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Reading First Teachers' Knowledge of English Phonology and Attitudes toward Reading Instruction

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RUNNING HEAD: TEACHERS' KNOWLEDGE AND ATTITUDES

Reading First Teachers' Knowledge of English Phonology and Attitudes toward Reading

Instruction

Courtney Richmond

Rochester Institute of Technology

Abstract

The Reading First grant requires teachers to go through professional development and education about reading instruction to improve their teaching methods. The purpose of this study is to determine whether teachers' knowledge of the English language and their attitudes toward explicit reading instruction improved after working in schools that received the Reading First grant. Seventy-six teachers from four schools that received the Reading First grant were surveyed to determine their knowledge of English phonology and attitudes toward explicit and implicit reading instruction. Reading First teachers had more knowledge of English phonology than other teachers, but did not differ in their attitudes. There was no difference in knowledge or attitudes between general and special educators. The years of experience had no relationship to teachers' knowledge or attitudes. However, the older the teachers were, the more positive their attitudes were toward explicit code instruction. Finally, teachers with more knowledge had more positive attitudes toward explicit instruction.

CHAPTER 1

Statement of the Problem

Perhaps the most important basic skill that every child needs to be successful both in school and in society is the ability to read. Children who do not acquire this skill will suffer not only in their academics, as learning requires the ability to take in written information, but also in their jobs and in everyday life. Illiterate adults are more likely to have health problems, a lower life expectancy and financial insecurity (Roman, 2004). A large proportion of students are reading below grade level in school; for example, as many as 40% of fourth grade students (National Assessment of Educational Progress, 1997). In 2005, 36% of fourth grade students did not read at a "basic" level of performance which is defined as "partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade" (Perie, Grigg, & Donahue, 2005, p. 2). Only 31% of fourth grade students read at a proficient level of performance. In 2005, 27% of eighth grade students did not read at a basic level of performance (Perie, Grigg, & Donahue, 2005), which is a minute improvement from the fourth grade percentages. These statistics have not improved more than 2 percentage points since 1971.

The prevalence of reading disabilities is estimated to be around 75% to 85% of all learning disabilities (Moats, 1994). Due to the dismal national statistics, having all students read by the end of third grade has been a national goal for the past decade (Bursuck, Munk, Nelson & Curran, 2002). Special education and related services have failed to effectively remediate reading problems, as shown by the 75% of students who

had read below grade level in third grade still read below grade level at the end of high school (Francis, Shaywitz, Steubing, Shaywitz & Fletcher, 1996).

Stanovich (1986) described the "Matthew Effect," where students who develop early literacy skills can continuously grow while those who do not have such skills fall progressively further behind. Students with reading difficulties cannot use reading to acquire new information which greatly hinders their learning in every area (Bos, Mather, Narr & Babur, 1999). With the overwhelming number of children not reading at grade level, improving children's reading has become a national concern.

Phonemic Awareness and Phonics

Reading is broken down into five major components that need to be learned for a person to be a successful reader. One component is phonemic awareness, which is the ability to hear and manipulate speech sounds (National Reading Panel, 2000). Phonemic awareness is one of the earliest skills that needs to be taught to help students learn to read. Phonemic awareness instruction has been found to increase students' reading growth (Torgesen & Mathes, 2002). Children who have not mastered the skill of phonemic awareness are more likely to have difficulties decoding words, which is the most common type of reading disability (Lyon & Moats, 1997). Children who have difficulties with phonemic awareness tasks need direct and explicit instruction in this area (Lyon, 1998a). Without this type of instruction an expected 20% of children will not learn how to read (Torgesen & Mathes, 2002).

Phonics instruction teaches students the letters that correspond with individual sounds (National Reading Panel, 2000). Phonics instruction helps children use the alphabetic principle, the idea that there is a predictable relationship between written

letters and spoken sounds (Armbruster, Lehr & Osborn, 2001). Understanding the alphabetic principle allows students to decode unfamiliar words. Systematic and direct instruction in phonics significantly improves word recognition, spelling and reading comprehension for kindergarten and first grade students (Lyon & Moats, 1997).

Explicit Reading Instruction and Teacher Attitudes

Explicit reading instruction is a teaching method that focuses on directly teaching discrete reading skills to students. Implicit reading instruction is the converse of explicit instruction, where students are not directly taught the underlying reading skills. Educators who favor an implicit approach propose that children can learn to read by using context clues and determining what makes sense in the sentence. Yet, content words, those most important to the meaning of the text, can only be predicted from context around 20% of the time (Gough, Alford & Holley-Wilcox, 1981). Rather, good readers use context to promote comprehension of the text, not to read unfamiliar words (Lyon, 1998b). This suggests that direct instruction in phonemic awareness and decoding is necessary for many students in developing word reading and comprehension.

If teachers do not believe in explicit instruction, it is highly unlikely they will teach in that manner. Teachers' attitudes are formed early and tend to persist, even in the face of contradictory evidence (Malouf & Schiller, 1995). Even though they may be difficult to change, there is evidence that attitudes influence behavior, thus attitudes are an important factor to consider (Guskey, 1986). If teachers' attitudes are negative toward explicit instruction, efforts will need to focus on improving the attitudes before expecting teachers to use explicit instruction methods with fidelity.

Teacher Knowledge

A growing body of research supports that significant improvements in reading and pre-reading skills can be made when teachers use a direct and systematic approach to teaching phonemic awareness (Foorman, Francis, Fletcher, Schatschneider & Mehta, 1998; Torgesen, Wagner, Rashotte, Rose, Lindamood, Conway, & Garvan, 1999; Torgesen, 2000). However, the question arises as to whether teachers are prepared and knowledgeable enough in the area of phonemic awareness to adequately teach students in an explicit manner. One potential reason teachers may not be prepared is because training programs widely vary in their focus and may not sufficiently cover this area in the curriculum (Moats, 1994). There may be a lack of professional development opportunities for teachers who did not learn about phonemic awareness and phonics in their training programs. School districts may not have the money to provide the intensive training some teachers need. Furthermore in the past few decades educators have heard conflicting messages about what is good reading instruction. Teachers may believe that phonemic awareness and phonics instruction is the "new fad" and will pass quickly so it is not important to learn about and then teach. The research supporting these practices may not be fully disseminated to those who need the information the most.

Early research in this area found that teachers did not even know what the term phonemic awareness meant; let alone how to teach it (Troyer & Yopp, 1990). As research in this area has increased dramatically in the past decade and with the nation's eye looking at reading, it is possible that teachers have gained knowledge and insight in the area of phonemic awareness. Unfortunately, more recent studies taking place within the past five years have shown that general educators in the primary grades still do not

have adequate knowledge of phonemic awareness (Bos, Mather, Narr & Babur, 1999; McCutchen & Berninger, 1999; Bos, Mather, Dickson, Podhajski & Chard, 2001; McCutchen, Harry, Cunningham, Cox, Sidman & Covill, 2002).

Special educators tend to have more knowledge of phonemic awareness than general educators (Bos, Mather, Dickson, Podhajski & Chard, 2001). Special educators may be more prepared to instruct students with dyslexia and other reading problems than regular educators. Yet, the special educators still appear to have limited understanding about the structure of language and the methods needed to teach in an explicit manner.

Professional Development

As there is a disturbing lack of knowledge on the part of teachers in the area of phonemic awareness, a method of dispersing the knowledge of what phonemic awareness is and how it should be taught is necessary for the teachers who clearly need it. The National Reading Panel (2000) stated that more research needs to be done to determine whether professional development works and in what manner it should be delivered. Professional development is thought to be more effective when teachers are trying to solve everyday problems, rather than participating in a one day workshop (Schon, 1987). The most common model for school districts to provide professional development is through short workshops or sessions rather than a long term focus on a particular area. Research has shown that collaborative year long professional development produces gains in teachers' knowledge and practices (Bos, Mather, Narr & Babur, 1999). With these results, it would be beneficial for schools to utilize a model other than the one day workshop.

Very little data has been collected on teacher knowledge of phonemic awareness following professional development in the area. In one study the researchers did collect data after teachers participated in a professional development model. They found that teachers' attitudes toward explicit instruction became more positive and they gained knowledge of phonology (Bos, Mather, Narr & Babur, 1999). This was a two-and-a-half week long summer course with year long follow-up and collaboration between the teachers and trainers. The trainers were researchers and educators working in a university that provided the funding. This is not a typical professional development model that is found in public schools. It would be more difficult to implement this model without university funding and trainers with a high level of knowledge and expertise in reading, teaching, and research. Districts likely could find private sources to provide the funding, however the district would need a strong commitment to professional development and understand the benefits this model would provide in order to spend their limited resources.

No Child Left Behind

The current national interest in reading spans from reading instruction to student reading outcomes. The recent impetus in this area has led to the passage of the No Child Left Behind (NCLB) Act signed into law in January 2002 (US Department of Education, 2002). Five key concepts that underlie the various reading programs are outlined in NCLB. The first is to have all children reading by third grade. This in itself shows the absolute need to research reading instruction and what variables will increase children's reading. The second concept is to close the achievement gap between high and low performing children. Thus, it is vital to research what variables increase reading for low

achieving students, including minority students and those who are disadvantaged. The third concept is that adequate yearly progress must be made, increasing the accountability of schools and teachers. Now more than ever it is necessary to determine how money should be spent to increase students' reading. This includes money for professional development which means the success of professional development must be demonstrated in the area of reading instruction. The fourth concept is annual student testing, which again relates to accountability. The final concept is using scientifically based reading research, of which there are still holes in the area of teacher variables that affect student outcomes. As NCLB specifically calls for highly qualified teachers in every classroom, this is a central focus for continued research (Smith, Desimone & Ueno, 2005).

One reading program funded by NCLB is Reading First (US Department of Education, 2002). Reading First focuses on students in kindergarten through third grade in districts and schools with a high percentage of students reading below grade level and living in poverty. Reading First provides grant money to these schools to use for materials, professional development and teacher support to develop the skills necessary to improve instruction that focuses on the five reading elements, and uses scientifically-based programs, and assessment. New York received $129 million in 2003 and is set to receive a total of $460.8 million in Reading First funds over the next six years (US Department of Education, 2003). With an estimated $5 billion designated to Reading First, it is apparent that having this program be successful is a top concern and research should be completed to determine whether the cost is worth the outcomes (Kauerz, 2002).

One type of professional development required by Reading First is the use of peer coaching which groups teachers with similar responsibilities together to share their experiences and assist each other in problem solving (Denton, 2003). Moreover, the entire faculty and administrators are required to go through the same professional development so there is a common knowledge base, though whether this is an adequate knowledge base has yet to be determined. It is also recommended by lawmakers that professional development include opportunities for teachers to apply the information to solve problems of their actual students.

Purpose of Study

With the amount of Reading First money that is being given to schools with impoverished and below grade level readers, it is assumed that the professional development is increasing both teacher knowledge and student reading outcomes. Although student outcomes are being measured, teachers' knowledge of phonemic awareness and attitudes toward explicit code instruction have not yet been reported in any published study to date. Thus to find out whether professional development truly increases teachers' knowledge of English phonology and reading instruction and their attitudes toward instruction, a systematic study needs to be done. Furthermore, the possible teacher variables like years of experience, type of teacher education program, and whether the teacher is a general or special educator, can be assessed to determine if these affect knowledge and attitudes as well. The following research questions were addressed in this study:

1. Do teachers who have completed intensive professional development programs have more knowledge of English phonology and more positive attitudes toward

explicit reading instruction than teachers who have not been through a professional development program?

2. Do special educators have more English phonology knowledge and more positive attitudes toward explicit reading instruction than general educators?

3. Do teachers with more experience have more English phonology knowledge and more positive attitudes toward explicit reading instruction than those teachers with less experience?

4. Do teachers with more English phonology knowledge have more positive attitudes toward explicit reading instruction?

CHAPTER 2

Literature Review

There is a broad foundation of research on reading instruction and student outcomes. However, the research on the best methods to deliver this information to the teachers, and the effectiveness of that delivery, is limited. This chapter will summarize the literature on reading instruction and the effect instruction has on student outcomes. Then research on educating teachers will be examined to determine what gaps are still present and how the present study addresses those gaps.

The Five Big Ideas in Reading

The National Reading Panel (NRP, 2000) was created to examine the scientific research on reading and its implications for instruction. The NRP identified five "big ideas" of early literacy including phonemic awareness, alphabetic principle, accuracy and fluency, vocabulary and comprehension. Phonemic awareness is the ability to hear and manipulate sounds which is necessary for readers to recognize how letters represent sounds and will help readers decode unfamiliar words. The alphabetic principle is connecting speech to print, this letter-sound correspondence is a skill used in word identification (Juel, 1991). Accuracy and fluency refer to the ease and speed of reading words in connected text; once a reader is accurate and fluent they can focus on gaining meaning from the print (Kuhn & Stahl, 2000). Vocabulary is the ability to use and understand words to convey meaning; having a large vocabulary is correlated with reading comprehension (Anderson & Nagy, 1992). Finally, comprehension is the ability to understand written material (NRP, 2000). This allows a child to gain information through print.

Phonemic Awareness

Phonemic awareness will be a primary focus of this review because the relatively new impetus to teach phonemic awareness creates the question whether teachers have adequate knowledge of the concepts and how to teach them to their students. Phonemic awareness is the initial skill that is necessary before print is even introduced (Armbruster, Lehr & Osborn, 2001). When children enter school, phonemic awareness and letter knowledge are the two best predictors of how well they will learn to read during their first two years in school (Haskell, Foorman, & Swank, 1992). Children must learn how words are made up of sounds, or phonemes, that, when manipulated, can change the meaning of words (Armbruster et al., 2001). Children who develop phonemic awareness are likely to have a much easier time learning to read and spell than children who do not form these skills. Children who cannot hear and manipulate sounds will have tremendous difficulty understanding that phonemes relate to written letters, or graphemes. Deficits in phonemic awareness have been identified as one of the aspects of phonological processing that cause reading disabilities (Lyon & Moats, 1997). The most common type of reading disability is difficulty in decoding words. Good readers have mastered the concept that letters represent sounds while poor readers have tremendous difficulty developing this fundamental principle (Lyon, 1998a).

Fortunately, phonemic awareness can be taught and learned, helping children to read and spell (Torgesen & Mathes, 2002). For these children, systematic and explicit instruction is required (Lyon, 1998a). Without explicit instruction focusing on phonemic awareness, at least 20% of school children will have significant difficulties learning to read (Torgesen & Mathes, 2002). Specific phonemic awareness instruction that occurs

either before reading instruction begins, or during reading instruction, will boost the reading growth for those children, especially when combined with instruction on letter-sound correspondence. Children need to be trained on how to blend phonemes together to create words as well as how to segment or break words apart into phonemes. Children show the most improvement in phonemic awareness when both of these skills are taught (Torgesen, Morgan & Davis, 1992).

Explicit Reading Instruction

Reading research over the past 40 years has not been able to show reading development as occurring naturally due to simple exposure to literature (Lyon, 1998b). However, early systematic instruction in phonemic awareness and phonics has been shown to increase decoding skills and word recognition in at-risk kindergarten through second grade students (Lyon & Moats, 1997). Instructional approaches that are not direct and systematic seem to be less effective at increasing word reading skills.

A growing body of research supports that significant improvements in reading and pre-reading skills occurs when a direct and systematic approach to teaching phonemic awareness is used. Foorman, Francis, Fletcher, Schatschneider and Mehta (1998) examined different teaching instruction styles including (a) direct, systematic code instruction, (b) embedded code that was not as explicit, yet still taught phonological awareness and phonics, and (c) implicit code that did not provide systematic instruction. They found that students in the direct code condition showed stronger outcomes in word reading, decoding and comprehension.

Additional support for the importance of explicit code instruction was found in a study by Torgesen et al. (1999). They examined (a) direct instruction in phonological

awareness plus phonics, (b) embedded phonics, and (c) tutorial support in the regular classroom, compared to a no-treatment condition. Once again, at the conclusion of the study the children in the phonological awareness plus phonics condition had the highest average scores on word attack and word identification measures. Even when direct and systematic instruction was provided through a computer program, significant gains were found, rivaling those found in similar teacher directed instruction (Torgesen, 2000).

Teacher Knowledge and Preparation to Teach Reading

Research has shown that students benefit from phonemic awareness instruction. Some may question whether teachers need specific knowledge in phonemic awareness to sufficiently teach students. Teachers know how to read, and instruction of phonology may seem unnecessarily technical and abstract (McCutchen & Berninger, 1999). However, as literate adults, teachers' knowledge of sounds and spelling patterns are intertwined. This makes it difficult for teachers to separate their knowledge of spelling from their knowledge of sounds to teach effectively to children who do not yet know how to spell. Thus, without adequate knowledge of English phonology, teachers can unintentionally relay misinformation, causing confusion and frustration on the part of the students. Inappropriate and unclear examples of sounds in words can be especially perplexing for students with disabilities (Moats, 1994). Also, without adequate knowledge of phonology, teachers will not be able to interpret and remediate their students' errors. Having a sufficient understanding of the English language will allow teachers to organize and sequence information for instruction in reading and spelling.

Of concern is whether teachers actually have this knowledge of phonemic awareness. Early research indicated that kindergarten teachers had never even heard the

term phonemic awareness (Troyer & Yopp, 1990). Troyer and Yopp (1990) did a follow up study on kindergarten teachers' knowledge of phonemic awareness and segmentation, also looking at years of teaching experience and education credentials. They found that the less experienced teachers and the teachers with Master's degrees were more knowledgeable due to their instruction in graduate classes, with some knowledge coming from district inservices. Even so, only half of the less experienced teachers, those with the most knowledge, were familiar with the concepts. This study was conducted 15 years ago, before the dissemination of the National Reading Panel report caused the topic of phonemic awareness to become more common in the vernacular of school professionals. Therefore more teachers may now be familiar with the topic.

Teacher preparation in reading and writing was found to be insufficient to meet student needs based on the minimal requirements in teacher education programs (Nolen, McCutchen, & Berninger, 1990). Teacher program requirements of coursework in reading range from 0 to 12 course hours. Based on teacher education in reading, it is likely that teachers themselves need direct instruction in phonemic awareness to successfully teach students the concepts. Teachers need to be empowered with knowledge so they can impart information onto their students. Two common places for teachers to learn new information are through education programs and professional development inservices.

Professional Development

There appears to be a breakdown in disseminating reading research to those who need it most, the teachers doing the instruction. It also seems that teachers do not always value research experiments (Brabham & Villaume, 2003). Teachers often view results

found in research studies as contradictory and inaccurate (Malouf & Schiller, 1995). Teachers may respect evidence that comes from other teachers' classroom experiences more than from "reading experts" who do not teach reading to children (Brabham & Villaume, 2003). This could be an important factor in the outcomes of professional development. If the information is coming from teachers who are highly respected and valued, it may be more successful in changing teachers' attitudes and practices.

An important question regarding professional development is how teachers learn new information they can use to improve their instruction. Similar to any other learner, teachers assimilate new information into their already existing schemata (Sparks-Langer & Colton, 1991). Their schemata are built from the experiences they have; thus teachers with more experience teaching have richer schemata to which they can attach new information. Following this, professional development should be more successful with teachers who are more experienced than those with less experience.

Although some knowledge can be gleaned from one day workshops, more learning comes from experience and solving everyday problems (Schon, 1987). With this in mind, how can professional development be effective? Two critical factors often overlooked in professional development are teacher motivation to engage actively in staff development and how change occurs. Professional development programs that do not address these factors are often unsuccessful (Guskey, 1986). Teachers are motivated to do more work when they believe that (a) they will become better teachers and (b) their students will benefit (McLaughlin & Marsh, 1978). Teachers are more likely to accept a program when they receive practical ideas that will directly improve their students' outcomes. According to Guskey (1986), teachers' attitudes and beliefs change after

improvements in student outcomes are shown. This creates a difficult burden to overcome; teachers' practices are more likely to change if their attitudes change, yet their attitudes are more likely to change if their student outcomes improve, which often depends on teachers changing their practices.

Guskey (1986) sets forth several criteria that must be met for professional development to be successful. First, if a new program is to be implemented, it must be presented in an unambiguous and concrete manner focusing on specific skills rather than broad theories and practices. Second, teachers' concerns should be addressed directly and in a compassionate manner. Third, the person who is running the professional development must be seen as plausible by the teachers. Teachers may not find "reading experts" as credible as they do other teachers. Fourth, teachers should receive regular feedback on how students are progressing, especially because teachers are motivated when student outcomes improve. This makes the difficult process of change worthwhile. Finally, teachers need continued support and follow up after the initial training. Change can be an anxiety-provoking process and if teachers cannot discuss it with someone, the change can become too overwhelming and the process will stop.

One method of providing support to teachers is coaching. Coaching is a process through which teachers help each other, through observation and constructive feedback, to improve their teaching practices (Joyce & Showers, 1982). Simply instructing teachers in new skills does not automatically insure the transfer of these skills to the classroom. Similarly, coaching will not work if the teachers are not adequately instructed in the new skill and do not have opportunities to practice. However, when given instruction coupled

with the support and opportunities to practice the skills with feedback, teachers will begin to transfer skills they learn into their practice.

One example of a coaching professional development model is found in a study by Gersten, Morvant, and Brengelman (1995). This study looked at having special educators act as coaches for general educators. The study took place in an inner-city elementary school with 12 voluntary general educators and 2-administrator selected special educators to act as coaches. The researchers found that even though they focused on student performance, teachers felt as if they were being evaluated. However, over the course of months, teachers did change their practices from personal assessment of how a lesson went to focusing on how students performed after a lesson, indicating success of instruction. As the researchers did not include any of their data, it is difficult to interpret their results as meaningful. However, it is important to keep in mind that using the coaching method may cause teachers anxiety and mistrust, which could hamper their rate of change. Interestingly, other studies have found coaching to be viewed positively by teachers (Haager &Windmueller, 2001) so it could be that the anxiety is an initial reaction and diminishes as results are seen.

Phonological Knowledge in Preservice and Inservice Teachers

McCutchen, Harry, Cunningham, Cox, Sidman and Covill (2002) studied a sample of general education and special education teachers of kindergarten through second grades. They looked at (a) teachers' knowledge of English phonology, (b) teachers' general knowledge, (c) teachers' attitudes toward instruction, and (d) students' outcomes. They found that although teachers had a high level of general knowledge, they were much less knowledgeable about English phonology, answering only 30% to 35% of

the questions correct. Further, McCutchen and colleagues (2002) found that the teachers did not have strong preferences for one instructional practice over another. A significant but small correlation was found between teacher's phonological knowledge and their use of explicit phonological activities. Moreover, kindergarten teachers with higher phonological knowledge who used explicit phonological instruction had students score higher on word reading at the end of the year. However, this correlation was not found for first and second grades, though there was a small correlation between teachers' phonological knowledge and students' writing at this level.

This is an important study as it shows a significant relationship, at least in kindergarten, between teachers' knowledge of phonology, their use of explicit instruction, and their students' ability to read (McCutchen, Harry, Cunningham, Cox, Sidman & Covill, 2002). One limitation of this study is there was no initial measure of word reading for students at the beginning of the year to determine the amount of growth as compared to students whose teachers had less phonological knowledge. Still, evidence suggests that knowledge of phonology and using explicit reading instruction are important to student success.

From the research on lack of teacher knowledge in reading instruction, professional development models were examined for their effectiveness in training teachers on how to teach early reading skills. Often, professional development only consists of providing teachers with prescribed lessons rather than informing them of the research on the topic so they can be prepared to develop their own lessons (McCutchen & Berninger, 1999). The typical professional development model is inservice training, generally a one day workshop. These static workshops create little lasting change in

teachers' practices (Miller & Lord, 1993). For teachers to incorporate new ideas and methods into their teaching practices, they need regular follow-up and support combined with pressure to change (Guskey, 2002). It is also beneficial for the teachers to have feedback on their students' performance.

To address the limitations of the one day workshops, an alternative professional development model was tested by McCutchen and Berninger (1999). This model focused on a different developmental level each year, for three years. During the first year the focus was on kindergarten, the second year on first and second grades, and the third year on third and fourth grades. A two week summer institute was followed by observations and consultations with the teachers and three 1-day follow up inservices. At the time this article was published, data had been collected for the first and second years. The participants were 59 teacher volunteers from a variety of schools in a large urban area. The teachers were assigned to either the professional development condition or a wait-list control condition. The participants' knowledge of English phonology, change in teaching practices (measured by observations), and student outcomes on measures of phonemic awareness, orthographic fluency, word reading, comprehension, spelling and composition fluency were all measured. Teachers' knowledge was measured before the summer institute and at the end of the following school year, teaching practices were measured throughout the school year, and student outcomes were measured at the beginning and end of the school year. The study found inservice teachers' linguistic knowledge to increase, their instruction to focus more on phonics than the control group, and their students showed more growth on phonological awareness and word reading. A possible

conclusion that could be drawn is that if teachers learn English phonology, it will contribute to changing their teaching practices and their students may benefit.

The main limitation of this study is researchers did not specifically report their data. The authors did not include any tables or graphs to display their data and simply included one sentence about each of the results. Some of the results were not even presented, just that it was significant and there was an improvement. This leaves the reader to question how big the improvement was and whether it is truly socially relevant and worth the immense amount of time and resources it would take to put this type of inservice into place. Although the results are promising, this study should be replicated to determine whether there are significant gains.

Another voluntary professional development project that was conducted to study the issue of developing teacher knowledge was Project RIME, Reading Instructional Methods of Efficacy (Bos, Mather, Narr & Babur, 1999). It was an in-depth training model, having a course taught over the summer for two-and-a-half weeks with sessions three-and-a-half hours in length, followed by a year-long collaboration with the schools and monthly inservices. Project RIME was interactive, as it provided professional dialogues for teachers to process new information and assimilate it into their pre-existing schemata. It was also collaborative because it provided opportunities for teachers, school professionals and the researchers to interact. The goal of the program was to foster a positive attitude toward explicit instruction of early reading skills. The program gave techniques and strategies for teachers, along with building their knowledge of the English language.

Project RIME had a thorough program content which included factors that affect early reading and spelling development, assessments that can identify difficulties in these areas, and techniques and strategies to reduce the effects of these problems. Specific methods were taught in order to increase students' phonemic awareness. Teachers were asked to discuss the methods presented and then plan and develop their own methods to be used in their current literacy programs. After the summer program, the Project RIME staff observed the participants in their classrooms and held monthly support meetings.

For the beginning of this project, 11 participants were chosen from a total of 31 teachers involved in Project RIME. These 11 participants were chosen because they worked in two schools that had collected student outcome measures. The teachers' knowledge and attitudes toward reading instruction were measured before the summer course, after the summer course and after the year long school collaboration. Participants in the wait-list group were given the same measures before the summer and at the end of the school year. The researchers also measured student performances on sound identification, spelling and reading fluency tasks at the beginning and end of the year. Results of the study showed that teachers perceived the professional development as valuable, their attitudes toward explicit instruction became more positive, they were more knowledgeable and their instruction became more explicit. Students whose teachers took part in the professional development had better outcomes overall.

A concern with this study is the cost and length of time involved with this type of professional development, especially if it were to be required for teachers. Would the teachers have to take the course over the summer and if so would they paid for the work? If the course was not during the summer, who would teach the children while the teachers

were in their training? Also, the collaboration with the schools requires trained professionals with time dedicated to working with the teachers. There was no follow up after the year of collaboration in this study. It would be helpful for schools to know whether the gains made are sustainable. Would the teachers need ongoing collaboration indefinitely and if so how would this work?

As has been discussed, a small body of research has begun to look at teachers' knowledge of phonemic awareness and the structure of language and its implications for positive student outcomes (McCutchen & Berninger, 1999). Another study contributing to this body of evidence was conducted by Bos, Mather, Dickson, Podhajski and Chard (2001). The researchers not only looked at teachers' knowledge of English phonology; they broadened their research to include teachers' attitudes of explicit and implicit instruction. Bos and colleagues (2001) wanted to see what the relationship was between teachers' attitudes of explicit instruction of phonemic awareness and their knowledge on the subject before and after professional development in the area.

This study looked at a large number of preservice teachers (n=252), i.e., those who were still in school or student teaching, and inservice teachers (n=286), i.e., those who were in the field teaching kindergarten through third grades and were participating in the aforementioned Project RIME (Bos et al., 1999). The perceptions and knowledge measures were collected from the preservice teachers after they completed their reading methods course and from the inservice educators before they participated in the professional development (Bos et al., 2001).

The results indicated that the preservice educators at least mildly agreed with the importance of explicit code instruction. The inservice educators expressed more positive

attitudes toward explicit code instruction than the preservice teachers. Preservice educators only answered 53% of the knowledge of English phonology questions correctly, while the inservice educators answered 60% of the questions correctly, which is a statistically significant difference. The inservice teachers who had more than 11 years of experience teaching demonstrated significantly higher knowledge than inservice teachers with less experience. Special education teachers had a more positive attitude toward explicit code instruction and more knowledge of English phonology than general education teachers. A positive attitude toward explicit code instruction was slightly, but significantly, correlated with feeling prepared to teach reading and to teach struggling readers, and a positive attitude toward implicit code was negatively correlated with feeling prepared. This correlation is likely due to the need to use explicit code to help struggling readers succeed. If a teacher does not have a positive attitude about using explicit code, they are probably less likely to use explicit teaching methods and their struggling readers may not make as much progress as students with teachers who have positive attitudes about explicit code.

One limitation of this study is the researchers did not examine the relationships between their findings, actual teacher practices and student outcomes. However, perceptions and attitudes have been demonstrated to influence teacher practices (Guskey, 1986). Thus, if teachers do not believe in explicit instruction, it is highly unlikely they will teach in that manner. Another limitation is Bos and colleagues (2001) did not give the measures to the inservice educators after they took part in the professional development inservice. Thus, it is unknown as to whether professional development can improve attitudes and knowledge, and whether this improvement helps students achieve

more. Additionally, although inservice educators know more about the English language than preservice educators, they only answered 60% of the questions correctly. The researchers did not give specific data on how much more the experienced teachers knew than the inexperienced teachers, so it is difficult to make a statement regarding the true significance of that finding. The researchers also mentioned as a limitation their sole use of self-report data, without any direct observations. Thus the data could be prone to social desirability bias, at least with attitudes toward code instruction. In the future, a study that combines self-report data and observations to show that teachers' perceptions of their behavior are accurate would be beneficial.

From the research on teachers' attitudes toward reading instruction and their knowledge of the English language, it is evident that teachers lack some of the underlying knowledge that could improve their abilities to teach reading, especially to those students with disabilities. It seems that many teachers have not had adequate opportunity to acquire such knowledge (Lyon, 1998). The research in the area is severely lacking on specifics that are necessary to inform how teachers should gain this knowledge. In most of the studies, the information was collected before the implementation of a professional development program. While McCutchen and Berninger (1999) did collect data after the program, they did not give specific data stating how much of an increase in knowledge and attitudes the teachers experienced, which leaves unclear whether costly and time consuming professional development is truly worthwhile. Issues that still need to be addressed in research are the type and amount of both preservice education and inservice professional development. The present study examined the Reading First program

which, as previously mentioned, had a prescribed amount of professional development

including a coaching model.

CHAPTER 3

Methodology

Participants

This study consisted of 79 teacher participants from four Reading First elementary schools in an urban school district in New York. The participants included kindergarten through third grade classroom teachers (*n*=44), special education teachers (*n*=21), reading teachers, reading coaches and other related specialists (*n*=8) and unknown grade level/area (n=6). The participants had a mean age of 41 years; were 86% female, 10% male and 4% unknown gender; 71% White, 1.3% African American, 3.8% Latino, 1.3% Asian American and 23% unknown ethnicity; 10% had a Bachelor's degree, 77% had a Master's degree and 13% unknown education level; had taught a mean of 13.9 years, a mean of 6.7 years at their current grade level and a mean of 8.3 years at their current school. Approximately 80% of the students in this school district qualified for free or reduced price lunch and a high proportion of students read below grade level (http://www.rcsdk12.org/district/profile.htm, 2005). The school district in which these four Reading First schools were in had a student population of 64% African American, 20% Hispanic, 14% White, and 2% Native American, Asian, and other ethnic groups. The school district provides special education services to 14% of the student population.

At the time of data collection, the school district was in its second year of implementation of the Reading First program. The teachers and specialists had completed the necessary requirements of the Reading First program for New York State, including the NYS Reading Academy, a comprehensive web-based program that focuses on research based reading instruction practices and assessment. As part of the Reading

First grant, several trained professionals from around the country provided training for the faculty on topics including differentiated instruction, intervention planning, small group instruction, phonemic awareness, and teaching struggling readers and impoverished students. They had received in-depth training on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment and how to use data to drive instruction. Moreover, each school had building-level reading coaches who had undergone even more training. The building-level reading coaches were selected by the administration because they were experienced, had leadership skills, and deemed as exceptional in their school. The coaches led grade level meetings, helped monitor progress on a school level, grade level, and individual teacher level, and helped assess students' reading skills. They were available to help teachers with instructional activities and interventions. There also were regional reading coordinators selected by the state education department to help synchronize the efforts of the building coaches and provide even more support to the teachers.

Recruitment. The 79 participants were recruited from a possible 123 teachers and reading coaches from the four Reading First schools, for a return rate of 64%. The participants were recruited through an information session with the reading coaches from each school. The researcher described the study and the methods to the reading coaches. The reading coaches agreed to disseminate the information and surveys to the teachers in their building, as well as collect the surveys and return them to the researcher. Random assignment of participants was not possible as the variables being studied included grade level taught, general educator or special educator, and participation in Reading First.

Confidentiality. The identities of the participants and their responses on the survey were not anonymous; however they were kept confidential. Identification numbers were assigned to each teacher and names were not used for the study. However, none of the results for individual teachers were shown to anyone from the school district.

Measures

Data were collected on two measures, a perception survey of teaching reading and a knowledge assessment of English phonology.

Perceptions survey. The Teacher Perceptions About Early Reading and Spelling was developed by Bos, Mather, Dickson, Podhajski and Chard (2001) and modeled after an instrument developed by DeFord (1985). The survey focuses on perceptions of two theoretical orientations toward reading instruction, explicit code instruction (EC) and implicit code instruction (IC). The current survey was a modified version of Bos and colleagues (2001) 15 item survey. Three questions were removed from the original survey as the questions measured neither perceptions of implicit or explicit code instruction and were simply foils. The questions were randomly put in order using dice. Educators were asked to rate each of the 12 items on a six-point Likert scale ranging from strongly disagree (1) to strongly agree (6). The technical properties of the Bos et al. (2001) survey showed moderate internal consistency (Cronbach's coefficient alpha) for each factor EC= .70 and IC= .50.

Knowledge assessment. The Teacher Knowledge Assessment: Structure of Language is a 22-item multiple choice assessment that examines knowledge of the structure of the English language at both the word and sound levels. This survey was adapted by Mather, Bos and Babur (2001) from Moats (1994). An overall reliability of

.83 (Cronbach's coefficient alpha) was found. The perceptions survey and knowledge assessment can be found in Appendix A.

Procedures

During a meeting, the reading coaches from each school were told about the study including the risks, benefits, confidentiality of responses, and voluntary nature of the study. The reading coaches were given packets including the informed consent page (see Appendix B) which each teacher had to sign to agree to participate. All pages in the packet contained an identification number including the informed consent page. The teachers were asked by the reading coaches to complete the surveys and return them to the reading coaches.

Data Analysis

To address the research questions outlined in Chapter 1, the data were analyzed using correlations to determine if (a) there was any relationship between teachers' knowledge of English phonology and their attitudes toward explicit reading instruction and (b) if there was a relationship between teacher experience and their knowledge and/or attitudes toward instruction. Independent samples t-tests were used to compare (a) special educators knowledge and attitudes to general educators, (b) the present sample's knowledge to the Mather, Bos and Babur (2001) sample, and (c) the present sample's attitudes toward reading instruction to the Bos, Mather, Dickson, Podhajski, and Chard (2001) sample, because they used the same survey only with a non-Reading First sample that had not been through professional development. This would help determine whether teachers who have completed intensive professional development have more knowledge and more positive attitudes toward explicit reading instruction than teachers who have not

had professional development. As the present sample was not surveyed before they took place in the professional development, the previous studies' samples provide a basis for comparing how much knowledge teachers have and what their attitudes are before professional development.

CHAPTER 4

Results

The results from this study will be presented in four sections, one for each of the four research questions presented in Chapter 1. In each section, descriptive statistics and results of data analyses will be presented for each measure used to address the question.

Effects of Professional Development on Teachers' Knowledge and Attitudes

Research Question 1: Do teachers who have completed intensive professional development programs have more knowledge of English phonology and more positive attitudes toward explicit reading instruction than teachers who have not been through a professional development program?

The descriptive statistics can be found in Table 1. The descriptive statistics and t test statistics for knowledge of English phonology are presented in Table 2. An independent samples t test was performed on the data to determine if Reading First teachers have more knowledge of English phonology. Results showed that teachers in the current study had significantly more knowledge of English phonology than teachers in the Mather, Bos and Babur (2001) study (t(208)=2.91, p=.05). This difference accounted for 3.9% of the participants' knowledge of English phonology. The effect size was .014. Thus, the Reading First teachers scored .014 standard deviations higher on the knowledge of English phonology survey than teachers in the previous study.

Table 1

Descriptive Statistics of Teacher Characteristics in Present Study

	$\underline{n}$	M	SD
Knowledge	79	15.86	3.37
Implicit Code	79	4.45	.55
Explicit Code	79	5.47	.37
Total Years Teaching	76	13.9	10.02
Total Years at Current School	76	8.31	6.23
Age	62	41.3	11.32

Table 2

Descriptive Statistics and Independent Samples t-test by Sample of Knowledge of English Phonology

	Present Sample			Bos, Mather & Babur (2001) Sample			Independent Samples t Test	
	n	M	SD	n	M	SD	df	t value
Knowledge	79	15.86	3.36	131	14.5	3.24	208	2.91*

Indicates 2-tailed significance at p=.05.

The descriptive statistics and t test statistics for attitudes toward reading instruction are presented in Table 3. An independent samples t test was performed to determine if teachers in the current study have more positive attitudes toward explicit code instruction and less positive attitudes toward implicit instruction than teachers in the previous study. The results showed Reading First teachers did not have a significantly more positive attitude toward explicit code instruction than teachers in the Bos, Mather, Dickson, Podhajski, and Chard (2001) study ($t(363)=1.34$, $p>.05$) nor did the teachers in the current study have a significantly less positive attitude toward implicit code than teachers in the previous study ($t(363)= -.845$, $p>.05$).

Table 3

Descriptive Statistics and Independent Samples t-test by Sample of Attitudes Toward Implicit and Explicit Code

	Present Sample			Bos, Mather, Dickson, Podhajski, and Chard (2001) Sample			Independent Samples t Test	
	n	M	SD	n	M	SD	df	t value
Implicit Code	79	4.45	.55	286	4.5	.5	363	-.845
Explicit Code	79	5.47	.37	286	5.4	.4	363	1.34

*Indicates 2-tailed significance at p=.05.

Thus, the answer to the first research question is that Reading First teachers do have slightly more knowledge of English phonology than teachers in a previous study; however they do not have more positive attitudes toward explicit code instruction or less positive attitudes toward implicit code instruction.

Effects of Certification as a General Educator versus a Special Educator on Knowledge and Attitudes

Research Question 2: Do special educators have more English phonology knowledge and more positive attitudes toward explicit reading instruction than general educators?

The descriptive statistics and t test results are presented in Table 4. An independent samples t test was performed to determine if special education teachers have more knowledge of English phonology, more positive attitudes toward explicit instruction, and less positive attitudes toward implicit instruction than general education teachers. It was found that special education teachers do not have significantly more knowledge of English phonology than general education teachers ($t(62)=.-.649, p=.519$), nor do they have significantly more positive attitudes toward explicit code instruction ($t(62)=.939, p=.351$), nor do they have less positive attitudes toward implicit instruction ($t(62)=.361, p=.719$).

Table 4

Descriptive Statistics and Independent Samples t Test Results by General and Special Educators of Knowledge and Attitudes

	General Educators			Special Educators			Independent Samples t Test	
	n	M	SD	n	M	SD	df	t value
Knowledge	44	15.86	2.78	20	16.4	3.62	62	-.649
Implicit Code	44	4.5	.57	20	4.44	.54	62	.361
Explicit Code	44	5.51	.38	20	5.42	.34	62	.939

*Indicates 2-tailed significance at $p=.05$.

Effects of Experience on Teachers' Knowledge and Attitudes

Research Question 3: Do teachers with more experience have more English phonology knowledge and more positive attitudes toward explicit reading instruction than those teachers with less experience?

Descriptive statistics can be found in Table 1 and correlations can be found in Table 5. Correlations between total years of experience, knowledge of English phonology and attitudes toward both explicit and implicit instruction were not significant. Correlations between the number of years of experience at the teachers' current school, knowledge of English phonology and attitudes toward explicit and implicit instruction were also not significant.

A correlation was performed to determine the relationship between teachers' age and attitudes toward explicit instruction. A Pearson's correlation revealed a moderate positive correlation between the age of the teachers and their attitudes toward explicit code instruction ($r=.328$, $p=.009$). The older the teachers were, the more positive their attitudes were toward explicit code instruction. Approximately 10.8% of the variability in the teachers' attitudes was due to their age ($r^2=.1076$). Correlations between teachers' age, knowledge of English phonology and attitudes toward implicit instruction were not significant.

Table 5

Correlations by Years of Experience, Experience at Current School, and Age of Teacher of Knowledge and Attitudes

	Knowledge	Implicit Code	Explicit Code
	r	*r*	*r*
Total Years	.089	-.168	.115
Current School	.105	.017	.202
Age	.031	-.226	.328**
Knowledge	--	.150	.358**

**Indicates significance at p<.01.

Relationship Between Teachers' Knowledge and Attitudes

Research Question 4: Do teachers with more English phonology knowledge have more positive attitudes toward explicit reading instruction?

Correlations can be found in Table 5. A correlation was performed to determine the relationship between teachers' knowledge of English phonology and their attitude toward explicit code instruction. A Pearson's correlation revealed a moderate, positive correlation between knowledge of English phonology and attitudes toward explicit code instruction ($r=.358$, $p=.001$). The more knowledge teachers had of English phonology, the more positive their attitudes were toward explicit code instruction. Approximately 12.8% of the variability in the teachers' attitudes was due to their knowledge of English phonology ($r^2=.1282$). A correlation between teachers' knowledge of English phonology and their attitude toward implicit code instruction was not significant.

CHAPTER 5

Discussion

This study examined Reading First teachers' knowledge of English phonology and attitudes toward reading instruction. Specifically, the Reading First teachers' knowledge and attitudes were examined to determine if (a) working at a Reading First school, and participating in all the professional development required for the grant, was related to teachers' knowledge and attitudes toward explicit instruction as compared to teachers in previous studies that did not work at Reading First schools, (b) special educators had more knowledge and more positive attitudes toward explicit instruction than general educators, (c) teachers with more experience have more knowledge and more positive attitudes toward explicit reading instruction, and (d) teachers with more knowledge had more positive attitudes toward explicit instruction.

The Reading First teachers' knowledge of English phonology and attitudes toward reading instruction were compared to two previous studies, one measuring teachers' knowledge on the same survey (Mather et al., 2001) and one measuring teachers' attitudes on the same survey (Bos et al., 2001). The previous studies measured the teachers' knowledge and attitudes before they took part in an in-depth professional development program. As the Reading First teachers' knowledge and attitudes were not measured before they took part in the Reading First required professional development, the comparison groups were used to gain an idea of the "typical" teacher's knowledge and attitudes. The Reading First teachers did have significantly more knowledge than the previous study's sample; however their attitudes were not significantly different.

Though the Reading First teachers were found to have more knowledge of English phonology, the amount of knowledge may not have much practical significance. The Reading First teachers answered approximately one more question correctly than the previous study's sample. The Reading First teachers, on average, answered 72 percent of the knowledge survey questions correctly. Even though this is higher than the other sample, it is unclear whether this is an adequate amount of knowledge for teachers to have in order to teach the information to students. If teachers do not understand even a few of the concepts, they could be inadvertently relaying misinformation to their students.

Both the Reading First teachers and the previous sample (Bos, et al., 2001) had positive attitudes toward explicit reading instruction. Both samples' ratings fell about halfway way between agree and strongly agree with explicit reading instruction. Attitudes this positive are an important finding, even without comparing the samples' scores. It is unlikely that a unanimous strongly agree attitude would be found, thus having such a high rating of explicit reading instruction is significant. If the teachers agree with explicit reading practices, they are more likely to be are using these practices to some extent in their classrooms.

It was hypothesized that taking part in intensive professional development would drastically improve teachers' knowledge of English phonology and at least improve their attitudes toward explicit reading instruction and possibly decrease their attitudes toward implicit instruction. The results of the study may have been affected by methodological limitations. First, as the Reading First teachers were not surveyed before they took part in the professional development, there is no way to be certain their level of knowledge and

attitudes were similar to the previous studies' samples. The previous studies were completed in a different geographic region, more than 5 years prior to the current study. Furthermore, the teachers in the previous studies were from both urban and rural schools and had at least 3 years of experience teaching. The teachers from the previous studies also volunteered to partake in the study and the ensuing intensive professional development. Teachers in the current study were required to participate in the professional development as part of their job. There is no way to determine what effect these factors may have on the results.

The Reading First grant is given to schools where the students are failing reading tests. It is possible that the reason the students are not doing well is the teachers have less knowledge than teachers in schools where the students are performing well. Thus, it is possible that the Reading First teachers actually had less knowledge to begin with, before the Reading First program, than the teachers from the previous study. There may have been a drastic increase in knowledge following the Reading First professional development.

The teachers in the Reading First schools had to participate in the professional development in order to keep their jobs. It may be more difficult to change attitudes and increase knowledge if the teachers did not want to do the extra work and go through the professional development. Also, according to Guskey (1986) it is easier to change teachers' attitudes when they see improved student outcomes. Student outcomes were not measured in this study so no conclusions can made based on them. However, these schools were only in their second year of the Reading First grant so it is possible that

teachers had not yet seen improvements in their students' outcomes, and thus their attitudes were not improved at that point in time.

Though the results from this study were small, there is not enough information to conclude that the Reading First grant is unsuccessful. First and foremost, students' outcome data needs to be collected and analyzed. It is possible that the knowledge measured in this study and highly positive attitudes toward explicit instruction are not actually necessary to successfully teach students to read. It would also be helpful to compare these results to teachers that are more similar to this sample. It would be possible to survey other teachers from schools in the same district that did not receive the Reading First grant. This would provide a more direct comparison and allow for stronger conclusions.

Further limitations may have affected the other results in this study. When comparing groups within the sample, the sample size decreased significantly. For instance, there were more than twice as many general educators (n=44) than special educators (n=20). The small sample size made it difficult to have a significant finding, especially with the high variability found in the samples. It is possible that with a larger sample size the special educators' knowledge would have been significantly greater than the general educators. At first it may be concerning that their attitudes toward explicit instruction were not more positive than general educators. The role of special educators is typically to provide more explicit and direct instruction to students. However, the special educators more than agreed with explicit instruction, as did the general educators. This may point to success in improving general educators' attitudes, rather than a concern about the special educators.

The effect teachers' experience had on their knowledge and attitudes was also studied. Previous studies reported conflicting information on the topic. Moats (1994) argued that teacher education programs were not thorough enough in the area of reading. From this, it might seem that inexperienced teachers would have less knowledge and less positive attitudes toward explicit reading instruction. On the other hand, Troyer and Yopp (1990) found that the less experienced teachers and the teachers with Master's degrees were more knowledgeable about phonemic awareness. With this conflicting information, experience, as measured by years of teaching, years of teaching in the current school, and age of the teacher, was examined. Neither years of experience teaching nor years of experience teaching in the current school had a significant relationship to attitudes or knowledge. However, the age of teachers was significantly related to their attitudes. The older the teachers were, the more positive their attitudes were toward explicit code instruction. This information is important for administrators to know. Having a mentoring program in schools pairing older teachers with younger teachers may help educate and improve the attitudes of the younger group.

Finally, the relationship between knowledge and attitudes was examined. As expected, the more knowledge teachers had of English phonology, the more positive their attitudes were toward explicit reading instruction. This makes sense intuitively; explicit reading instruction requires teachers to have a vast amount of knowledge, down to minute details. If teachers have this knowledge they will likely feel more confident in their ability to teach in an explicit manner and thus will be more positive about the approach.

More research needs to be done on the Reading First grant and professional development in general. Most importantly, student outcomes need to be measured to

show that knowledge and positive attitudes toward explicit instruction truly have positive impacts in the most important manner. It would also be significant for schools to study professional development programs that do not require significant funding and outside resources as this is most commonly found.

References

Armbruster, B. B., Lehr, F., & Osborn, J. (2001). Put reading first: The research building

blocks for teaching children to read. Washington, DC: National Institute for

Literacy.

Bos, C. S., Mather, N., Dickson, S., Podhajski, B., & Chard, D. (2001). Perceptions and

knowledge of preservice and inservice educators about early reading instruction.

Annals of Dyslexia, 51, 97-120.

Bos, C. S., Mather, N., Narr, R. F., & Babur, N. (1999). Interactive, collaborative

professional development in early literacy instruction: Supporting the balancing

act. *Learning Disabilities Research & Practice*, 14, 227-238.

Brabham, E. G. & Villaume, S. K. (2003). Scientifically based reading research- A call

for an expanded view. *The Reading Teacher*, 56, 698-701.

Bursuck, W. D., Munk, D. D., Nelson, C., & Curran, M. (2002). Research on the

prevention of reading problems: Are kindergarten and first grade teachers

listening? *Preventing School Failure*, 47, 4-9.

DeFord, D. E. (1985). Validating the construct of theoretical orientation in reading

instruction. *Reading Research Quarterly*, 20, 361-367.

Denton, D. R. (2003). *Reading First: Lessons from Successful State Reading Initiatives*.

Atlanta, GA: Southern Regional Education Board.

Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1998).

The role of instruction in learning to read: Preventing reading failure in at-risk

children. *Journal of Educational Psychology*, 90, 37-55.

Francis, D. J., Shaywitz, S. E., Steubing, K. K., Shaywitz, B. A., & Fletcher, J. M.

(1996). Developmental lag versus deficit models of reading disability: A

longitudinal, individual growth curves study. *Journal of Educational Psychology*,

88, 3-17.

Gersten, R., Morvant, M., Brengelman, S. (1995). Close to the classroom is close to the

bone: Coaching as a means to translate research into classroom practice.

Exceptional Children, 62, 52-66.

Gough, P.B., Alford, J.A. & Holley-Wilcox, P. (1981). Words and contexts. In O.J.

Tzeng & H. Singer (Eds.), *Perception of Print: Reading Research in*

Experimental Psychology. Hillsdale, NJ: Erlbaum.

Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational*

Researcher, 15, 5-12.

Haager, D. & Windmueller, M. P. (2001). Early reading interventions for English

language learners at-risk for learning disabilities: Student and teacher outcomes in

an urban school. *Learning Disability Quarterly*, 24, 235-250.

Joseph, L. M. (2002). Best practices in planning interventions for students with reading

problems. In A. Thomas & J. Grimes (Eds.), *Best practices in school*

psychology IV: Volume 1 (pp. 803-816). Bethesda, MD: National Association of

School Psychologists.

Joyce, B. & Showers, B. (1982). The coaching of teaching. *Educational Leadership*, 40,

4-10.

Kauerz, K. (2002). *Literacy. No Child Left Behind Policy Brief.* Denver, CO: Education

Commission of the States.

Lyon, G. R. (1998a). *The NICHD research program in reading development, reading*

disorders and reading instruction: A summary of research findings. NY: The

National Center for Learning Disabilities.

Lyon, G. R. (1998b). Why reading is not a natural process. *Educational Leadership*, 55,

14-18.

Lyon, G. R. & Moats, L. C. (1997). Critical conceptual and methodological

considerations in reading intervention research. *Journal of Learning Disabilities*,

30, 578-588.

Malouf, D. B. & Schiller, E. P. (1995). Practice and research in special education.

Exceptional Children, 61, 414-424.

McCutchen, D. & Berninger, V. W. (1999). Those who know, teach well: Helping

teachers mater literacy-related subject-matter knowledge. *Learning Disabilities

Research & Practice*, 14, 215-226.

McCutchen, D., Harry, D. R., Cunningham, A. E., Cox, S., Sidman, S., & Covill, A. E.

(2002). Reading teachers' knowledge of children's literature and English

phonology. *Annals of Dyslexia*, 52, 207-228.

McLaughlin, M. W. & Marsh, D. D. (1978). Staff development and school change.

Teachers College Record, 80, 69-93.

Miller, B. & Lord, B. (1993). *Staff development in four districts.* Newton, MA:

Educational Development Center.

Moats, L. C. (1994). The missing foundation in teacher education: Knowledge of the

structure of spoken and written language. *Annals of Dyslexia*, 44, 81-102.

National Assessment of Educational Progress (1997). *NAEP 1996 Trends in Academic

Progress.* Washington, DC: National Center for Education Statistics.

National Reading Panel (2000). *Teaching children to read: An evidence based assessment of the scientific research literature on reading and its implications for reading instruction.* Bethesda, MD: National Institute of Child Health and Human Development.

Nolen, P. A., McCutchen, D., and Berninger, V. (1990). Ensuring tomorrow's literacy: A shared responsibility. *Journal of Teacher Education*, 41, 63-72.

Perie, M., Grigg, W., and Donahue, P. (2005). *The Nation's Report Card: Reading 2005* (NCES 2006-451). U.S. Department of Education, National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office.

Roman, S. P. (2004). Illiteracy and older adults : Individual and societal implications. *Educational Gerontology,* 30, 79-93.

Schon, D. A. (1987). *Educating the Reflective Practioner.* San Francisco: Jossey-Bass.

Smith, T. M., Desimone, L. M., & Ueno, K. (2005). "Highly qualified" to do what? The relationship between NCLB teacher quality mandates and the use of reform-oriented instruction in middle school mathematics. *Educational Evaluation and Policy Analysis*, 27, 75-109.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Sparks-Langer, G. M. & Colton, A. B. (1991). Synthesis of research on teachers' reflective thinking. *Educational Leadership,* 48, 37-44.

Stanovich, K. (1986). Matthew effects of reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-406.

Torgesen, J. K. (2000). Individual differences in response to early interventions in reading: The lingering problem of treatment resisters. *Learning Disabilities Research & Practice*, 15, 55-64.

Torgesen, J. K. & Mathes, P. G. (2002). *Assessment and instruction in phonological awareness: Second edition.* Tallahassee, FL: Florida State Department of Education.

Torgesen, J. K., Morgan, S. T., & Davis, C. (1992). Effects of two types of phonological awareness training on word learning in kindergarten children. *Journal of Educational Psychology*, 84, 364-370.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Rose, E., Lindamood, P., Conway, T., & Garvan, C. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology*, 91, 1-15.

Troyer, S. J. & Yopp, H. K. (1990). Kindergarten teachers' knowledge of emergent literacy concepts. *Reading Improvement*, 27, 34-40.

U.S. Department of Education (2002). *No Child Left Behind.* Retrieved from http://www.ed.gov/nclb/landing.jhtml

U.S. Department of Education (2003). *Reading First Initiative.* Retrieved from http://www.ed.gov/news/pressreleases/2003/09/09302003.html

APPENDIX A

Teacher Perceptions Survey and Knowledge Assessment

ID #

Please circle the appropriate response or fill in the blank as necessary.

Gender: Male   Female   Age: _____   Ethnicity: _____
Certification: Elementary Education   Special Education   Other _____
Education Level: _____   Number of Literacy Courses Taken: _____
Current Grade Level(s): K   1   2   3   Other_____
Total Years Taught: _____   Years Taught Current Grade: _____
Years Taught at Current School: _____

Please rate these statements on the following scale:

1	2	3	4	5	6
Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Strongly Agree

1. If a beginning reader reads "house" for the written word "home," the response should not be corrected.
           1   2   3   4   5   6
2. K-2 teachers should know how to assess and teach phonological awareness (i.e., knowing the spoken language can be broken down into smaller units: words, syllables, phonemes).
           1   2   3   4   5   6
3. All children can learn to read using literature-based, authentic texts.
           1   2   3   4   5   6
4. Controlling text through consistent spelling patterns (The fat cat sat on a hat.) is an effective method for children who struggle to learn to identify words.
           1   2   3   4   5   6
5. Time spent reading contributes directly to reading improvement.
           1   2   3   4   5   6
6. Poor phonemic awareness (awareness of the individual sounds in words) contributes to early reading failure.
           1   2   3   4   5   6
7. Learning to use context clues (syntax and semantics) is more important than learning to use grapho-phonics cues (letters and sounds) when learning to read.
           1   2   3   4   5   6
8. It is important for teachers to demonstrate to struggling readers how to segment words into phonemes when reading and spelling.
           1   2   3   4   5   6
9. Phonic instruction is beneficial for children who are struggling to learn to read.
           1   2   3   4   5   6
10. K-2 teachers should know how to teach phonics (letter/sounds correspondences.)
           1   2   3   4   5   6

11. Adult-child shared book reading enhances language and literacy growth.

          1   2   3   4   5   6

12. Picture cues can help children identify words in the early stages of reading.

          1   2   3   4   5   6

Please circle the correct response.

1. Which word contains a short vowel sound?
(a) treat   (b) start   (c) slip   (d) paw   (e) father

2. A phoneme refers to a
(a) single letter   (b) single speech sound   (c) single unit of meaning   (d) grapheme

3. A pronounceable group of letters containing a vowel sound is a
(a) phoneme   (b) grapheme   (c) syllable   (d) morpheme

4. If tife were a word, the letter i would probably sound like the i in:
(a) if   (b) beautiful   (c) find   (d) ceiling   (e) sing

5. A combination of two or three consonants prounounced so that each letter keeps its own identity is called a
(a) silent consonant   (b) consonant digraph   (c) diphthong   (d) consonant blend

6. A schwa sound is found in the word
(a) cotton   (b) phoneme   (c) stopping   (d) preview   (e) grouping

7. A diphthong is found in the word
(a) coat   (b) boy   (c) battle   (d) sing   (e) been

8. A voiced consonant digraph is in the word
(a) think   (b) ship   (c) whip   (d) the   (e) photo

9. Two combined letters that represent one single speech sound are
(a) schwa   (b) consonant blend   (c) phonetic   (d) digraph   (e) diphthong

10. How many speech sounds are in the word eight?
(a) two   (b) three   (c) four   (d) five

11. How many speech sounds are in the word box?
(a) one   (b) two   (c) three   (d) four

12. How many speech sounds are in the word grass?
(a) two   (b) three   (c) four   (d) five

13. Why may students confuse the sounds /b/ and /p/ or /f/ and /v/?
(a) Students are visually scanning the letters in a way that letters are misperceived.
(b) The students can't remember the letter sounds so they are randomly guessing.
(c) The speech sounds within each pair are produced in the same place and in the same way, but one is voiced and the other is not.
(d) The speech sounds within each pair are both voiced and produced in the back of the mouth.

14. What type of task would this be? "I am going to say a word and then I want you to break the word apart. Tell me each of the sounds in the word dog."
(a) blending   (b) rhyming   (c) segmentation   (d) manipulation

15. What type of task would this be? "I am going to say some sounds that will make one word when you put them together. What does /sh/ /oe/ say?"
(a) blending   (b) rhyming   (c) segmentation   (d) manipulation

16. Mark the statement that is false.
(a) Phonological awareness is a precursor to phonics. (b) Phonological awareness is an oral language activity. (c) Phonological awareness is a method of reading instruction that begins with individual letters and sounds. (d) Many children acquire phonological awareness from language activities and reading.

17. A reading method that focuses on teaching the application of speech sounds to letters is called
(a) phonics   (b) phonemics   (c) orthography   (d) phonetics   (e) either (a) or (d)

18. What is the rule for using a ck in spelling?
(a) when the vowel sound is a diphthong (b) when the vowel sound is short
(c) when the vowel sound is long (d) any of the above

19. Count the number of syllables for the word unbelievable.
(a) 4   (b) 5   (c) 6   (d) 7

20. Count the number of syllables in the word pies.
(a) 1   (b) 2   (c) 3   (d) 4

21. If you say the word, and then reverse the order of the sounds, ice would be:
(a) easy   (b) sea   (c) size   (d) sigh

22. If you say the word, and then reverse the order of the sounds, enough would be:
(a) fun   (b) phone   (c) funny   (d) one

APPENDIX B

Informed Consent Letter

January 8, 2006   ID #

Hello! You and your colleagues at School # are being asked to participate in a study about the Reading First program. I am a School Psychology student from Rochester Institute of Technology working on my Master's Thesis. I am interested in finding out more information about teachers who work in schools receiving the Reading First grant. As the Reading First program is a new initiative, little is known about the affects it has on teachers and students. Results from this study could affect the future direction of the Reading First program, and how it is implemented in the Rochester City School District.

If you agree to participate, you will complete two short questionnaires which take less than 15 minutes to fill out. To ensure confidentiality, your name will be replaced with an identification number that only the researchers will know. **In no way and at no time will the school district or any of its employees know the results of individual teachers' data**. Group results only will be reported with **absolutely no names attached**.

Although all studies have some degree of risk, the potential in this investigation is quite minimal. Some questions are difficult; however there will be no costs to you as a result of your participation in this study.

Your participation is voluntary. If at any time during this study you wish to withdraw your participation, you are free to do so without consequence.

By participating you will be entered into a drawing and one winner from your school will be randomly chosen to win a $50 gift certificate to local restaurants. This is to show my appreciation not only for participating in this study, but for the difficult and dedicated work you do everyday with your students.

If you have any questions prior to your participation or at any time during the study please do not hesitate to contact me at 475-8563 or cmrrla@rit.edu, or my thesis supervisor, Dr. Suzanne Graney at 475-6701 or sbggsp@rit.edu. Thank for your time.

Sincerely,

Courtney M. Richmond

AUTHORIZATION: I have read the above and understand the nature of this study. I understand that by agreeing to participate in this study I have not waived any legal or human right and that I may contact the researchers at Rochester Institute of Technology at any time. I agree to participate in this study. I understand that I may refuse to participate or I may withdraw from the study at any time without prejudice. In addition, I

understand that if I have any concerns about my treatment during the study, I can contact the Chair of the Internal Review Board at Rochester Institute of Technology (475-7983) at any time.

Participant's name: _____

Participant's signature:_____ Date: _____

Researcher's signature: _____ Date: _____