 257).

Reading Recovery teachers who are operating at an automatic level of problem solving have internalized a repertoire of actions with which to react and make powerful decisions. The teacher operating at an automatic level is free to deal with unexpected student responses and behavior as they occur. These unexpected student responses often create the deautomatization of teaching performance that leads to recursion through the ZPD.

According to Gallimore and Tharp (1990), deautomatization and recursion occur so regularly during the learning cycle that they constitute a fifth stage of the

normal developmental process. When students' processing is hard to infer, predict, interpret, and understand, teachers engage in more complex reasoning. They will problem solve with their colleagues and apply their theoretical knowledge and understanding of learning to select the most powerful teaching techniques. For specific problems, the teacher may need to reenter the ZPD to the stance of assistance by others or self-assistance. This would occur for a specific time as the teacher is problem solving a difficult case. After the teaching decisions are made with colleagues, the teacher would move quickly to the internalized and automatic level.

Summary

To help all students become successful readers, they need experienced teachers who are continuing to learn about alternative methods for reaching the students who are at-risk. The first section described the Reading Recovery program and its success with first grade students who are at-risk in the areas of reading and writing. Students who were successful in the Reading Recovery program have shown to maintain their gains. These students continue to perform within the average range of their classroom.

The second section presented descriptions of effective teachers. Effective teachers show the importance of learning by being members of the learning community. They also spend time reflecting on their teaching decisions. Effective

teachers know how to manage and monitor the students' learning so that modifications may be made in the teaching methods. Effective teachers are knowledgeable about their subject matter as well as the art of teaching. Providing a learning environment in which all students can learn is also important to effective teachers.

The third section discussed the differences between novice and experienced teachers. Novice teachers are concerned with methods and procedures. They do not have teaching experience to rely on when making decisions. Experienced teachers rely on their past teaching experiences to make informed decisions. They know how to adapt the lesson to fit the needs of the learners.

The fourth section reviewed the relationship of effective professional development to effective teaching. Professional development that incorporates theory with practice was shown to be more beneficial. To be useful for teachers, the professional development also needed to be more than a one day event. The teachers need time to practice what they are learning in the classroom. They also need a chance to discuss their learning with other teachers.

The fifth section described the Reading Recovery professional development model. There are three levels in the professional development model. The first level is the Reading Recovery teacher training. The teacher leader trains the in-training teachers for one year. The second level is the training of Reading Recovery teacher leaders. The

teacher leader attends one year of post-masters graduate level courses at a university training center. Teacher leader trainers teach the teacher leaders. The third level is the training of teacher leader trainers. Teacher leader trainers must have doctoral degree to be accepted into the program. They attend a year of graduate level courses at university training centers recognized by the North American Trainers Group (Askew et al., 1998).

The last section described the constructivist theory of learning. Professional development is the act of teachers learning more about the art of teaching and their subject matter. The constructivist theory relies on teachers using their previous knowledge and experience to the learning situation. Learning is a developmental process. As teachers gain more knowledge and experience, they pass through different levels of the ZPD.

Teachers are trained in Reading Recovery based on the constructivist theory of learning. Learning is seen as an individual, developmental process. Teachers with more experience have had more opportunity to add to their knowledge base. This may result in greater student achievement.

CHAPTER III

METHOD

This study was designed to compare the effectiveness of Reading Recovery teachers based on their years of experience and their stage in the ZPD. The ZPD is related to the constructivist theory of learning. The stage that teachers feel they are functioning can impact their instruction. Teachers that feel they need more support may not be as effective in their decision making. Effectiveness for this study is measured by the teachers' ability to increase students' reading and writing capabilities as evidenced by student achievement. The following questions guided the study:

1. Is there a relationship between the stage of the constructivist theory of learning (ZPD) of the Reading Recovery teacher and Reading Recovery student achievement?

2. Is there a relationship between the stage of constructivist theory of learning (ZPD) of the Reading Recovery teacher and the number of discontinued Reading Recovery students?

3. Is there a difference in student reading achievement after 60 Reading Recovery lessons between teachers in-training and teachers with more Reading Recovery experience?

4. Will the Reading Recovery teachers with more experience be able to discontinue more students from the program after 60 Reading Recovery lessons than Reading Recovery teachers in-training?

5. Do the demographic characteristics (i.e., age, years of teaching experience, highest degree) of Reading Recovery teachers affect the achievement levels of their Reading Recovery students?

Subjects

The subjects of this study were forty Reading Recovery teachers and their respective students. The teachers volunteered for the study. The teachers were divided into two groups. One group (Group A) was twenty Reading Recovery teachers who were being trained this year. The other was a group (Group B) of twenty Reading Recovery teachers with experience. The teachers taught in seventeen different school districts from the midwestern United States. The majority (63%) of the teachers taught in small towns (population 10,000 to 49,999). Twenty-eight percent taught in rural areas and 10% taught in small cities (population 50,000 to 100,000). The teachers lived within their communities.

The student population in each public elementary school was predominantly (75%) white. The socioeconomic status was low to middle income. All teachers were hired through Title I funding. Schools receive Title I money based on the free

and reduced lunch count for their schools. A description of both groups of teachers is provided in Tables 1,2, and 3.

TABLE 1. Description of Subjects

Characteristic	Group A	Group B
Ethnicity		
White	100%	95%
Native American	0%	5%
Gender		
Female	95%	95%
Male	5%	5%
Age		
20-29	10%	0%
30-39	25%	25%
40-49	40%	35%
50-59	25%	40%

Table 2. Professional Experience

Characteristic	Group A	Group B
Years in Education		
1-5	5%	15%
6-10	15%	45%
11-15	35%	15%
16-20	30%	15%
21-25	15%	5%
26-30	0%	5%
Years in Reading Recovery		
First year	100%	0%
2-4 years	0%	35%
5-7 years	0%	65%
Prior Teaching Experience		
Elem. Classroom Only	45%	40%
Elem. Classroom and Title I	40%	25%
Jr. High and Title I	5%	5%
Pre-K and ESL	0%	5%
Physical Educ.	5%	5%
Music	0%	5%
Special Educ.	0%	10%
Home Economics and Special Educ.	5%	0%
Home Economics and Elem. Classroom	0%	0%
Title I and Business	0%	5%

Table 3. Educational Experience

Characteristic	Group A	Group B
Highest Degree Earned		
BA	50%	40%
MA	50%	60%
Major		
Elementary/Early Childhood	45%	40%
Reading	40%	35%
Math	0%	5%
Recreation/Health/PE	5%	15%
Special Education Curriculum	5%	5%

Instruments

The teachers' effectiveness was assessed by the progress of their students. Therefore, each student was tested at the beginning of the Reading Recovery program and after 60 lessons. The instruments used for the assessment were the Observation Survey developed by Marie Clay (1993a) and the Woodcock Reading Mastery Test-Revised (1987) (see Appendix A).

The Observation Survey was developed by Marie Clay as a tool in assessing early literacy behavior. The Observation Survey is a systematic observation that is given by highly trained teachers. The teachers must attend a minimum of twenty-four hours in-training before they are qualified to administer the exam.

The tasks of the Observation Survey have the qualities of sound assessment instruments with reliability at Cronbach Alpha = 0.92 (Ary, Jacobs, & Razavieh, 1990) and validity at

0.85 and discrimination indices established in research studies. The tasks are as follows:

Letter Identification: to find out what letters the child knows (noting preferred mode of identification and confusions); TASK: to identify 54 different characters, including upper and lower case letters and conventional print forms of 'a' and 'g'. The raw score ranges from zero to 54.

Word Test: to find out whether the child is building up a personal resource of reading vocabulary; TASK: to read a list of 20 high-frequency words. The range of raw scores is zero to 20.

Concepts about Print: to find out what the child has learned about the way spoken language is put into print; TASK: to perform a variety of tasks during a book reading by the teacher. Raw scores range from zero to 24.

Writing Vocabulary: to find out whether the child is building a personal resource of words that are known and that can be written in every detail; TASK: to write all known words in 10 minutes. The raw scores range from zero to an unlimited number.

Hearing and Recording Sounds in Words: to assess phonemic awareness by determining how well the child presents the sounds of letters and clusters of letters in graphic form; TASK: to write a dictated sentence, with credit for every sound correctly represented. The range of raw scores is zero to 37.

Text Reading: to determine an appropriate level of text difficulty for the child, and to record (using a running record) what the child does when reading continuous text; TASK: to read texts representing a gradient of difficulty until the highest text level with 90% accuracy or better is determined. The text level may range from zero to 30.

All students were assessed with the Observation Survey. A smaller group of students (n=12) was also assessed with the short scale version of the Woodcock Reading Mastery Tests-Revised. It consists of word identification and passage comprehension. This test has been shown to be statistically sound. The split-half reliability coefficient for total reading-short scale is .98 (Woodcock, 1987).

The word identification portion contains 106 items arranged in order of difficulty. An average first grade student would obtain a raw score of 20. The students are required to identify isolated words that appear in large type on the subject pages of the test book. The students must respond correctly within five seconds in order to be credited for the response.

The passage comprehension test measures the students' ability to study a short passage, usually one or two sentences long, and to identify a key word missing from the passage. The task is a modified cloze procedure. The sentences in the first grade range are supported by a pictured related to the text. This gives the child information he or she may use to determine the appropriate

word to complete the sentence. The passage comprehension test contains 68 items arranged in order of difficulty. An average first grader will score about eleven.

The teachers were assessed with a researcher developed instrument (Appendix B) that asked the teachers to rate their use of the skills effective teachers use—problem solving, generating and testing hypotheses, challenging the thoughts of others, reflecting on teaching experiences, and dialoging with other Reading Recovery teachers. These categories were used because the effective teacher literature and the Reading Recovery literature, show them to be central to teacher effectiveness and teacher's professional development (Askew et al., 1998; Clay, 1997; Dewey, 1933). The effective teacher research shows that problem solving is a characteristic of effectiveness (Duffy, 1982). Reading Recovery teachers are taught how to problem solve during their year of initial training.

The theoretical foundation of reflective thinking and teaching dates back to Dewey (1933). Dewey believed effective teachers reflect on their teaching decisions and use their experience to make more effective teaching decisions in the future. Reflection-in-action (Schön, 1987) is a central ingredient of the Reading Recovery training. Teachers are taught how to reflect on their teaching to determine if they are making the most productive teaching decisions. If they are not productive decisions, they adjust them to meet the individual learning needs of that child.

Generating hypotheses and testing them are part of an effective learning experience for teachers. As teachers formulate their ideas and articulate them to others, they become more conscious of what they know and the decisions they make (Heckman & Peterman, 1996). Reading Recovery teachers are taught how to test their hypothesis during their year of training and during the continuing contact sessions. They articulate their thoughts to others. This initiates the dialog with the other Reading Recovery teachers. Some teachers may choose to challenge the proposed hypothesis. The teacher would give evidence as to why he or she would reject the hypothesis. As a group the teachers discuss both hypotheses. This dialog provides an avenue for teachers to learn from each other (DeFord, 1991).

There has been anecdotal evidence that Reading Recovery teachers believe they become better at problem solving, generating hypotheses, challenging the thought of others, reflecting, and dialoging with others. As teachers develop more in these areas, teachers are expected to become more effective. This would result in higher student achievement.

The teachers were also asked to indicate the level of ZPD they believe they are in with relationship to their professional development in Reading Recovery. The levels of ZPD are related to the constructivist learning theory. Learning is developmental and different for each teacher. Teachers pass through the different levels of Vygotsky's (1978) ZPD at different times. It is believed that as

teachers move from the assistance provided by more capable other to the deautomatization and recursion zone, they make more effective teaching decisions (Lyons, Pinnell, & DeFord, 1993). This would result in higher student achievement and a higher number of students discontinued from the Reading Recovery program.

Procedure

Following the selection of the subjects and their students, letters of consent were prepared to explain the research to the parents and teachers (see Appendix C). The researcher held conferences with the Reading Recovery teachers and parents who had questions or concerns.

The Observation Survey and Woodcock Johnson Mastery Test-Revised were administered as a pretest. Sixty Reading Recovery lessons were delivered to each student by their respective Reading Recovery teacher. The same two instruments were then administered as a posttest.

The questionnaires were given to the 40 Reading Recovery teachers at the end of the study. Over half were delivered in person and the others were mailed. Self-addressed stamped envelopes were provided for the return of the questionnaires. All teachers completed and returned the questionnaires.

Data Analysis

The pretest and posttest scores were used to compute a value for each student. For each subtest, the pretest score was subtracted from the posttest score to obtain an achievement score. These scores were aggregated for each teacher to obtain one score on each subtest completed by their students. The achievement scores for the students and data from the teacher questionnaires were used to analyze the following null hypotheses:

H₀1: There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the zone of proximal development of their Reading Recovery teacher.

The achievement scores were used in a one-way analysis of variance (ANOVA) to determine if the teachers' ZPD levels shows a difference in achievement scores of their students.

H₀2: There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the ZPD level of their Reading Recovery teacher.

The number of discontinued students for each teacher was compared in a one-way ANOVA. The teachers' ZPD level was compared to determine if there are differences among the levels for the number of discontinued students.

H₀3: Students who receive 60 lessons from a Reading Recovery teacher in-training will perform as well as students receiving instruction from more

experienced Reading Recovery teachers, as measured by the six literacy measures of the Observation Survey (1993) developed by Marie Clay and the Woodcock-Johnson individual reading achievement test.

H₀4: More experienced Reading Recovery teachers will not discontinue more students from the program after 60 Reading Recovery lessons than Reading Recovery teachers in-training.

A series of t-tests was used to test these two hypotheses. The small number of teachers and the multiple achievement tests do not allow for a multivariate analysis. Differences between the two groups of teachers, in-training and experienced, were assessed. The Bonferroni procedures were used to control familywise error rate. An alpha significance level of .007 was used.

H₀5(a): There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the age of their Reading Recovery teacher.

H₀5(b): There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the age of their Reading Recovery teacher.

H₀5(c): There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the number of years of

teaching experience of their Reading Recovery teacher.

H₀5(d): There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the number of years of teaching experiences of their Reading Recovery teacher.

A correlation matrix was created using Pearson Product Moment Correlation, to determine the relationship between achievement and discontinued students and teachers' age and years of teaching experience.

H₀5(e): There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

H₀5(f): There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

A series of t-tests were used to these two hypotheses. The Bonferroni procedure was used to control familywise error rate. An alpha significance level of .007 was used.

Summary

This study was conducted to compare the effectiveness of Reading Recovery teachers based on their years of experience and their stage in the ZPD. Twenty trained

Reading Recovery teachers and 20 teachers in-training were part of this study. The effectiveness was measured by the amount of student achievement on the Observation Survey (Clay, 1993a) and the Woodcock Reading Mastery Test-Revised (1987). The teachers determined their level of ZPD by completing a researcher developed questionnaire.

CHAPTER IV

RESULTS

The purpose of this study was to determine if experienced Reading Recovery teachers were more effective than Reading Recovery teachers in training. In the Reading Recovery literature, anecdotal accounts showed that teachers felt they were more effective after their initial training year. However, there has not been any empirical research to confirm these anecdotal accounts.

The study also looked at the relationship of the teachers' professional development and the reading achievement of their students. Effective teachers continue to pursue their own learning. Reading Recovery teachers learn using the constructivist theory of learning. Teachers learn through common experiences, reflecting on their teaching, and sharing previous knowledge and beliefs. As Reading Recovery teachers gain more knowledge through training and teaching, they pass through different zones of proximal development. This study looked at the relationship between each teacher's ZPD and their students' achievement.

Sample

There were two groups of teachers in this study. One group consisted of Reading Recovery teachers in training. The second group was experienced Reading Recovery teachers. Table 4 shows the characteristics of the sample.

Table 4. Description of Teacher Sample

Characteristic	Total Group n=40		In-training n=20		Trained n=20	
	n	%	n	%	n	%
Gender						
Male	2	5.0	1	5.0	1	5.0
Female	38	95.0	19	95.0	19	95.0
Race						
White	39	97.5	20	100.0	19	95.0
Native American	1	2.5	0	0.0	1	5.0
Highest Degree Earned						
BA	18	45.0	10	50.0	8	40.0
MA	22	55.0	10	50.0	12	60.0
Major						
Elementary/Early Childhood	17	42.5	9	45.0	8	40.0
Reading	15	37.5	8	40.0	7	35.0
Math	1	2.5	0	0.0	1	5.0
Recreation/Health/PE	4	10.0	1	5.0	3	15.0
Special Education	1	2.5	1	5.0	1	5.0
Curriculum	1	2.5	1	5.0	0	0.0
Level of Zone Proximal Development						
Transition to self assistance	11	27.5	10	50.0	1	5.0
Self assistance	14	35.0	6	30.0	8	40.0
Internalization and automatization	11	27.5	3	15.0	8	40.0
Deautomatization and recursion	4	10.0	1	5.0	3	15.0
<hr/>						
	Mean	SD	Mean	SD	Mean	SD
Age	44.1	8.0	42.5	8.1	45.7	7.8
Total teaching experience	16.0	6.6	16.4	5.6	15.7	7.7
Reading Recovery teaching experience	2.9	2.2	1.0	0.0	4.7	1.7

The sample was 95% female and 98% white. Both groups in the study had similar amounts of total teaching experience. More than half of the teachers had obtained a masters degree. Most of the degrees were in reading or elementary education.

During the year of training, Reading Recovery teachers gain a lot of knowledge from their teacher leader. Therefore, it was not surprising that 50% of those in training saw themselves in the "transition from assistance by others to self-assistance" as their level of ZPD.

It was unexpected that 30% of the teachers in training saw themselves in "assistance provided by the self" as their level of ZPD.

The majority of trained teachers indicated they felt they were either in "self-assistance" or "internalization and automatization" as their level of ZPD. Teachers may be more effective if they are in the "internalization and automatization" level. Reading Recovery teachers who are working at this "level of problem solving have internalized a repertoire of actions with which to react and make powerful decisions" (Lyons et al., 1993, p. 176). Thus, the teachers may not be operating at their most effective level. This could result in lower student reading achievement.

Variables of Interest

Effective teachers spend time reflecting on their teaching experiences. Table 5 presents the means and standard deviations of the effectiveness indicators the teachers responded to on the teacher questionnaire.

Table 5. Means and Standard Deviations of Teacher Effectiveness Indicators

Indicator	Total Group n=40		In-training n=20		Trained n=20	
	Mean	SD	Mean	SD	Mean	SD
Problem Solving	8.75	1.33	8.60	1.35	8.90	1.33
Generate Hypotheses	8.08	1.67	7.95	1.82	8.2	1.54
Test Hypotheses	7.10	2.13	7.0	2.18	7.2	2.14
Challenge Thought of Others	7.63	2.17	7.70	2.11	7.44	2.28
Reflect on Teaching Experiences	9.13	1.20	9.45	.83	8.80	1.44
Dialogue with Reading Recovery Teachers	9.23	1.48	9.40	.99	9.05	1.85

There was little difference between the indicators of the Reading Recovery teachers in training and the trained teachers. The indicator with the most difference was the issue of reflection on one's teaching experiences.

Student Achievement Scores

The pretest scores were subtracted from the posttest scores for each of the students' achievement tests. These achievement scores were aggregated to obtain an achievement score for each teacher across all of his or her students. These scores were used in the analyses of the null hypotheses. Table 6 presents these achievement scores.

Table 6. Means and Standard Deviations of Student Achievement Scores and Number of Discontinued Students (aggregated by teacher)

Achievement Indicator	Total Group n=40*		In-training n=20		Trained n=20	
	Mean	SD	Mean	SD	Mean	SD
Observation Instrument (Clay, 1993a)						
Letter ID	16.69	8.23	20.65	8.58	12.74	5.68
Word test	11.01	3.75	10.82	4.33	11.20	3.16
Concepts about print	8.85	2.26	9.73	2.49	7.96	1.90
Writing vocabulary	25.88	6.07	25.30	6.55	26.47	5.65
Hearing and recording sounds in words	25.95	5.74	26.00	6.90	25.90	4.48
Text level	7.20	2.95	7.13	3.45	7.27	2.43
Woodcock Reading (1987)						
Reading word ID (n=12)	19.19	6.46	20.85	7.65	18.36	6.18
Passage comprehension (n=12)	7.08	1.57	7.52	1.93	6.85	1.44
Number of discontinued students	.85	.95	.95	.94	.75	.97

* n=40, unless noted differently

The achievement scores were very similar for the Reading Recovery teachers in training and the trained teachers. The subtest that showed the biggest difference was the letter identification. It appeared the students learned more letters with the less experienced Reading Recovery teachers.

Analysis of Null Hypotheses

Data collected from students and teachers were used in the analysis of each of the null hypotheses created for this study. The results of the data analysis are reported below. Each null hypothesis and the statistical procedure used to analyze it are presented and the results are given.

H₀1: There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the zone of proximal development of their Reading Recovery

The pretest and posttest scores obtained by each student were used to compute a value for each student. For each subtest, the pretest score was subtracted from the posttest score to obtain an achievement score. These achievement scores were aggregated for each teacher to obtain one score on each subtest completed by their students. These scores were used in a series of one-way analyses of variance (ANOVAs) to determine if the teachers' zone of proximal development level shows a difference in achievement scores of their students. The Bonferroni

procedure was used to control familywise error rate (Keppel, 1991). An alpha significance level of .007 was used. Table 7 presents the results of these analyses.

Table 7. Results of ANOVA Analyses for Null Hypothesis 1- Student Achievement Differences Between Levels of Zone of Proximal Development in Their Teachers*

Achievement Indicator	Mean	SD	F	p
Letter identification				
transition to self-assistance	18.67	9.23	.39	.76
self assurance	16.73	7.46		
internalization and automatization	14.79	8.60		
deautomatization and recursion	16.38	8.95		
Word test				
transition to self-assistance	10.56	4.84	.14	.93
self assurance	11.52	3.15		
internalization and automatization	10.92	3.64		
deautomatization and recursion	10.75	3.89		
Concepts about print				
transition to self-assistance	8.77	1.93	.47	.71
self assurance	8.84	2.91		
internalization and automatization	9.35	2.44		
deautomatization and recursion	7.69	.99		
Writing vocabulary				
transition to self-assistance	23.80	5.69	1.03	.39
self assurance	27.98	6.74		
internalization and automatization	25.27	4.78		
deautomatization and recursion	25.94	7.75		
Hearing and recording sounds in words				
transition to self-assistance	24.48	6.50	.44	.73
self assurance	25.86	6.63		
internalization and automatization	26.92	4.45		
deautomatization and recursion	27.63	3.97		
Text level				
transition to self-assistance	6.63	3.09	.18	.91
self assurance	7.40	3.06		
internalization and automatization	7.41	3.02		
deautomatization and recursion	7.50	2.98		
Woodcock reading word identification (n=12)				
transition to self-assistance	21.08	7.58	1.45	.30
self assurance	14.56	3.24		
internalization and automatization	19.13	1.59		
deautomatization and recursion	24.75	9.55		
Woodcock reading passage comprehension (n=12)				
transition to self-assistance	7.71	1.80	.61	.63
self assurance	6.40	1.29		
internalization and automatization	6.50	2.47		
deautomatization and recursion	7.75	1.06		

*n=40, unless noted differently
significance tested at .007 level

The results indicate that there are no differences in student achievement for teachers according to the level of

zone proximal development self identified. The null hypothesis is retained.

H₀2: There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the zone of proximal development of their Reading Recovery teacher.

The number of discontinued students for each teacher was compared in a one-way ANOVA. Table 8 presents the results of that analysis. There are no differences. The null hypothesis is retained.

Table 8. Results of ANOVA Analyses for Null Hypothesis 2- Number of Discontinued Students Between Levels of Zone of Proximal Development in Their Teachers

	Mean	SD	F	p
transition to self-assistance	1.00	.89	.54	.66
self assurance	.64	.84		
internalization and automatization	.82	1.08		
deautomatization and recursion	1.25	1.26		

H₀3: Students who receive 60 lessons from a Reading Recovery teacher in training will perform as well as students receiving instruction from more experienced Reading Recovery teachers.

H₀4: More experienced Reading Recovery teachers will not discontinue more students from the program after 60 Reading Recovery lessons than Reading Recovery teachers in training.

A series of t-tests was used to test these two hypotheses. The Bonferroni procedure was used to control familywise error rate. An alpha significance level of .007 was used.

Table 9 presents the results of these analyses. Only one achievement indicator, letter identification, reached significance at the level required. Null hypothesis 3 is rejected, indicating that there is a significant difference between teachers in one achievement area. The number of discontinued students was not different between the two groups. Therefore, null hypothesis 4 is retained.

Table 9. Results of t-test Analyses for Null Hypotheses 3 and 4-Student Achievement Differences Between Teachers in Training and Trained Teachers*

Achievement Indicator	Mean	SD	t	p
Letter identification				
Teachers in training	20.65	8.58	3.44	.001
Trained teachers	12.74	5.68		
Word test				
Teachers in training	10.82	4.33	-.32	.75
Trained teachers	11.20	3.16		
Concepts about print				
Teachers in training	9.73	2.49	2.52	.016
Trained teachers	7.96	1.90		
Writing vocabulary				
Teachers in training	25.30	6.56	-.61	.55
Trained teachers	26.47	5.65		
Hearing and recording sounds in words				
Teachers in training	26.00	6.90	.05	.95
Trained teachers	25.90	4.48		
Text level				
Teachers in training	7.13	3.45	-.15	.89
Trained teachers	7.27	2.43		
Woodcock reading word identification				
Teachers in training (n=4)	20.85	7.65	.61	.56
Trained teachers (n=8)	18.36	6.18		
Woodcock reading passage comprehension				
Teachers in training (n=4)	7.52	1.93	.68	.51
Trained teachers (n=8)	6.85	1.45		
Number of discontinued students				
Teachers in training	.95	.95	.66	.51
Trained teachers	.75	.97		

* n=20 for each group (unless noted differently)
significance tested at .007 level

- H₀5(a): There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the age of their Reading Recovery teacher.
- H₀5(b): There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the age of their Reading Recovery teacher.
- H₀5(c): There is no correlation between the reading achievement of students who receive 60 Reading Recovery lessons and the number of years of teaching experience of their Reading Recovery teacher.
- H₀5(d): There is no correlation between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the number of years of teaching experience of their Reading Recovery teacher.

These four hypotheses were analyzed using Pearson Product Moment Correlation (Keppel, 1991). A matrix of the results is presented in Table 10. The achievement indicator, writing vocabulary, was significantly correlated with age (a low positive correlation). Woodcock's reading passage comprehension was correlated with both age and experience (moderate to high positive correlation). Therefore, both null hypotheses 5(a) and 5(c) are rejected.

There is no significant correlation between number of discontinued students and age and experience. Therefore, null hypotheses 5(b) and 5(d) are retained.

Table 10. Results of Pearson Product Moment Correlation Analyses for Null Hypotheses 5(a-d)-Correlation of Student Achievement and Number of Discontinued Students with Age and Years of Teaching Experience of Their Teachers*

	Pearson Product Moment Correlation	
	Age	Experience
Letter identification	-.11	.02
Word test	.19	.01
Concepts about print	-.14	.05
Writing vocabulary	.33**	.15
Hearing and recording sounds in words	.20	.06
Text level	.08	.14
Woodcock reading word identification (n=12)	.33	.48
Woodcock reading passage comprehension (n=12)	.64**	.58**
Number of discontinued students	-.03	.12

* n=40 (unless noted differently)

** $p < .05$

H₀5(e): There is no difference between the reading achievement of students who receive 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

H₀5(f): There is no difference between the number of Reading Recovery students discontinued after 60 Reading Recovery lessons and the educational level of their Reading Recovery teacher.

A series of t-tests was used to test these two hypotheses. The Bonferroni procedure was used to control familywise error rate. An alpha significance level of .007 was used. Table 11 presents the results of this analysis.

There are no significant differences. Null hypotheses 5(e) and 5(f) are retained.

Table 11. Results of t-test Analyses for Null Hypotheses 5(e) and 5(f)-Student Achievement Differences Between BA Trained Teachers and MA Trained Teachers*

Achievement Indicator	Mean	SD	t	p
Letter identification				
BA trained teachers	15.51	9.03	-.82	.42
MA trained teachers	17.66	7.58		
Word test				
BA trained teachers	11.00	3.36	-.02	.98
MA trained teachers	11.02	4.11		
Concepts about print				
BA trained teachers	8.06	2.54	-1.96	.06
MA trained teachers	9.48	2.05		
Writing vocabulary				
BA trained teachers	24.27	4.66	-1.54	.13
MA trained teachers	27.20	6.84		
Hearing and recording sounds in words				
BA trained teachers	24.32	6.49	-1.65	.11
MA trained teachers	27.27	4.80		
Text level				
BA trained teachers	7.31	2.90	.21	.84
MA trained teachers	7.11	3.05		
Woodcock reading word identification				
BA trained teachers (n=7)	18.15	6.60	-.46	.66
MA trained teachers (n=5)	19.94	6.78		
Woodcock reading passage comprehension				
BA trained teachers (n=7)	6.87	1.82	-.38	.71
MA trained teachers (n=5)	7.23	1.49		
Number of discontinued students				
BA trained teachers	.94	1.00	.56	.30
MA trained teachers	.77	.92		

* n for each group (unless noted differently) BA trained=18, MA trained=22. significance tested at .007 level

Summary

This analysis has shown that the teachers' level of ZPD made no significant difference in the students' achievement level nor in the number of students discontinued

from the Reading Recovery program. The teachers' educational level also showed no significant difference in student achievement nor in the number of students discontinued. The number of students discontinued was not significantly correlated to the age of the Reading Recovery teacher. The amount of Reading Recovery experience and total teaching experience showed no significant difference in the number of students discontinued from the program.

The analysis did show a significant difference between Reading Recovery teachers in training and experienced Reading Recovery teachers in one area of student achievement. The students of Reading Recovery teachers in training showed evidence of learning significantly more letters than students of experienced Reading Recovery teachers.

There was also a positive correlation between the age of the Reading Recovery teacher and the achievement of the students in the areas of writing vocabulary and Woodcock's passage comprehension. Total years of teaching experience was also positively correlated with Woodcock's passage comprehension.

CHAPTER V

DISCUSSION

Introduction

Effective teachers are essential in constructing learning environments for students. The teachers' role becomes even more critical when teaching students who are having learning difficulties in reading and writing (Allington & McGill-Franzen, 1989; Clay, 1985). To be effective teachers need opportunities to learn through constructive professional development that meets their learning needs (Grant, 1990; Pinnell, 1987).

Effectiveness can be measured in different terms. For the purpose of this study it was measured by the Reading Recovery teachers' ability to increase students' reading and writing abilities as evidenced by student achievement and their successful exit from the Reading Recovery program.

Effective teachers continue to be part of the learning community (National Board, 1999). One theory of learning is the constructivist theory. This learning theory emphasizes prior experience and prior knowledge. It also acknowledges that knowledge is developmental and is constructed uniquely and individually. Thus, teachers pass through zones of proximal development at different stages in their career.

Some teachers may need the support from a more knowledgeable other for a longer period of time. Others may need that support only on the most difficult learning situations. The teachers' level of ZPD may affect students' learning.

The amount of teaching experience may also affect student learning. It is believed by some researchers that teachers with more experiences will get higher student achievement (Postlewaite & Ross, 1992). Other researchers believe that experience is not a determining factor in student achievement (Britzman, 1987; Pinnell et al., 1995). Therefore, this study looked at the relationship between the amount of teaching experience and student achievement.

Discussion of Findings

The zone of proximal development is the difference between what one can do on his or her own and what one can do with a more knowledgeable other (Vygotsky, 1962, 1978). In this study no teacher thought they were in the first level which is "assistance by more capable other". This is different from past research (Lyons et al., 1993). In other qualitative studies Reading Recovery teachers in training felt a strong need to be assisted by their teacher leader. They were dependent on the leader for their learning.

Most of the teachers in training saw themselves in the "transition from assistance by others to self-assistance" as their level of ZPD. This could be because the teachers had completed one semester of training before completing the

questionnaire. The teacher leaders have begun to shift the responsibility for thinking and strategic problem solving about the Reading Recovery teaching skills to the teachers in training.

It was unexpected that 30% of the teachers in training saw themselves in "assistance provided by the self" as their level of ZPD. This infers that these teachers felt they are able to control their own learning and are able to make effective teaching decisions without the assistance of others. This was surprising because the teachers recorded this information during the middle part of their training year. They had not yet received the required year of training from their teacher leader. However, the constructivist learning theory postulates that learning is constructed uniquely and individually. This group of teachers may be progressing to the next ZPD stage faster than other teachers reported in the literature.

This finding could also be because some Reading Recovery teachers think of Reading Recovery as a list of procedures to follow as you would in other reading curriculums (Lyons et al., 1993). The teaching procedures in Reading Recovery are taught in the first semester. They are presented more in depth the second semester. The teachers in training seemed to think they knew the procedures well and therefore, do not need further assistance from their teacher leader.

The majority of trained Reading Recovery teachers indicated they felt they were either in "self-assistance" or "internalization and automatization" as their level of ZPD. Teachers may be more effective if they are in the "internalization and automatization" level. Reading Recovery teachers who are working at this "level of problem solving have internalized a repertoire of actions with which to react and make powerful decisions" (Lyons et al., 1993, p. 176). Thus, the trained teachers may not be operating at their most effective level. They are not continuing to learn and progress to the next level of ZPD. This could result in lower student achievement.

This was also the conclusion drawn by this research. Only 40% of the trained teachers saw themselves in the "internalization and automatization level". This could be the reason that the teachers' level of ZPD made no significant difference in the students' achievement level nor in the number of students discontinued from the Reading Recovery program.

During staff development training, Reading Recovery teachers spend a great deal of time generating and testing hypotheses. They also challenge each other's hypotheses based on their own knowledge and experience. The social interaction introduces multiple perspectives on learning and is a characteristic of constructivist learning theory (Burns et al., 1998). The teachers ranked these attributes of effective professional development from one to ten. The

lowest one ranked was testing hypotheses. It received the same mean ranking of seven for both groups of teachers. The trained teachers have had more experience at testing their hypotheses. Yet they do not feel they do this as much as the other indicators of effective teaching. It could be they do not feel they know how or are not given enough opportunity.

The indicator with the most difference between the two groups of teachers was the issue of reflecting on one's teaching experience. It was interesting to note that the teachers in training felt they did this more than the trained teachers. Schön (1983, 1987, 1991) believed effective teachers spent time reflecting on their teaching experiences. Based on these reflections, they adjusted their teaching methods to meet the students' learning needs. The time spent on reflection could have made the difference in two areas of student achievement for the Reading Recovery teachers in training. The students of teachers in training showed evidence of learning significantly more letters and being able to write more words than students of experienced Reading Recovery teachers. The teachers in training may be reflecting on their teaching and making more effective teaching decisions than the trained Reading Recovery teachers.

Britzman (1987) contended that reflection and learning were more critical processes than experience. This was evidenced in this study in the achievement areas of letter identification and writing vocabulary. The teachers in

training may also be spending more time on reflection because they are still trying to perfect their craft as a Reading Recovery teacher. Thus, they spend more time than the trained teachers in thinking about their teaching.

Dialogueing with other teachers was the highest ranked indicator. This was expected because the professional development model for Reading Recovery emphasizes teachers talking with each other. The demonstration lessons that occur behind the one-way glass provide a shared learning experience. While watching the lesson teachers are guided to state observations, make their meanings clear, and provide evidence of their hypotheses (Lyons et al., 1993).

The amount of teaching experience was analyzed to determine if it had a significant relationship to student achievement. The literature has shown that experience may or may not be a factor in student achievement (Brophy & Good, 1986; Pinnell et al., 1995; Wittrock, 1986). This study looked at student achievement in several areas: letter identification, reading isolated words, book knowledge, writing known words, hearing and recording sounds in words, reading continuous texts, and reading phrases and supplying the missing word.

The only areas that showed a significant difference based on years of Reading Recovery experience was letter identification and writing vocabulary. The students of Reading Recovery teachers in training showed evidence of learning significantly more letters and being able to write

more words independently than students of experienced Reading Recovery teachers. One reason for this may be because Reading Recovery training is an evolving process. As teacher trainers learn more about the reading and writing process, they stress different areas to the teacher leaders. Recently the instruction has centered more on teaching letter identification and student's writing vocabulary. Thus, teachers with experience were trained at a time when these two areas were not stressed to the same degree. This may have had an effect on the students' achievement results in these two areas.

The study also researched whether the amount of Reading Recovery teaching experience or the amount of total teaching experience made a difference in the number of students that were discontinued from the Reading Recovery program. Students were discontinued from the program when they were reading within the average range of their classroom. The number of students discontinued was not significantly different based on either Reading Recovery training level or total teaching experience.

This is a serious finding for the Reading Recovery program. It is the goal of the Reading Recovery training that teachers make more effective teaching decisions as they gain experience (Askew et al., 1998; Clay, 1993b). Teachers learn through their teaching. They build knowledge constructively while they teach (Lyons et al., 1993). Thus, they should become more effective as they gain experience.

This should produce higher student achievement and a higher percentage of students discontinued from the Reading Recovery program.

The current research did not show that this occurred with this group of teachers. There could be several reasons for this. One is that the amount of professional development decreases after the training year. Instead of meeting weekly, teachers attend learning sessions six times a year. Teachers may need to meet more often to hone their teaching skills.

Trained teachers are also visited less often by their teacher leader. Teachers are left on their own to solve more problems. The teacher leader does not observe as many lessons. Some teachers may only perform good teaching behaviors in response to supervisors observations (Lyons et al., 1993). This could be the result of teachers not grounding themselves in the underlying knowledge about how students learn. This could result in teachers making decisions based on the procedures in the guidebook and not the child. This could result in lower student achievement.

As discussed earlier, teachers may feel they learned all they needed to in the first year of training. They may not realize that Reading Recovery is more than a set of procedures. It takes time for teachers to get beneath the surface and become flexible in their learning (Lyons et al., 1993). At first, they may simply go through the motions and

procedures without fully understanding the reasons for their actions.

Even though total teaching experience did not significantly effect the number of students discontinued from the program, it did significantly correlate with the Woodcock's passage comprehension. On this subtest student read a phrase and supply the missing word. Most students were able to identify the word by looking at the accompanying picture. In Reading Recovery students are taught to use the picture as a source of information when reading difficult words. This could have affected the results.

Conclusions

This study has shown that teaching experience did not effect student achievement except in the areas of letter identification and writing vocabulary. The students of trained Reading Recovery teachers did not do significantly different than those students of teachers in training. There was also no significant difference in the number of students discontinued. This finding is important for the Reading Recovery community. Trained teachers should be making more effective teaching decisions and thus, be getting better results.

The ZPD also did not show a relationship with student achievement. It could be that teachers are not continuing to learn and thus are not operating in the most effective zone.

This could be the fault of the teacher leader. The teacher leader's goal is to help teachers become independent learners who will keep on seeking the answers they need. "The seeking is probably the most important component of the adult learning mode" (Lyons et al., 1993, p.51). Teacher leaders may need to spend more time instructing Reading Recovery teachers on how to reflect on and learn from their teaching.

Vygotsky's (1962, 1978) theory of learning suggested that learning never stops and is always recursive. It is through assistance by more knowledgeable others that learners are able to obtain new knowledge. Teacher leaders may need to stress to the Reading Recovery teachers that the learning never stops. To be effective, teachers must continue to learn through their teaching.

Constructivist learning theory is based on the principal of learning from experience. In this study, teachers with more experience were not more effective than teachers in training. This would indicate that teachers are not learning from their experiences to make more productive teaching decisions.

Knowledge is constructed uniquely and individually. This was shown in this study. Some of the teachers in training reported themselves to be on the same stage of ZPD as trained Reading Recovery teachers. Thus, teachers were progressing to the next level of ZPD at their own rate. They

were not bound by how much training or experience they have had. They were continuing to learn independently.

Constructivist learning theory states that learning is both active and reflective. This study showed the importance of that reflection. Teachers in training reported they reflected on their teaching more than trained teachers. This reflection could be the reason why students of teachers in training were significantly better at letter identification and writing vocabulary.

Implications for Educators

One important implication from this study is that trained Reading Recovery teachers are not getting the results they are expected to get. This could imply that a different level of support is needed for these teachers than is currently being offered. If trained teachers feel they are still in the self-assistance ZPD, they need to learn how to move into the internalization and automatization zone.

It appears that trained teachers feel they have a good understanding of how to use the guidebook and their own experience for making teaching decisions. However, they do not know how to match the learning needs of the students with the best Reading Recovery method. Clay (1993b) has stated that effective teachers make the most effective teaching decisions using the clearest examples. Teachers need to spend time reflecting on their decisions in order to

learn from them. It could be that for experience to be valuable, it must be examined critically (Britzman, 1987).

Another implication is that the amount of professional development may not be enough. Trained Reading Recovery teachers may need to attend training sessions more than six times a year. Currently trained Reading Recovery teachers attend professional sessions together. Some Reading Recovery teachers who attend may have two years of experience while others may have seven. It is possible that Reading Recovery teachers with two years of experience may need more professional development sessions than the more experienced Reading Recovery teachers.

Vygotsky (1978) contended that learning is more productive in one's zone of proximal development. Teachers in different zones may have different learning needs. Since learning is constructed uniquely and individually, the professional development may need to be presented differently based on the teachers' ZPD. Some teachers will need more assistance from a more knowledgeable person, such as the teacher leader. However, other teachers may not need that extra assistance.

Teacher leaders also make fewer visits to trained teachers. The Reading Recovery guidelines mandate two visits a year and others as needed. Some teachers may need more than that. Teachers construct learning at their own rate. The process is imperfect. Thus, some Reading Recovery teachers may need more individual instruction from the

teacher leader or a different type of instruction in order to learn how to be independent problem solvers. The individual visits would provide the opportunity for the teacher leader to meet the learning needs of that particular Reading Recovery teacher.

Recommendations for Future Research

This study compared the effectiveness of Reading Recovery teachers based on their years of experience and their stage in the ZPD. This study also examined the constructivist learning theory model that is used in Reading Recovery staff training. This study found there was not a significant difference in student achievement based on the years of teaching experience. The level of ZPD was also not a significant factor. In light of the findings of this study, the following recommendations are made for future research:

- 1) Conduct a longitudinal study that follows the same group of teachers over a three year period. Their students' records could be examined to see if the teachers were able to discontinue more students from the Reading Recovery program as they gained experience.

- 2) A qualitative study is recommended in order to examine more closely the teaching decisions made during the Reading Recovery lessons. Through video tape, teacher transcripts, and observations, the researcher could analyze

the difference in teaching decisions between the more and less experienced teachers.

3) The same study could be conducted with a larger and different teaching sample. A larger sample would provide the opportunity for teachers to be grouped by the specific number of years of experience in Reading Recovery. This could show whether there is a marked difference in effectiveness between the second and fourth year of teaching.

4) The professional development model is the cornerstone of Reading Recovery. A study could be conducted to see if altering the current format would affect teacher effectiveness. A comparison could be made between Reading Recovery teachers who attend two years of training with those who attend the customary one year. This could show whether more teacher training impacted student achievement.

5) One could further study the relationship between the age of the teacher and the teachers' ZPD by using a larger sample size. Teachers could be grouped according to their age or according to their level of ZPD.

6) An area of interest may also be the issue of teachers using self-report in identifying their level of ZPD. It may be interesting to see if there is a relationship between what the teacher leader believes the teachers' ZPD is and what the teacher reports.

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APPENDICES

Appendix A
Observation Survey and Woodcock Reading
Mastery Testing Forms

LETTER IDENTIFICATION SCORE SHEET

Name: _____ Age: _____ Date: _____
 Recorder: _____ Date of Birth: _____

TEST SCORE:

STANINE GROUP:

	A	S	Word	I.R.		A	S	Word	I.R.
A					a				
F					f				
K					k				
P					p				
W					w				
Z					z				
B					b				
H					h				
O					o				
J					j				
U					u				
					a				
C					c				
Y					y				
L					l				
Q					q				
M					m				
D					d				
N					n				
S					s				
X					x				
I					i				
E					e				
G					g				
R					r				
V					v				
T					t				
					g				

Confusions:

Letters Unknown:

Comment:

Recording:
 A Alphabet response:
 tick (check)
 S Letter sound response:
 tick (check)
 Word Record the word the
 child gives
 IR Incorrect response:
 Record what the child
 says

TOTALS **TOTAL SCORE**

APPENDIX 1

OHIO WORD TEST SCORE SHEET

TEST SCORE

/20

Date: _____

Name: _____

School: _____

Recorder: _____

Classroom Teacher: _____

Record incorrect responses.

Choose appropriate list of words.

✓ (Checkmark) Correct Response

• (Dot) No Response

	LIST A	LIST B	LIST C
Practice words	can	in	see
	and	ran	big
	the	it	to
	pretty	said	ride
	has	her	him
	down	find	for
	where	we	you
	after	they	this
	let	live	may
	here	away	in
	am	are	at
	there	no	with
	over	put	some
	little	look	make
	did	do	eat
	what	who	an
	them	then	walk
	one	play	red
	like	again	now
	could	give	from
	yes	saw	have

CONCEPTS ABOUT PRINT SCORE SHEET

Date: _____

Name: _____

Age: _____

TEST SCORE:

/24

Recorder: _____

Date of Birth: _____

STANINE GROUP:

--

PAGE	SCORE	ITEM	COMMENT
Cover		1. Front of book	
2/3		2. Print contains message	
4/5 4/5 4/5 4/5		3. Where to start 4. Which way to go 5. Return sweep to left 6. Word by word matching	
6		7. First and last concept	
7		8. Bottom of picture	
8/9		9. Begin 'The' (<i>Sand</i>) or 'I' (<i>Stones</i>) bottom line, top OR turn book	
10/11		10. Line order altered	
12/13 12/13 12/13		11. Left page before right 12. One change in word order 13. One change in letter order	
14/15 14/15		14. One change in letter order 15. Meaning of ?	
16/17 16/17 16/17 16/17		16. Meaning of full stop 17. Meaning of comma 18. Meaning of quotation marks 19. Locate M m H h (<i>Sand</i>) OR T t B b (<i>Stones</i>)	
18/19		20. Reversible words <i>was, no</i>	
20 20 20 20		21. One letter: two letters 22. One word: two words 23. First and last letter of word 24. Capital letter	

WRITING VOCABULARY OBSERVATION SHEET

Date: _____

Name: _____ Age: _____

Recorder: _____ Date of Birth: _____

TEST SCORE:

(Fold heading under before child uses sheet)

STANINE GROUP:

COMMENT

HEARING AND RECORDING SOUNDS IN WORDS (DICTATION TASK)
OBSERVATION SHEET

Date: _____

Name: _____ Age: _____

Recorder: _____ Date of Birth: _____

TEST SCORE: /37

STANINE GROUP:

(Fold heading under before child uses sheet)

COMMENT

RUNNING RECORD SHEET

Name: _____ Date: _____ D. of B.: _____ Age: _____ yrs _____ mths
 School: _____ Recorder: _____

Text Titles	<u>Running words</u> Error	Error rate	Accuracy	Self-correction rate
1. Easy _____	_____	1: _____	_____ %	1: _____
2. Instructional _____	_____	1: _____	_____ %	1: _____
3. Hard _____	_____	1: _____	_____ %	1: _____

Directional movement _____

Analysis of Errors and Self-corrections

Information used or neglected [Meaning (M) Structure or Syntax (S) Visual (V)]

Easy _____

Instructional _____

Hard _____

Cross-checking on information (Note that this behaviour changes over time)

Analysis of Errors and Self-corrections
 (see *Observation Survey* pages 30-32)

Page		E	SC	Information used	
				E MSV	SC MSV

TEST RECORD

Woodcock Reading Mastery Tests—Revised

Richard W. Woodcock

Name _____ Sex: M F Birth Date _____ Age _____

Grade _____ Examiner _____ Testing Date _____

Teacher/Department _____ School/Agency _____ City _____ State _____

Reason for Evaluation _____

Adult Subjects: Education _____ Occupation _____

Do these WRMT-R results provide a fair representation of the subject's present functioning in reading? Yes No If not, what is the reason for questioning the results? _____

INSTRUCTIONAL LEVEL PROFILE

(Instructional Range: Easy ← Grade Equivalent → Difficult)

Word Identification		K.0 ^M	K.5	1	1.2	1.5	2	2.5	3	3.5	4	5	6	7	9	11	13	15	16.9 ^M	16.9 ^F	16.9 ^M
Raw			0	3	7	14	26	36	46	52	58	64	72	80	86	92	97	102	106		
RPI	/90		0	3	7	14	26	36	46	52	58	64	72	80	86	92	97	102	106		
Word Attack		K.0 ^M	K.5	1	1.2	1.5	2	2.5	3	3.5	4	5	6	7	9	11	13	15	16.9 ^M	16.9 ^F	16.9 ^M
Raw			0	2	4	8	12	16	20	24	28	31	33	35	36	38	39	40	42	45	
RPI	/90		0	2	4	8	12	16	20	24	28	31	33	35	36	38	39	40	42	45	
Word Comprehension		K.0 ^M	K.5	1	1.2	1.5	2	2.5	3	3.5	4	5	6	7	9	11	13	15	16.9 ^M	16.9 ^F	16.9 ^M
W			418	430	450	470	480	490	500	510	520	530	540	550	560	570					
RPI	/90		418	430	450	470	480	490	500	510	520	530	540	550	560	570					
Passage Comprehension		K.0 ^M	K.5	1	1.2	1.5	2	2.5	3	3.5	4	5	6	7	9	11	13	15	16.9 ^M	16.9 ^F	16.9 ^M
Raw			0	2	5	9	14	20	25	30	34	38	42	46	51	55	60	65	68		
RPI	/90		0	2	5	9	14	20	25	30	34	38	42	46	51	55	60	65	68		
TOTAL FULL SCALE		K.0 ^M	K.5	1	1.2	1.5	2	2.5	3	3.5	4	5	6	7	9	11	13	15	16.9 ^M	16.9 ^F	16.9 ^M
W			400	420	440	460	480	490	500	510	520	530	535	545	555						
RPI	/90		400	420	440	460	480	490	500	510	520	525	535	545	555						



WORD IDENTIFICATION

Basal the first 6 consecutive correct responses
that begin with the first item on an easel page.

Ceiling the last 6 consecutive failed responses
that end with the last item on an easel page.

Score (1 or 0)	Error Response	Score (1 or 0)	Error Response	Score (1 or 0)	Error Response
1. ___ go	_____	38. ___ wonderful	_____	74. ___ hindrance	_____
2. ___ the	_____	39. ___ should	_____	75. ___ zodiac	_____
3. ___ me	_____	40. ___ money	_____	76. ___ plausible	_____
4. ___ not	_____	41. ___ lemon	_____	77. ___ limousine	_____
5. ___ red	_____	42. ___ without	_____	78. ___ embassy	_____
6. ___ box	_____	43. ___ exit	_____	79. ___ velocity	_____
7. ___ look	_____	44. ___ chew	_____	80. ___ abdominal	_____
8. ___ do	_____	45. ___ question	_____	81. ___ alienate	_____
9. ___ big	_____	46. ___ piece	_____	82. ___ proximity	_____
10. ___ yes	_____	47. ___ strange	_____	83. ___ amidst	_____
11. ___ this	_____	48. ___ brought	_____	84. ___ baroness	_____
12. ___ bee	_____	49. ___ cattle	_____	85. ___ vivacious	_____
13. ___ green	_____	50. ___ groan	_____	86. ___ lethargic	_____
14. ___ fly	_____	51. ___ dangerous	_____	87. ___ transient	_____
15. ___ hot	_____	52. ___ journey	_____	88. ___ edifice	_____
16. ___ bus	_____	53. ___ major	_____	89. ___ ptomaine	_____
17. ___ ten	_____	54. ___ garage	_____	90. ___ verbatim	_____
18. ___ some	_____	55. ___ cruel	_____	91. ___ itinerary	_____
19. ___ here	_____	56. ___ wreck	_____	92. ___ jujitsu	_____
20. ___ black	_____	57. ___ entrance	_____	93. ___ grandiose	_____
21. ___ bear	_____	58. ___ budget	_____	94. ___ amiable	_____
22. ___ old	_____	59. ___ pioneer	_____	95. ___ xerography	_____
23. ___ house	_____	60. ___ inquire	_____	96. ___ narcissism	_____
24. ___ eat	_____	61. ___ wealth	_____	97. ___ subsidiary	_____
25. ___ leg	_____	62. ___ allowable	_____	98. ___ quixotic	_____
26. ___ away	_____	63. ___ ache	_____	99. ___ obelisk	_____
27. ___ time	_____	64. ___ vacant	_____	100. ___ consanguinity	_____
28. ___ new	_____	65. ___ quench	_____	101. ___ déclassé	_____
29. ___ people	_____	66. ___ extinguish	_____	102. ___ psychical	_____
30. ___ sheep	_____	67. ___ prudent	_____	103. ___ zoophile	_____
31. ___ everyone	_____	68. ___ circumstance	_____	104. ___ epigraphist	_____
32. ___ date	_____	69. ___ occasionally	_____	105. ___ facetious	_____
33. ___ warm	_____	70. ___ flamboyant	_____	106. ___ shillelagh	_____
34. ___ low	_____	71. ___ epidemic	_____		
35. ___ family	_____	72. ___ tranquility	_____		
36. ___ river	_____	73. ___ sympathize	_____		
37. ___ great	_____				

Test 3
Raw
Score



3

TEST 6

PASSAGE COMPREHENSION

Basal the first 6 consecutive correct responses
that begin with the first item on an easel page.

Ceiling the last 6 consecutive failed responses
that end with the last item on an easel page.

Sample A. _____ ball

Score (1 or 0)	Error Response
1. _____ water	_____
2. _____ box	_____
3. _____ garden	_____
4. _____ head	_____
5. _____ chair	_____
6. _____ under	_____
7. _____ water	_____
8. _____ rug	_____
9. _____ am	_____
10. _____ at	_____
11. _____ arms	_____
12. _____ are	_____
13. _____ years	_____
14. _____ are	_____
15. _____ he	_____
16. _____ opened	_____
17. _____ on	_____
18. _____ four	_____
19. _____ hair	_____
20. _____ brush	_____
21. _____ book	_____
22. _____ far	_____
23. _____ stop	_____
24. _____ flag	_____
25. _____ paint	_____
26. _____ small	_____
27. _____ painted	_____
28. _____ bikes	_____
29. _____ weasel	_____
30. _____ clothes	_____
31. _____ words	_____
32. _____ drift	_____

Score (1 or 0)	Error Response
33. _____ not	_____
34. _____ kitchen	_____
35. _____ water	_____
36. _____ living	_____
37. _____ center	_____
38. _____ English	_____
39. _____ tea	_____
40. _____ away	_____
41. _____ brass	_____
42. _____ state	_____
43. _____ life	_____
44. _____ rainfall	_____
45. _____ frozen	_____
46. _____ war	_____
47. _____ dot	_____
48. _____ ripen	_____
49. _____ relaxed	_____
50. _____ in	_____
51. _____ France	_____
52. _____ Charlemagne	_____
53. _____ purpose	_____
54. _____ farmer	_____
55. _____ business	_____
56. _____ company	_____
57. _____ lakes	_____
58. _____ rest	_____
59. _____ acid	_____
60. _____ writer's	_____
61. _____ city	_____
62. _____ partners	_____
63. _____ from	_____
64. _____ cannot	_____
65. _____ source	_____
66. _____ definition	_____
67. _____ merit	_____
68. _____ eliminated	_____

Test 6
Raw
Score



Appendix B
Teacher Questionnaire

Reading Recovery® Teacher Questionnaire

1. During the discussions while watching behind the glass, a lot of learning and problem solving is taking place. In the scale below, some of that learning is grouped by category. **Please mark the scale according to how the items are reflected in your learning during training classes or during continuing contact.**

	Never					All the time				
	1	2	3	4	5	6	7	8	9	10
Problem solve student problems	1	2	3	4	5	6	7	8	9	10
Generate hypotheses	1	2	3	4	5	6	7	8	9	10
Test hypotheses	1	2	3	4	5	6	7	8	9	10
Challenge the thoughts of others	1	2	3	4	5	6	7	8	9	10
Reflect on teaching experiences	1	2	3	4	5	6	7	8	9	10
Dialogue with other RR teachers	1	2	3	4	5	6	7	8	9	10

2. The next question is a bit difficult. I will try my best to explain it. There are five levels of teacher self-regulation. This is what Clay would call a self-extending system of teaching or learning. Look at each category and the description. **Mark which one best describes you at this time.**

_____ 1) **assistance provided by more capable other**

{This means that you are learning about Reading Recovery and you depend on someone else to teach you the procedures and help a great deal in problem solving.}

_____ 2) **transition to self-assistance**

{This means that you are still depending on the teacher leader for most of your information. Your tendency is to ask your teacher leader or another trained RR teacher for help instead of problem solving it by yourself. You are on your way to becoming independent, but aren't there quite yet.}

_____ 3) **assistance to self**

{This means you feel capable problem solving by yourself. By analyzing the students' records and by using the Guidebook, you feel comfortable in making most of your teaching decisions.}

_____ 4) **internalization and automatization**

{This means that you are feeling comfortable with the teaching procedures and the prompts from the Guidebook. You have internalized the procedures and are able to make quick decisions. You are able to use the level of prompt needed for each child. You are comfortable with the Reading Recovery language and procedures.}

_____ 5) **deautomatization and recursion**

{At this stage teachers are able to think differently than before when posed difficult teaching decisions. Teachers will refer back to the Guidebook and to their colleagues for information. However, the problem solving tends to be at a higher level than before.)

3. What was your prior teaching position(s) before becoming a Reading Recovery teacher? Please list all positions and how long you taught at each position.

Position	Years
_____	_____
_____	_____
_____	_____

4. Besides teaching Reading Recovery, what other teaching responsibilities do you currently have?

5. What year did you complete your RR training? _____

6. What is your highest degree? _____

7. In what field is this degree? _____

8. What is your gender?

_____ 1) Male _____ 2) Female

9. What is your ethnic background? (*This information will be used only for descriptive purposes for this study.*)

_____ 1) African American _____ 2) Caucasian _____ 3) Hispanic

_____ 4) Asian _____ 5) Native American _____ 6) Other

10. What is your age? _____

11. What is your teacher code? _____

Appendix C
Parent/Teacher Consent Forms

Consent Form

Dear Parent/Guardian:

I am a Reading Recovery Teacher Leader in the Bartlesville School District. I also work with teachers in Wagoner, Ponca City, Nowata and Claremore. As part of my dissertation work for Oklahoma State University, I am inviting teachers to be part of my study. The purpose of my research is to see if teachers with more experience are able to get different results in Reading Recovery.

Your child is already a part of Reading Recovery and will continue working with your child's teacher. To be in the program each child was given a reading test called the Observation Survey. I would like to do an additional reading test with your child called the Woodcock Johnson. The test will take approximately 15 minutes. I will make arrangements with your child's teacher to schedule the testing during the school day. During the test, I will ask your child to read a list of words and to read short phrases. After your child has completed sixty Reading Recovery lessons, I will test your child again with the same reading tests.

I will be using the results of this study to describe the effectiveness of Reading Recovery teachers based on their years of experience. The goal of Reading Recovery training is that teachers get better results as they gain experience. For instance, students with a first year Reading Recovery teacher may not progress as quickly as students with a fifth year Reading Recovery teacher. I want to determine if there is a difference and to what extent. If you would like more information, you may contact me (918-331-0465) or Gay Clarkson, IRB Executive Secretary, 305 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number: (405)744-5700.

I would appreciate it if you would allow your child to be part of my study. If I have your permission, please sign and return this form to your child's classroom teacher or Reading Recovery teacher as soon as possible.

All responses will be kept anonymous. If you have questions or concerns about this project I can be reached at school (918-336-8384) or at home (918-331-0465). My advisor at OSU is also available to answer any questions you may have about this study. Her name is Dr. Barbara Wilkinson. She may be contacted at her office. The number is (405)744-7125. The address is School of Curriculum and Educational Leadership, 228 Willard Hall, Stillwater, Ok 74078.

You may have your child withdraw from this study at any time without any penalty. You may do so by calling me or by sending a letter to my address: Teresa Fugate, 4729 SE Amherst, Bartlesville, Ok 74006.

Thank you for your time and consideration.

Sincerely,

Teresa Fugate
Reading Recovery Teacher Leader

Child's Name _____

Check one:

Yes, my child may participate _____

No, my child may not participate _____

Parent/Guardian's
Signature _____

Date _____

Researcher, Teresa Fugate

Consent Form

Dear Reading Recovery Teacher:

I am a Reading Recovery Teacher Leader for Bartlesville, Wagoner, Nowata, Ponca City and Claremore. As part of my dissertation work for OSU I am inviting Reading Recovery teachers to be part of my study. The purpose of my study is to see if teachers with more experience are able to get different results in Reading Recovery.

I will be grouping teachers according to their years of experience in Reading Recovery. Each of your four students will be given the Woodcock Reading Achievement Test and the Observation Survey as a pre and post test. The Woodcock Reading test will take approximately 30 minutes. It consists of words and short phrases the child is asked to read. The post tests will be given after sixty Reading Recovery lessons.

There will also be a demographic form to complete. It will describe the population used in this study.

Your help will be greatly appreciated. Your name will be kept confidential. You may see the aggregated results across all teachers as well as your own personal results at the close of the study.

Please sign and return this form to me as soon as possible. If you have questions or concerns about this study, I can be reached at school (918-336-8384) or at home (918-331-0465). My dissertation advisor at OSU is also available to answer any questions. She may be contacted at 405-744-7125. The address is School of Curriculum and Educational Leadership, 228 Willard Hall Stillwater, Okla. 74078. You may also contact Gay Clarkson, IRB Executive Secretary, 305 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number: (405)744-5700.

You may withdraw from the study without penalty by notifying me by phone (918-331-0465) or by mail. My address is Teresa Fugate, 4729 SE Amherst, Bartlesville, OK 74003.

Thank you for your time and help.

Sincerely,

Teresa Fugate
Reading Recovery Teacher Leader

I have read and fully understand the consent form. I sign it freely and voluntarily.

Teacher's Name _____

Check one:

Yes, I will participate in the research study _____

No, I will not participate in the research study _____

Teacher's Signature _____

Date _____

Researcher, Teresa Fugate

Appendix D
Oklahoma State University
Institutional Review Board for
Human Subjects Research Form

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

09-21-98

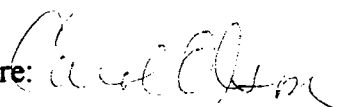
IRB #: ED-99-016

**Proposal Title: COMPARISON OF READING RECOVERY TEACHERS BASED
ON YEARS OF EXPERIENCE**

Principal Investigator(s): Barbara Wilkinson, Teresa A. Fugate

Reviewed and Processed as: Expedited with Special Population

Approval Status Recommended by Reviewer(s): Approved

Signature: 

Date: October 2, 1998

Director of University Research Compliance
cc: Teresa A. Fugate

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Teresa Fugate

Candidate for the Degree of
Doctor of Philosophy

Thesis: ANALYSES OF READING RECOVERY® TEACHERS BASED ON
PROFESSIONAL DEVELOPMENT STAGES AND YEARS OF EXPERIENCE

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in Bartlesville, Oklahoma, On May
8, 1959, the daughter of Willard and Lenora
Fugate.

Education: Graduated from Caney Valley High School,
Ramona, Oklahoma in May 1977; received Bachelor of
Science degree in Special Education from Oklahoma
State University, Stillwater, Oklahoma in May
1981; received Master of Science degree in Special
Education from Oklahoma State University in July
1987. Completed the requirements for the Doctor
of Philosophy degree with a major in Applied
Behavioral Studies at Oklahoma State University in
May 1999.

Professional Experience: Employed by Nowata Public
Schools as a Special Education Teacher; Olive
Public Schools as a Special Education Teacher;
Bartlesville Public Schools as a Special Education
Teacher and Reading Recovery Teacher Leader;
Oklahoma State University as a Graduate Teaching
Assistant.

Professional Memberships: International Reading
Association, Reading Recovery Council of North
America.