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The purpose of this study was to identify the planned adaptations of three upper-grades elementary teachers after participating in professional development on how to administer and analyze an Informal Reading Inventory (IRI). The rationale behind this study is that lower grade teachers throughout the state use formative assessments to identify their students' strengths and weaknesses in reading. However, upper-grades teachers are neither required and are rarely offered professional development on how to use such assessments to inform instruction. Little research has explored how upper-grades elementary teachers adapt their instruction after receiving professional development on administering and analyzing a formative assessment. The research question that guided this study was: After administering and analyzing an Informal Reading Inventory, what instructional adaptations, which are stimulated by IRI results, are made by three upper-elementary teachers?

During this study teachers administered an IRI in September and December. The participants' literacy instruction was observed for two consecutive days each month. Following these observations, teachers were interviewed to identify how they had adapted their instruction after analyzing their students' IRI results.

Participants reported more adaptations during the first month of the study, September, immediately following the first administration of the IRI. Participants' adaptations also increased after the second administration in January. However, during

the two months between the IRI administrations, participants reported that their planned adaptations were increasingly based on their everyday observations of their students' reading.

CASE STUDIES OF THREE TEACHERS: A DESCRIPTION AND ANALYSIS OF THEIR PLANNED ADAPTATIONS IN RESPONSE TO THE RESULTS OF AN INFORMAL READING INVENTORY

by

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TABLE OF CONTENTS

Page

LIST OF TABLES vi

CHAPTER

I. INTRODUCTION 1

Statement of the Problem 1
Theoretical Framework 4
Research on Adaptive Teaching 6
Consistent Themes in Previous Research 7
Importance of self regulation 7
Students' needs 8
Emerging Themes in Research on Teacher Adaptations 11
Effectiveness of adaptations 11
Teacher dispositions 12
Summary 13
Research on Informal Reading Inventories 13
Instructional Implications 17
Reading level 17
Strengths and weaknesses 18
Everyday observations 20
Summary 21
Significance 21
Definitions 22
Conclusion 22

II. METHODS 23

Design 24
Context 24
Researcher's Role in Professional Development 25
Participants 27
Ms. Wayne 28
Ms. Robbins 28
Ms. Cann 29
Data Sources 30
Pre-Study Survey 30
Teacher Observations 32
Teacher Interviews 32

Method of Data Analysis 33
Phases of Data Analysis 34
Adjustments during Analysis 36
Validity 39
Ethics 41
Limitations 42
Conclusion 42

III. RESULTS 43

Individual Cases 44
Wayne 44
September 46
October 48
November/December 50
January 51
Summary 53
Robbins 53
September 54
October 58
November/December 60
January 61
Summary 62
Cann 63
September 65
October 67
November/December 68
January 69
Summary 71
Overall 72
Adaptations by Code 73
Adaptations over Time 73
Summary of Results 74

IV. DISCUSSION 76

Summary of the Study 76
Participants' Use of an Informal Reading Inventory 77
Why Participants Used IRI to Adapt 77
Provided a complete "snapshot" of students' reading 77
Indication of growth 80
Other Influences on Participants' Planned Adaptations 82

Everyday observations 82
IRI results and classroom performance 83
Summary 85
Implications 86
Theory 86
Practice 87
Understanding the IRI process 87
Navigating the complexities of teacher reading 88
Policy 90
Opportunities for Future Research 91
Conclusion 93

REFERENCES 95

APPENDIX A. PRE-STUDY SURVEY 106

APPENDIX B. POST ASSESSMENT INTERVIEW 108

APPENDIX C. OBSERVATION PROTOCOL 109

APPENDIX D. POST-OBSERVATION INTERVIEW PROTOCOL 111

APPENDIX E. POST STUDY INTERVIEW 112

APPENDIX F. MEMBER CHECK SIGNATURE SHEET 113

LIST OF TABLES

Page

Table 1. Bett's Criteria (McKenna & Stahl, 2003) 15

Table 2. Data Matrix 31

Table 3. Initial Codes for Adaptations 35

Table 4. Example of a Time Ordered Matrix 36

Table 5. Revised Codes for Adaptations with Examples 38

Table 6. Adaptations by Code for Wayne 45

Table 7. Wayne's Adaptations across Time 45

Table 8. Adaptations by Code for Robbins 55

Table 9. Robbins' Adaptations across Time 55

Table 10. Adaptations by Code for Cann 64

Table 11. Cann's Adaptations across Time 65

Table 12. Overall Adaptations by Code 73

Table 13. Overall Adaptations across Time 74

CHAPTER I

INTRODUCTION

The purpose of this study was to identify the adaptations that three upper-grades elementary teachers made to their reading instruction after participating in professional development on how to administer and analyze an Informal Reading Inventory (IRI). In this chapter, I describe the problem and the research questions this study aimed to address. In addition, I describe previous research in the areas of thoughtfully adaptive teaching and IRIs. Then, I describe how unanswered questions in these two areas of research converge to set the purpose for this study. Finally, I define the principal terms of this study.

Statement of the Problem

Prominent reading researchers argue that knowledge about administering and analyzing formative assessments can empower teachers as decision makers instead of relegating them to reporting "crude numbers" (Tierney, Moore, Valencia, & Johnston, 2000). In Valencia's section of that article she asserted that, "Teachers who understand and focus on content standards, and who make links between instruction and classroom assessment, are more likely to be effective" (p. 248). These researchers believe that standardized test scores do not provide classroom teachers the information necessary to create this link; knowledge about other forms of assessment was required. One significant problem with relying on standardized tests is that these assessments exclude the most

valuable factor in the classroom, the teacher. Unlike standardized tests, which leave little room for teacher involvement, formative assessments have been suggested as assessments that require teacher input to be effective as a means to improving instruction (Johnson, Kress, & Pikulski, 1997; Morris, 2008). When teachers utilize a formative assessment instead of relying on standardized test data to inform their instruction, they have the opportunity to use this data in more meaningful ways.

An Informal Reading Inventory is a formative assessment that can provide classroom teachers the diagnostic information they need to make informed modifications to their instruction (Caldwell & Leslie, 2008; Johns, 2001; Morris, 2008). Although there are various versions of IRIs, all versions are "individually administered reading tests composed of graded word lists and graded passages. Students' oral and silent reading of these passages is compared to criterion in the areas of word recognition, comprehension, and fluency to determine an appropriate reading level and strengths and weaknesses in these specific areas of reading" (Johns, 1991, p. 8). Analyzing the results of any IRI is both a quantitative and qualitative endeavor (Morris, 1999). Unlike standardized tests, knowledgeable teachers play an integral part in interpreting the results and using those results to adapt their instruction.

Previous research (Bader & Wiesendanger, 1989; Klesius, 1983; McCracken, 1972) supports that when teachers learn how to administer and analyze IRIs, they become more aware of how to identify specific strengths and weaknesses in reading. Pikulski and Shanahan (1982) wrote that an IRI leaves little distance between teaching and testing. Similarly, for at least 30 years, other researchers have contended that professional

judgment is necessary for the effective use of IRI results (Bader & Wiesendanger, 1989; Johnson, Kress, & Pikulski, 1987; Klesius & Homan, 1985; McCracken, 1972; Morris, 2008; Paris & Carpenter, 2003). IRIs provide a much needed opportunity to empower teachers to become more active in the assessment process (Bader & Wiesendanger, 1989). For example, when teachers change their instruction with the goal of addressing a student's or a group's perceived needs they are being more active in the assessment process.

By learning to administer and analyze IRIs, teachers have the opportunity to become more aware of the specific instructional aspects of reading instruction (word recognition, fluency, comprehension, vocabulary). In addition, teachers who are conscious of their students' strengths and weakness are more likely to effectively change instruction. Therefore, studying teachers' planned adaptations will allow more opportunities to engage teachers in discussions about how they adapt.

Duffy and colleagues (Duffy, 1993; Duffy & Hoffman, 1999; Duffy et al., 2008; Parsons, 2008) have studied how teachers adapt reading instruction in the midst of a lesson to better meet their students' needs. They have labeled these as *on-the-fly adaptations*. However, teachers also plan adaptations outside of instruction and in response to student data. The current study utilized an Informal Reading Inventory as a tool that may foster planned adaptations in teachers' reading instruction.

Previous researchers have concentrated on the IRIs reliability and validity (Arno, 1990; Burns, 2003; Fuchs, Fuchs, & Deno, 1982; Helgren-Lempesis & Mangrum, 1986; Nilsson, 2008; Spector, 2005), its history (Caldwell, 1985; Johns, 1983; Leslie &

Caldwell, 2009), its comparability to standardized tests (McCracken, 1962; Oliver, 1978) and its intended uses in clinical settings (Johns, 2001; Johnson et al., 1997; Morris, 2008). However, few have explored how and why teachers actually use IRIs. This study aimed to explore planned adaptations which occurred when a teacher analyzed IRI data, and as a result, modified instruction or grouping configurations. One question bounded this inquiry.

- After administering and analyzing an Informal Reading Inventory, what instructional adaptations, which are stimulated by IRI results, are made by three upper-elementary teachers?

Theoretical Framework

Social learning theories, specifically social cognitive theory (Bandura, 1986) and cultural historical theory (Vygotsky, 1978) were used to frame this study. The essence of these theories is that interaction with others stimulates learning (Bandura, 1986) and that learning occurs and is influenced by others as well as the environment (Vygotsky, 1978). According to the cultural historical theory, learning can occur when tools, such as the IRI, are introduced by a more knowledgeable other. In this study, the more knowledgeable other is the author whose role was to train and support the participants before and during the administration and analysis of the IRI results. This tool is meant to serve as a scaffold to support higher order mental functioning. Vygotsky (as cited in Education Encyclopedia, n. d.) suggested that this happens in two planes. First, knowledge is created on a shared plane where learning occurs and is created with others. Specific to this study, the shared knowledge was created during the professional

development sessions with a more knowledgeable other. Once participants constructed this shared knowledge during the professional development sessions, each returned to their classroom and enacted this knowledge on a more individual plane. This study explored the adaptations participants enacted on an individual plane.

Social Cognitive theorists believe that teachers must be given opportunities to engage in social learning opportunities (Bandura, 1986; Tracey & Morrow, 2006). Additionally, when teachers believe their instruction will result in improved learning, they are more likely to engage in self-regulated practice (Bitan-Friedlander, Dryefus, & Milgrom, 2004). According to Bandura (1986) "self-referent thought mediates between knowledge and action, through self-reflection, individuals evaluate their own experiences and thought processes" (as cited in Pajaras, 1996, p. 543). Self-regulated teachers have the ability to become decision makers, reflective practitioners, and are more likely to take charge of the instruction in their classrooms (Randi, 2004). Therefore, the purpose of all professional development should be to cultivate teachers who are goal directed, monitor their own behavior, and adjust instruction to solve pedagogical problems (Corno, 2001; Paris & Paris, 2001).

Along with self-regulating behaviors, teacher efficacy has a role in instructional adaptations. Teachers with high self-efficacy are more active participants in professional development and spend more time planning for instruction because they believe their efforts will result in successful student learning experiences (Adams, 2004; VanEekelen, Vermunt, & Boshuizen, 2006). For instance, in a study of 41 primary grade teachers, Nielsen, Barry, and Staab (2008) found that teachers, who participated in a reading

initiative aimed at placing students in instructional level materials, reported a rise in self-efficacy related to their literacy instruction. This rise in efficacy led to setting higher expectations for their students' success as measured by Likert scale survey. Nielsen et al. (2008) also concluded that their higher efficacy led to higher levels of persistence when faced with later students who had difficulty with reading. By analyzing observations and interviews Stodolsky and Grossman (2000) also found that teachers with higher self-efficacy were more likely to adapt their curriculum. Conversely, teachers who had lower self-efficacy only made minor adjustments to pacing or content. Thus, Stodolsky and Grossman concluded that one of the forces that affect professional change is self-efficacy.

Within the social cognitive framework, self-regulated behaviors (goal setting, persistence towards the goal and reflection) and self-efficacy are considered imperative if participants are to change or adapt instruction (Duffy, 2005; Randi, 2004). The aim of this study was to explore whether teachers adapted their instruction after analyzing their students' IRI results. Therefore, this study was framed with these assumptions.

Research on Adaptive Teaching

When teachers use their professional judgment to adjust instruction, they are being "thoughtfully adaptive." Duffy and colleagues (Duffy et al., 2008) define thoughtfully adaptive teaching as "a form of executive control in which teachers modify professional information and/or practices in order to meet the needs of particular students or particular instructional situations within the framework of the lesson plan" (p. 161). Although others have used different terminology to describe such teachers, this line of

research has two consistent and two emerging themes. The existing themes are (a) the importance of being self-regulated and metacognitive about the methods and materials used in instruction, and (b) the importance of having an ultimate goal that addresses specific student needs.

Consistent Themes in Previous Research

Importance of self regulation. In Shulman's (1986) seminal piece on the use of pedagogical content knowledge, he described a cycle of reasoning and action that exemplifies the self-regulatory process in which reflective teachers engage. In this cycle, teachers have a robust understanding of content knowledge. This content knowledge is then transformed into comprehensible instruction through the careful selection of methods and materials. During and after instruction, teachers evaluate and reflect on student learning and their own effectiveness. Following this reflection, teachers arrive at a "new comprehension" on what it means to be an effective teacher to those specific students.

Lin, Schwartz, and Hatano (2005) contended that "Metacognition, or the awareness of the process of one's thinking, has been recognized as a critical ingredient to successful learning" (p. 243). They cite a study by Hewitt, Pedretti, Bencze, Vaillancourt, and Yoon (2003) as support. In this study pre-service teachers were asked to reflect on another teachers' instruction as well as their own. Those who assessed their own instruction reflected more deeply than those who assessed another teacher's instruction. Additionally, Lin (2001) studied a teacher as she implemented a new math program. The teacher realized after several weeks that instead of lecturing before the problem was

presented on a video, it was more effective to lecture as the students worked to solve the problem. These studies strengthen the important role self-regulation has on whether teachers adapt.

Students' needs. Shulman's work has also informed others as they examined how teachers adapt instructional practices to meet their students' needs. These teachers have been described as *reactors* (Taylor, Pearson, Clark, & Walpole, 2000; Taylor, Pearson, Peterson, & Rodriguez, 2005; Pressley, 2002). They react to teachable moments within lessons that address the needs of their students. Others have explored how teachers react using scaffolds to resolve misconceptions or confusions (Maloch, 2005; Rodgers, 2004/2005). Rodgers studied, counted, and ranked the types of scaffolds a Reading Recovery teacher offered two students during lessons over 12 weeks. She found that the student who received the most scaffolds made more growth in reading based on Reading Recovery assessments. Rodgers concluded that the teacher provided thoughtful, spontaneous scaffolds during the lesson to meet the students' needs. This teacher monitored student cues and respond to these in flexible ways more frequently with one of the students. After the 12 weeks, this student made more growth in reading.

Duffy and colleagues recognized the value of adaptive teaching during their studies on teachers' use of explicit explanation during reading comprehension instruction (Duffy, 1993; Duffy & Roehler, 1987). In these studies, they found that teachers who explicitly explained a concept were effective, but to varying degrees. The explanations were in response to "in the moment" student misconceptions or confusions. Duffy (1993) studied teachers who used explicit explanations, but one adapted her explanation in

relation to spontaneous student cues. For example, while comparing two teachers' lessons on main idea, one teacher defined main idea, gave examples, and prompted students to apply her example to their own reading. Another teacher included these same components, but also adjusted her lessons based on student cues. Duffy concluded that the teacher who made flexible, thoughtful adaptations during instruction was more effective. Another study also reached the same conclusion about how effective teachers use basal text manuals (Duffy, Roehler, & Putman, 1987). The use of the basal manual as a tool was deemed more valuable to student learning than using the basal manual as a script. A decade later, Hoffman et al. (1998) also found that more effective teachers used the basal manuals adaptively based on the needs of their students. Modifying instruction to address specific student needs has been a constant theme in the research on teacher adaptations (Duffy & Hoffman, 1999; Elmore & McLaughlin, 1988).

More recently, Duffy and his colleagues (Duffy et al., 2008) have provided much needed exploratory and descriptive data that has informed when, why, and to what extent teachers use thoughtful adaptations. In their studies, they observed both pre-service and in-service teachers to identify "on-the-fly" adaptations to reading instruction. These "on-the-fly" adaptations have been defined as occurring when a teacher makes an adaptation in the midst of instruction as a means of improving student understanding and/or learning (Duffy, 2005). During each teacher's lesson, a researcher recorded perceived adaptations. Examples of these adaptations included modifying the lesson's objective(s), inserting mini-lessons, and omitting or changing the order of a planned task. Following the observation, each teacher was interviewed to confirm that an unplanned

adaptation took place. Teachers were also asked to give a rationale for their adaptations. The researchers rated the adaptations by their level of thoughtfulness: considerable (creative use of knowledge with a goal that reached beyond the observed lesson), medium (tied to the lesson), and minimal (little thought or unclear rationale). Across the three studies, there were 42 adaptations observed over 48 lessons. Although few reached the highest level (5 of the 42), these studies provided a framework for studying teachers' thoughtful adaptations (Duffy, 2005; Duffy et al., 2008).

As a follow up to Duffy and colleagues studies, Parsons (2008) observed four third grade teachers during guided reading. He analyzed 111 adaptations over 27 reading lessons. In addition to exploring the thoughtful adaptations during these lessons, Parsons also studied the types of tasks teachers created for their students. The study supported his hypothesis that teachers who created more high-challenge, open-ended tasks had more opportunities to be thoughtfully adaptive. Planning these open tasks allowed the teacher the freedom to make choices and adapt based on student needs. Two of the four teachers consistently used higher quality adaptations with higher quality rationales and also created higher-challenge tasks.

Whether these researchers studied math (Lin, 2001) or reading instruction (Duffy et al., 2008; Parsons, 2008; Rodgers, 2004/2005), together these studies provide support that there are two consistent themes in the research on teacher adaptations. Teachers who adapt show evidence of self-regulating behavior and do so with the ultimate goal of meeting their students' needs.

Emerging Themes in Research on Teacher Adaptations

Two less researched themes have emerged in the research on teacher adaptations. These themes include the ideas that (a) all adaptations are not equal and some may have more value to student learning than others and (b) the ways in which a teacher adapts may be related to their professional disposition.

Effectiveness of adaptations. The idea that different adaptations are more or less effective at meeting a perceived student's need is a more recent theme that has emerged in research on adaptive teaching. Again, in their studies, Duffy and colleagues (2008) ranked the rationales teachers reported for their adaptations according to their perceived level of metacognitive thought. The terms they used to describe these levels (considerable, medium, and low) imply that researchers valued some adaptations (medium and considerable) more than others (low).

Stodolsky and Grossman (2000) also found that some instructional changes were more effective than others. They interviewed and observed four secondary educators who were considered competent teachers by the administration after their school completed professional development on culturally responsive teaching. A clear distinction was made between teachers who adapted instruction and those that only made adjustments. Adaptations included curriculum changes in content or materials, changes in instructional techniques, or changes in their relationship with students. Adjustments, which were seen as less effective, only involved reductions in content or modifications in pacing. Stodolsky and Grossman concluded that the teachers who illustrated the most adaptations to their curriculum had better relationships with their students because they had goals for

their students that went beyond achievement in the classroom. One notable conclusion made from comparing the four teachers was that not all adaptations are of equal value. In this study, adaptations that were pedagogically driven were valued. Adjustments that were more pragmatic, especially those that only reduced content, were not considered effective. This idea that adaptations are more effective than adjustments is further supported by Corno's (2008) argument that effective adaptations do not "dumb down" curriculum, but enhance it in such was that give students equal access to the same content.

Teacher dispositions. After studying four teachers' reading instruction, Parsons (2008) concluded that professional disposition may be a factor in why two teachers had higher-quality adaptations and rationales. Both had participated in the National Board of Professional Teaching Standards process. Since this is a voluntary process, their participation provides support for his conclusion that they may be more dedicated to enhancing their professional knowledge and thus more driven to make thoughtful adaptations.

Stodolsky and Grossman (2000) also concluded that teachers' who actively participated in professional development were more likely to adapt their instruction. The two teachers who made more adaptations had several commonalities. These commonalties included the belief that they had vast content knowledge, confidence in their ability to effectively impact student learning, and openness to new ideas.

Summary

To summarize, thoughtfully adaptive teachers make adjustments to their reading instruction in order to achieve short and long term goals they have set for their students. Teacher knowledge and dispositions have been suggested as factors in the quality of adaptations teachers make to their instruction (Parsons, 2008; Stodolsky & Grossman, 2000). Previous research looking at on-the-fly adaptations has also offered insight into the types of tasks teachers implement. Teachers, who plan more open-ended high challenge tasks, have greater opportunities to be thoughtfully adaptive. Since these types of tasks lead to greater engagement (Miller & Meece, 1999), student learning may be enhanced when teachers thoughtfully adapt their instruction. Unfortunately, today's high-stakes testing environments seem to enervate teachers' drive to be thoughtfully adaptive. Instead of relying on high-stakes tests as sole indicators, teachers should use more formative assessments because they provide opportunities to identify students' needs, which is necessary to be thoughtfully adaptive (Duffy et al., 2008; Pearson, 2007).

Research on Informal Reading Inventories

From its inception, an informal reading inventory was meant to aid educators in making informed instructional decisions. In 1915, Waldo (as cited in Johns, 1991), a school superintendent, began using graded reading passages and keeping records of students' reading to inform instruction. He didn't want to create a commercial test, but wanted something for his teachers to use to guide instruction. Waldo's emphasis on using IRIs set an agenda for linking assessment and instruction.

Over the next twenty years, teachers began using basal text passages to create informal reading inventories. These teachers created IRIs were time consuming, but resulted in high content validity because almost all of their reading instruction utilized these basal texts. During this time, the criteria used to evaluate students in the areas of word recognition, comprehension, and reading rate was debated by teachers and clinical faculty at universities (Johns, 1991). Although there was no consensus on the issue, two important factors involving the analysis of IRI results began to appear in the literature. First, instead of using a fixed number of words per minute as the criteria for reading rate, Bolenius and Miller (as cited in Johns, 1991) began using a scale with a gradual increase in the number of words students should read per minute based on their grade level. In addition to this quantitative change in measuring rate, a more qualitative analysis was also suggested. Observing and recording students' reading behaviors (i.e. types of errors, signs of frustration, and physical impairments such as vision) was emphasized along with the quantitative analysis of raw percentage scores for word recognition accuracy and comprehension (Schell & Hanna, 1981).

By 1940, increased effort was directed towards developing standard criteria to be used across various forms of IRIs. In 1942, Betts identified three reading levels based on his research in the reading clinic at the University of Pennsylvania. These were (a) independent (highest level at which the student can read material without assistance), (b) instructional (highest level at which students can benefit from instruction), and (c) frustration (lowest level at which child is frustrated, even with instructional support). Each of these three levels had corresponding criteria in the areas of word recognition and

comprehension. For example, students who read 99% of the words accurately would be considered at their independent level. A student who read 95% of the words accurately would be considered at their instructional reading level. Although some have suggested slightly different criteria (Morris, 1992), Bett's criteria (see Table 1) is still used most often by commercial IRIs (Johns, 2001; McKenna & Stahl, 2003).

Table1: ***Bett's Criteria (McKenna & Stahl, 2003)***

Level	**Word Recognition**		**Comprehension**
Independent	99-100%	*and*	90-100%
Instructional	95-98%	*and*	75-89%
Frustration	90% or lower	*and*	50% or lower

During the 1960s and 1970s more commercially published IRIs began to appear. Several researchers had evaluated basal series and found that there was a great deal of variability in the leveling of passages (Bradley & Ames, 1977). Therefore, using these basal stories as examples of grade level specific passages was not accurate. After this research and due to an increase in commercially prepared IRIs, fewer teachers created their own. This marked a turning point in the emphasis of research on IRIs. Now, with these more "official" versions of IRIs, questions that used to be reserved for standardized testing (i.e. validity and reliability) became more prominent in the research.

During the 1980s, most research questions regarding IRIs addressed the issues of reliability and validity (Dufflemeyer, 1983; Fuchs, Fuchs, & Deno, 1984; Johnston &

Allington, 1983). This continued until the end of the twentieth century. Reading assessments were becoming more about analyzing large data sets and less about analyzing individual student results. This was due to increased pressure from politicians to hold teachers more accountable (Tierney, Moore, Valencia, & Johnston, 2000). Johns (1991) saw this as a threat to the intended use of IRIs. "If and when these changes in publishing occur (publishers are more in tune with test construction), the result is likely to be a 'standardized' reading inventory that will lose the flexibility of the traditional 'informal' reading inventory" (p. 16).

Even though there are few IRI manuals that report reliability, many argue that IRIs are reliable. Furthermore, they agree that imposing the reliability criteria of standardized test is unnecessary (Bader & Wiesendanger, 1989; Johnson et al., 1997; Leslie & Caldwell, 2009; McKenna & Stahl, 2003; Paris, Pearson, Carpenter, Siebenthal, & Laier, 2002). With respect to reliability, it is important that the results can and should always be followed up with careful teacher observation (Johnson et al., 1987).

Not having unequivocal support for the validity and reliability of IRIs is a disadvantage. However, a common theme across the cited articles about the reliability and validity of commercial IRIs is that teacher judgment, in the analysis and use of these assessments, is essential to increasing the reliability and validity (Bader & Wiesendanger, 1989; Johnson et al., 1987; Klesius & Homan, 1985; Leslie & Caldwell, 2009; McKenna & Stahl, 2003; Paris & Carpenter, 2003; Pikulski & Shanahan, 1982). Again, the chief "instrument" in administering an IRI is the teacher. This confidence in teachers'

professional judgment is what separates the IRI from a standardized test. Morris (2008) has illustrated the need for this professional judgment with the following situation.

> For example, if a fourth grade girl reads a fourth-grade passage with 93% oral reading accuracy, should she be categorized as frustrated or instructional at this reading level? The answer is, it depends. It depends on her other fourth-grade scores: her reading rate, comprehension, flash word score, and the nature of her oral reading errors on the fourth grade passage (Did they preserve meaning or not?). The grey areas in the performance criteria are significant, for they signal, even to the neophyte examiner, the need for careful judgment in the diagnosis of reading ability. (Morris, 1999, p. 76)

Instructional Implications

Analysis of the results is only the first step, possible instructional implications have been suggested by Johnson et al. (1987). They believe that IRI results can be used to (a) establish students' reading levels, (b) diagnosis strengths and weaknesses, and (c) enable teachers to be more observant of students' everyday behaviors.

Reading level. Being able to place students in appropriate instructional material is an important way to make use of an IRI. Johnson et al. (1987) stated that an IRI "can determine the level at which the child is ready to function independently in reading, the point at which the child can profit from teacher directed reading instruction, and the level where the child reaches complete frustration" (p. 2). They asserted that identifying these levels is crucial to effective reading instruction because if a student is given material to read during teacher directed time that is too easy, that instructional time with the teacher is less effective. In the same sense, if that student is given material that causes frustration, reading growth is unlikely to occur (Morris, 2008). McKenna and Stahl (2003) also

believe that given the variety of assessments available to teachers, the IRI is one of the best tools teachers have to estimate reading levels.

Morris, Ervin, and Conrad (1996) described a case study of a middle school student that was previously placed in materials at his frustration level. They believe that if the student was instructed with text at his instructional level, his reading would improve. Using an IRI to identify the student's instructional level was crucial to determining the text used with the student during the yearlong study. Once tutored with instructional level material, the student was able to make significantly more progress in reading.

Strengths and weaknesses. Finding a student's areas of strength and weakness in reading is another way to utilize IRI results. Caldwell and Leslie (2008), authors of the Qualitative Reading Inventory, published *Intervention Strategies to Follow Informal Reading Inventory Assessment: So What Do I Do Now?* Chapters are dedicated to different areas of reading. For example, chapters are dedicated to word identification, fluency, comprehension, and vocabulary. In each of these chapters instructional strategies are given to aid educators in meeting the needs of students who have weaknesses in those areas. Being able to thoughtfully plan instruction, based on students needs, is important because not all struggling readers are weak in all areas of reading.

To that affect, Valencia and Buly (2002) established six distinct profiles when they studied 109 fifth-grade students that failed the reading state reading assessment at the end of fourth grade. After administering both standardized and informal assessments to these students, they found that the largest percentages of students (24%) were slow

comprehenders. These students were able to comprehend what they read, but read slowly and without much expression. Another profile they established was that of an automatic word caller (18%). An automatic word caller reads quickly and accurately, but does not comprehend. Obviously, the instructional strengths and weaknesses of these two profiles differ. Therefore, the instruction that followed the analysis of their assessment data should also differ.

Identifying students' instructional levels and strengths and weaknesses in reading were the two most reported uses on a survey conducted by Harris and Lalik (1987). They found after collecting surveys from 254 elementary school teachers that 44% of the responding teachers had examined at least one version of an IRI. Of these teachers, 39% administered an IRI at the beginning of the year, 32% administered an IRI at the beginning and end of each year, and 8% administered an IRI once a month. Unfortunately, 44% of these teachers did not indicate their purpose for administering the IRI. Of those respondents that did indicate a purpose, most used the IRI to find instructional level (39%). Other purposes included to assess comprehension (5%) and to form groups (4%).

Many of the teachers surveyed in Harris and Lalik's (1987) study cited the time this process took as a deterrent to using the assessment in their classroom. This was also a concern in Hollander's (1974) piece titled, "Why is a busy teacher like you giving an IRI?" In her article, she argued that the usefulness of IRIs, especially when compared to standardized tests, outweighs the time commitment because standardized tests typically placed students in material at their frustration level. Hollander suggested that teachers use

their planning time, enlist the help of a reading specialist, or assign other students seatwork as they assessed students.

Everyday observations. Ten years after their initial book on the instructional uses of IRIs, Johnson et al. (1997) suggested that an additional advantage over standardized tests is that teachers who administer IRIs, begin to hone a specific skill that enabled them to better observe their students' everyday reading behaviors.

> A teacher who has constructed and mastered the use of reading inventories can hardly ignore the minute by minute, day by day opportunities for informal evaluation of pupil's performances. Each instructional period becomes part of a continuing diagnosis of existing strengths and weaknesses. When this occurs, appropriate instruction can be planned and provided with decreasing need for formal testing procedures. (p. 82)

These studies and publications offer suggestions on how teachers can utilize IRI results. The two uses that have received the most attention are identifying a reader's instructional reading level and identifying students' areas of strength and weaknesses (Harris & Lalik, 1987; Mokhtari, Rosemary, & Edwards, 2007; Morris, 2008; Valencia & Buly, 2002).

Although Morris et al. (1996) observed how a teacher utilized an IRI, most studies on IRIs have relied on survey data. More studies are needed that observe how and why teachers use informal assessments to inform instruction because as Mokhtari et al. (2007) have written, administering and documenting student assessments is not enough, what truly makes a difference in instruction is how the teachers adapts their instruction in light of the data.

Summary

When teachers are knowledgeable and in control of the analysis of assessment results, they feel empowered and may adapt their instruction more to meet the needs of their students. This sense of empowerment may be the reason that some teachers believe that the time required to administer and analyzing an IRI is worthwhile. The power behind using an IRI, in contrast to standardized tests of reading, is that teachers are an integral part of the analysis. For that reason, the rationale for this study is that it seems that being more active in this process may cultivate opportunities to be more adaptive.

Significance

This study is significant because it bridges two areas in reading research that are pertinent considering the mandates passed under the No Child Left Behind legislation (NIH, 2001). Although federal and state mandated tests have been used in schools for decades, after the passage of No Child Left Behind, the pressure on educators to teach to standardized tests has increased. This pressure has led teachers to distrust their own judgment and rely solely on standardized test data (Pearson, 2007). Most previous research on thoughtfully adaptive teaching has examined the on-the-fly adaptations teachers made in the midst of instruction (Duffy, 2002). However, teachers also plan adaptations prior to instruction. In this study, a planned adaption occurred when a teacher modified instruction or student grouping configurations and stated in an interview that the modification was made as a result of analyzing IRI data. By studying the planned adaptations, instead of on-the-fly adaptations, research on thoughtfully adaptive teaching will be furthered. Additionally by providing support on how to administer and analyze an

IRI and then studying how these teachers use the IRI results to adapt their instruction, research on how teachers use IRIs will also be advanced.

As Shulman (1987) wrote, "Adaptation is like preparing a suit of a particular style, color, size that can be hung on a rack. Once it is prepared for purchase by a particular customer, however, it must be tailored to fit perfectly" (p. 13). Although the "alterations" are essential to effective reading instruction, my study proposes that the adaptations that are planned prior to instruction are also important. The goal of this study was to explore how three teachers planned adaptations to their reading instruction after participating in professional development on how to administer and analyze an IRI.

Definitions

1. *Planned Adaptations*—In this study, a planned adaptation occurred when a teacher modified instruction adaptations or student group configurations.
2. *Stimulated by IRI*—An adaptation was coded as stimulated by an IRI when the participant linked her planned adaptation to a student's or group's IRI results.

Conclusion

The purpose of this chapter was to situate the rationale for this study in previous research on thoughtfully adaptive teaching and informal reading inventories. In this chapter, I stated the problem this study aimed to address and described the theoretical framework. Then, I reviewed research on both thoughtfully adaptive teaching and informal reading inventories. Finally, I explained the significance of this study and defined pertinent terms.

CHAPTER II

METHODS

The purpose of this study was to describe the adaptations teachers made to their reading instruction after professional development on how to administer and analyze an IRI. A qualitative study served as the best methodological model. Since teacher adaptations, linked to a specific assessment has not been thoroughly studied in the regular classroom setting (Creswell, 2005; Maxwell, 2005). Additionally, taking into consideration the previous methodology used by Duffy and his colleagues (2008) in their studies on teacher adaptations, a collective case-study approach was most appropriate. Using this approach, three elementary teachers were interviewed and observed after engaging in professional development on how to administer and analyze an IRI (Johns, 2001). As suggested by Miles and Huberman (1994), data collection took place in the context of each teacher's classroom and was bounded by the grade level of the teachers (upper elementary) and the daily 60 minute literacy blocks. Again, the question this study aimed to answer was:

- After administering and analyzing an Informal Reading Inventory, what planned instructional adaptations, which are stimulated by IRI results, are made by three upper-elementary teachers?

In this chapter, I describe the methods used to answer this research question. Initially, I describe the design of the study. Then, I describe the setting and participants

that bound this inquiry. Following this description, I explain the data collection and analysis process (Miles & Huberman, 1994). Finally, I describe my efforts to ensure validity, and then I describe limitations of this study.

Design

Creswell (2005) defined a case study as an "in-depth exploration of a bounded system based on extensive data collection" (p. 439). Using the interpretivist paradigm as a lens, this collective case study sought to acquire an inside understanding of the instructional adaptations teachers made in response to IRI results.

Since both the individual case and themes across cases were studied this was an instrumental case study. The purpose was to study examine the phenomenon of teachers adaptations to better understand the impact analyzing the results an informal reading inventory had on instruction.

Context

To answer the research question, two factors were considered when purposely selecting the research site. First, the site was similar to other's work on thoughtfully adaptive teaching (Duffy et al., 2008; Parsons, 2008). Link Elementary school is an urban Title I school with over 90 % of its students receiving free and/or reduced priced lunch. Link's total school population was approximately 340 students. Sixty-three percent of these students are Hispanic and 27% of students are African-American. The other 10% of the school population is Caucasian, Asian, or Native American. The seventeen teachers at Link have an average class size of 18. Over the last four years, Link has seen its state standardized reading test scores decline. The year prior to the study only 39% of Link's

students passed their state reading assessment. In addition to this test, primary grade teachers (K-2) had administered a state reading assessment similar to an IRI for several years. Therefore, these teachers were not included in the study. The second factor in selecting Link as the research setting was the principal, Ms. Cooper's, enthusiasm to explore whether her teachers would find the IRI results useful. Previously, Ms. Cooper had been an administrator at another elementary school where I had conducted professional development on administering and analyzing Informal Reading Inventories. When she was hired as the principal, the year prior to the study, she was interested in having the same professional development take place at Link. The school leadership team also showed interest in having Link as the setting of this study.

During the year of the study, Link was also implementing a school wide literacy reform due to their history of low test scores. Two major changes occurred in their literacy program. First, a literacy block was planned for every teacher. Each grade level had an hour dedicated to uninterrupted literacy instruction. Second, because of extra funds, two reading teachers were hired to assist teachers during this literacy block. One of these teachers is the author. The other reading teacher worked with two of the three participants in this study. The third participant had a full time Special Education teacher in her room six hours a day.

Researcher's Role in Professional Development

As the researcher, I am the primary instrument used to interpret these three cases (Maxwell, 2005). Along with being a researcher at Link, I was also a reading teacher. I worked at Link with these teachers, but did not teach in their classrooms or offer any

instructional advice during the data collection phases. Prior to consenting to this study, participating teachers were made aware that my role for this study was of observer and researcher.

Initially, I took an active role during the professional development. Since I am familiar with research on effective professional development (Anders, Hoffman, & Duffy, 2000; Glazer & Hannafin, 2006; Kinnucan-Welsch, Rosemary, & Grogan, 2006; Watson & Manning, 2008) and have had experience training teachers, undergraduate, and graduate students in using IRIs, I conducted six hours of training on administering and analyzing IRIs in August prior to data collection. There were also impromptu discussions and planned follow-up sessions at the end of each nine week quarter throughout the study. During the professional development I discussed the purposes for IRIs (Johnson et al., 1997), provided opportunities for teachers to practice administering the IRI, and allowed time for them to discuss questions and concerns with myself and other participants about analyzing the results. All third-, fourth-, and fifth-grade teachers were required to attend. Since not all of these teachers were participants in this study, the professional development was not the focus of this inquiry, but provided the context for this study.

The Johns Basic Reading Inventory (2001) was used for this study. This IRI was chosen because I was most familiar with its use and because it included 100 word passages for all but the pre-primer level. Having this consistency made analyzing the results less time consuming for teachers. To supplement this manual, each participant also received a copy of *Intervention Strategies to Follow Informal Reading Inventory*

Assessment: So What Do I Do Now? (Leslie & Caldwell, 2005). This manual, which was used independently by the participants, suggested instructional strategies based on Informal Reading Inventory results. Aside from a brief synopsis of its intended purpose, this second manual was not used during the professional development to ensure that the teachers' adaptations were the result of their own volition. This means that I would discuss the analysis of IRI results with the participants, but I did not advise them of any specific instructional adaptations. Additionally, during a follow-up professional development all third through fifth grade teachers and the participants were given a copy of an article (Valencia & Buly, 2002) discussing the different profiles of approximately 100 struggling fifth-grade readers. This article identified these profiles and suggested instructional implications for each profile.

Following the initial professional development, the teachers administered the IRI to all students during the first two weeks of school and then prior to the winter break in December. While the teachers were administering their IRIs, another teacher that had been trained in administering IRIs aided in conducting the assessments.

Participants

Three of the third through fifth grade teachers that participated in the professional development consented to participate. Although Creswell (2005) argued for purposeful sampling when conducting collective case studies, only three participants volunteered for the study. However, these three teachers, described below, differed on their approaches to literacy instruction.

Ms. Wayne

Ms. Wayne (all names pseudonyms) had been teaching third grade for three years at Link Elementary School. She recently earned her Master's degree in reading where she had training on how to utilize IRIs in a clinic setting. She was in the process of applying for the doctoral program at a local university.

Previously, she grouped students during guided reading, but she had not adjusted instruction based on strengths and weaknesses and felt at a loss with severely struggling readers (two grade levels below) and English Language Learners (ELL). Her overall reading program followed a balanced literacy approach. She planned for shared, guided, and independent reading each day.

Ms. Robbins

Ms. Robbins has taught for 16 years. She has taught in several different grade levels, but mostly in the lower grades. After earning her Masters degree in Reading, she was a reading teacher for two years, but did not feel rewarded during those years. She felt removing students from their regular classroom for instruction was too disconnected from the instruction in the classroom.

In the year previous to this study, during interview, she expressed that guided reading was the least effective of the balanced literacy components in her classroom. She rarely held reading groups in a consistent manner partially due to the feeling that she could not meet with all four groups on her own. However, even when the media coordinator began coming to her class, she felt at a loss for planning for the media coordinator's groups. Even though she did follow with the balanced approach to

instruction advocated by the district, several times during the study Ms. Robbins explained that she was truly a "whole language" teacher.

Ms. Cann

Ms. Cann has taught for four years. She was an accountant for several years before deciding that she wanted to teach. She earned a Masters degree in Education and then began teaching. As a fifth grade teacher for three years, most of her reading instruction was project based and she did not group students for reading instruction on a consistent basis. In the year preceding this study, she was the technology instructor at a different school in the same district. Ms. Cann's school used the Qualitative Reading Inventory (Leslie & Caldwell, 2001). She had administered it, but she did not use the QRI to inform her own classroom instruction.

During this study Ms. Cann taught a fourth- and fifth-grade combination class of 9 to 11 students that were transitioning from being in a self-contained class for students with learning disabilities. Beginning with this school year, the district disbanded these self-contained classes. During the first three weeks of school several regular classroom teachers were concerned that these students were not prepared for a larger class and felt unable to meet these students' needs. Therefore, the school leadership team decided to use an additional teaching position the school had earned to create a smaller class to help these students with the transition. Ms. Cann was their classroom teacher, but she also had a certified Special Education teacher in her room six hours a day. These teachers team taught all subjects. However, only Ms. Cann's reading groups were the focus of the observations throughout the study.

All three teachers administered and analyzed the IRIs in a similar manner. However, the ways in which they adapted their instruction may differ because of their varied approaches to reading instruction.

Data Sources

These participants administered the IRI during the first two weeks of school. Data collection began after the initial IRIs were administered. In order to improve internal validity during analysis, prior instrumentation was used to address the research questions which provided consistently across cases. To aid in interpreting the data gleamed from these instruments a pre-study survey (see Appendix A), interviews following the teachers' administrations of the IRI (see Appendix B), field notes from two-day observations of their literacy block(see Appendix C), transcripts from interviews following the observations (see Appendix D), and a final exit interview (see Appendix E) were analyzed. A matrix displaying when these data were collected and how the data collected related to the research question is displayed in Table 2.

Pre-Study Survey

Before the professional development on administering and analyzing the Informal Reading Inventory, all teachers participating in the professional development were asked to complete a written survey. This survey included questions on how the teachers previously planned for reading instruction, previously used assessments, and background information on their years of teaching experience and educational history. The purpose of this survey was to determine what information each teacher previously used to plan instruction.

Table 2. ***Data Matrix***

Pre-Study Survey (Written)	Post IRI Administration Interview	Observations (Field Notes)	Post Observation Interviews (Audio)	Post Study Interview
August	Early September Early December	Two each month during September October November January	One after each set of observations	During the final interview in January
To determine the previous instructional methods	To determine what information they learned about their students from analyzing the IRI	To gain better understanding of the context of the teacher's reading instruction	To determine which, if any, adaptations to instruction were stimulated by the analysis of IRI results	To elicit reflection on why they did or did not utilize IRI results to adapt their instruction

This allowed for comparisons to their instruction following the IRI professional development. When a teacher reported an instructional adaptation, meaning the adaptation was planned and the result of the administering and analyzing the IRI, I was able to verify this as an adaptation, or change, by referencing her pre-study survey. For instance, if previously the teacher only used the state Standard Course of Study to plan instruction, but during the study began using the students' results from the IRI to plan more specific grouping configurations, this was an example of an adaptation. In this example, the teacher moved from using a curriculum centered approach to planning to a more student centered approach based on the students' IRI results.

Teacher Observations

Over the course of the study, I observed each participant four times on two consecutive days during their hour guided reading literacy block. During these observations, a protocol was used to focus the observation. During these focused observations, field notes were taken on how the students were grouped, what materials the teacher used, and what adaptations seemed to take place based on previous observations and/or the pre-study survey. For instance, if in the first month of the study a teacher was teaching whole group, but during the second month of the study, the teacher began breaking the class into smaller groups, this would be considered a planned adaption because it was a change in the way the teacher previously grouped students. Three of the two day observations took place after the initial administration of the IRI between September 15 and December 12. The fourth set of observations was scheduled after the second administration of the IRI in January. These observations were not meant to restrict the teachers reported planned adaptations, but to provide a context to the researcher of the participants' reading instruction.

Teacher Interviews

Three types of teacher interviews were conducted. Each teacher participated in semi-structured interviews following each of the two administrations of the Informal Reading Inventory. Teachers administered the Informal Reading Inventory during the first three weeks of the school year and again prior to the winter break. The semi-structured interview aimed to discern what the participants learned about their students' reading abilities and what, if any, influence this may have on their planning of future

reading instruction. Any influences the teachers suggested were noted as focus points of interest during follow-up-observations in their classroom. Asking them to verbalize this provided a window into probable adaptations.

In order to increase the trustworthiness of my interpretations, post observation interviews were conducted with the teachers following the second observation each month. The aim of this interview was to determine what information the teacher used to plan for instruction and/or group students. Each teacher was asked to describe the observed lesson and the information that she used to plan for the instruction. The total time for these interviews varied, but did not exceed fifteen minutes. These interviews were conducted after school or during the day when teachers did not have instructional responsibilities.

Finally, after the fourth set of observations was complete, teachers were asked to reflect upon the study. The aim of this interview was to elicit why they did or did not utilize their students' IRI results as an impetus for adapting instruction. During this exit interview several more pointed questions that specifically addressed their IRI use were asked.

Method of Data Analysis

Analysis of these multiple sources followed the three phase process described by Miles and Huberman in their sourcebook on Qualitative Data Analysis. Although this process is reciprocal, the three phases include data reduction, data display, and drawing and verifying conclusions.

Phases of Data Analysis

The data reduction phase(s) is a "form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that 'final' conclusions can be drawn and verified" (Miles & Huberman, 1994, p. 11). Interview transcripts and observation field notes were analyzed to identify participants' planned adaptations. In this study, a planned adaptation occurred when a teacher modified instruction or student grouping configuration based on their students' IRI results. Each of these adaptations was coded by categorizing the data using a predetermined, but not fixed, set of initial codes (Stake, 2005). Research on the previous uses of IRIs and instructional grouping was used as a coding lens and aided in sorting and organizing the data collected in the field (Harris & Lalik, 1987; Johnson et al., 1997; Morris, 2008). The initial codes for the adaptations as shown in Table 3 included modifying instructional objectives (Allington, 1983; Johnson et al., 1987, 1997; Klesius & Homan, 1985; Morris, 2008; Valencia & Buly, 2002), omitting instructional tasks or assignments (Johnson et al., 1987, 1997; Valencia & Buly, 2002), offering additional support or tasks (Harris & Lalik, 1987; Johnson et al., 1987, 1997), grouping students by instructional reading level (Fountas & Pinnell, 1996; Johnson et al., 1987), and grouping students by specific instructional needs (Johnson et al., 1997; Schell & Hanna, 1981; Valencia & Buly, 2002). Due to the qualitative nature of this study, the coding process involved revisiting the relevance of the initial codes as data was collected.

Table 3. ***Initial Codes for Adaptations***

1	Modifies instructional objectives
2	Omits activity or tasks
3	Offers additional support or tasks
4	Groups students by reading level
5	Groups students by instructional need

In the data display phase(s), the coded data was organized into compressed visual displays to illustrate the outcomes of the data reduction phase within and then across cases. In this study, coded data was organized in a time ordered-matrix (Miles & Huberman, 1994). After each point of data collection, the matrix was utilized to identify and compare how the participants adapted their instruction over time. In this matrix, data was chronologically organized so that teachers' adaptations were more visible (see Table 4). Creating this visual display allowed for more trustworthy interpretations during and after the data collection phases. Having this visual display allowed for more effective code checking sessions during the third phase of data analysis. Each time adjustments were made to the coding scheme, this phase was revisited to reflect these changes.

During the third phase, drawing and verifying conclusions, the coded data, as well as the visual display of this data were further analyzed for similarities and differences within and across cases. Interpretations were made about how and when these teachers adapted their reading instruction as a result of administering and analyzing IRIs. As suggested by Creswell (2005) and Miles and Huberman (1994), this process was

reciprocal and after drawing and verifying initial conclusions, adjustments to the codes were made during code checking sessions with a peer researcher.

Table 4. ***Example of a Time-Ordered Matrix***

Participant	Post Assessment Interview		Observation/ Interview 1		Observation/ Interview 2		Observation/ Interview 3		Observation/ Interview 4	
	Adap.	*Code*	*Adap.*	*Code*	*Adap.*	*Code*	*Adap.*	*Code*	*Adap.*	*Code*

These "code checking" sessions were scheduled after the third round of observations and interviews and then again at the conclusion of data collection. After adaptation codes were identified and revised by myself, a peer researcher conducted "code checking" to verify and refine the codes. This researcher was familiar with the study and was conducting a related study on thoughtfully adaptive teaching. During code checking sessions, the time ordered matrix was shared and the other researcher was asked to code the adaptations made by the participants using the codes in Table 3. Afterwards the codes were compared and an inter-rater agreement of 94% was found (Miles & Huberman, 1994, p. 64). Three adjustments were made during these sessions.

Adjustments during Analysis

Throughout the three phases of analysis, the coding scheme was adjusted based on the data that were collected in the field. Three changes resulted from reviewing data

during the data reduction phase and verifying phases. The rationales for these adjustments are described below and are displayed in Table 5.

After reviewing the time-ordered matrix during the last code checking session, adjustments were made to the initial coding scheme. During this process, the decision was made to eliminate one of the codes because it was not supported by the data. Originally, separate codes were given for adaptations that involved omitting or adding specific tasks to support students' reading instruction. However, the three participants never described their adaptations as omitting support a student or group. Instead, participants only described their adaptations as giving support to students in a specific area. After discussing this issue during a code checking session, the second code, omits activity or tasks, was deleted.

In addition, the data did not support having separate codes for *modifies instruction objectives* and *offers additional support and tasks*. Initially, the discriminating factor between these two codes was that *modifies instructional objections* represented an instance where the participant indicated a change in the objective, but did not specify an instructional strategy to address that need. There was only one instance where the peer researcher and I assigned this code. After reviewing the data, both the peer researcher and I decided to collapse the '*modifies instructional objective'* code into the '*offers additional support and tasks.'*

Finally, as a result of the code checking sessions, it became clear that two of the codes needed to be better defined. During the first session, the peer researcher had difficulty distinguishing between an adaption that involved adding additional support and

an adaptation when a teacher grouped students by an instructional need. As noted in the adjustments shown in Table 5, a teacher that created a new group for the expressed purpose of meeting specific students need(s) would be coded as a four. A teacher that decided to add a task to an already established group based on IRI results would coded as a two. This distinction was necessary because creating a new group involved more planning by the teacher than adding a task to an already established group. For example, after the first administration of the IRI, a participant grouped four students that were significantly below the words per minute range on their instructional level passage. This group was in addition to an already established guided reading group. Since this group was created based on students' need for additional fluency instruction, the fourth code was most appropriate.

Table 5. Revised Codes for Adaptations with Examples

Code	Label	Supportive Previous Research	Example
1	Offers additional support or tasks (within an established group)	(Harris & Lalik, 1987; Johnson, Kress, & Pikulski, 1987, 1997)	During an interview, a participant states that she decided to plan timed reading with a group that had been created before she planned the timed reading task.
2	Groups students by reading level	(Hollandar, 1974, Johns 1991, Harris & Lalik, 1987; McKenna and Stahl, 2002)	During an interview, a participant states that when she grouped specific students she did so because they had similar instructional reading levels according to their IRI.
3	Creates a group for students based on an instructional need	(Mangrum & Forgan; Valencia & Buly, 2002)	During an interview, a participant states that when she grouped specific students she did so because they had low comprehension scores according to their IRI. The purpose of this group would be to give additional instruction support specifically on comprehension.

In sum, during the three phases of data analysis suggested by Miles and Huberman (1994), adjustments were made to the initial coding scheme to reflect the data that was collected. Each time an adjustment was made, the data reduction phase was revisited to make adjustments to the codes, the data display phase was revisited to reflect the changes to the coding scheme, and the data verification phase was revisited so that any adjustments were discussed and verified by a peer researcher. By visiting and revisiting these three stages the validity of my interpretations was strengthened.

Validity

The third phase in the Miles and Huberman (1994) process is verification of the conclusion. Verification of my conclusions was the result of triangulating both the methods and the data, having other researchers and participants involved in the data analysis process, and being reflexive in reporting my own role and biases. By verifying my interpretations in these ways, I worked to increase the internal validity of this study (Milinki, 1999).

"Triangulation has been generally considered the process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation (Stake, 2005, p. 454). Collecting multiple forms of data (the survey, interviews, and observations) increased the accuracy and authenticity of my interpretations, thus increasing the interpretive and theoretical validity (Milinki, 1999).

As previously mentioned, during the three phases of the data analysis, another peer researcher was included. Since this researcher was knowledgeable about the construct I am using, but not directly involved in this study, she was able to challenge my

categorization and interpretations within and across cases. These discussions resulted in the three previously described adjustments to the initial coding scheme.

Additionally, my bias was a validity threat. During the descriptive and interpretative phases of the study, each teacher participated in member checks (Maxwell, 2005). At the conclusion of data collection, a contact sheet, based on the transcripts of the interviews and the field notes was shared with each participant as a means to increase descriptive validity. Also, once a draft of the analysis was complete, participants were asked to read and verify that the interpretations made were accurate. After reviewing the description of their individual adaptations, participants were asked to sign a member check approval form (see Appendix F).

In addition, by having an inside role as a member of Link's staff, and because the participants may have felt obligated to utilize the IRI data more frequently during my observations, I conducted both formal announced and informal, unannounced observations throughout the study. During these member checks the participants did not express any concerns about my interpretations.

Finally, and most importantly, to tackle the biggest perceived threat of qualitative research, researcher bias, I have reported my role in the study. My goal was to be *reflexive* throughout the study by engaging in critical self-reflection about my bias by monitoring and controlling my own opinions (Milinki, 1999). The data display phase as well as the member and code checking sessions aided in being reflexive.

Ethics

In addition to addressing these possible validity threats, it was also imperative to address ethical concerns (Maxwell, 2005). The nature of case studies is personal because it involves an in-depth understanding of individuals' behaviors, beliefs, and language. Additionally, through publication, these personal experiences are thrust into a public realm (Stake, 2005). In addition to following the guidelines set forth by the Institutional Review Board, I took careful consideration to counteract two ethical concerns.

One risk the participants faced was being exposed as unqualified educators. The immediate threat involved Ms. Cooper, the principal. Although pseudonyms were used in the description of these case studies, the identity of the teachers' will be obvious to Ms. Cooper when she reads their background information. To lessen this risk, I discussed the purpose of the study and explained that the description of a teacher who adapts very little or a teacher who makes considerable adaptations are both valuable.

Additionally, another risk participants face was feeling abandoned after the study was complete. To balance this risk, I have agreed to be more active in advising and supporting the participants who want to continue adapting their reading instruction. As a reading teacher at Link, I agreed to be available for model lessons and for in-class support once the data collection phase of this study ended.

Finally, disruption of instructional time is another ethical consideration, especially in light of the high-stakes testing environment. Once the study began, my role in the classroom was of an observer. My presence in the classroom should have caused minimal disruption to the students since I was recognized as a member of the Link staff. There

were instances in which the teacher had to participate in a follow-up interview during the school day. These interviews were conducted during the teachers' planning time.

Limitations

Since a case study is defined as a study of one or more individuals or groups, the limitations of generalizability are inherent. Although internal generalizability was strong due to the verification of my conclusions by both participants and a peer researcher, external generalizability is not possible due to the nature of case study research (Maxwell, 2005).

Additionally, since only three participants from the professional development on IRIs volunteered for this study, the lack of purposeful sampling is a limitation. Ms. Cooper, Link's principal, did require all third, fourth, and fifth grade teachers to administer the IRI twice a year, however only three participants consented to this study. Although limiting, the three teachers that consented had differing approaches to reading, thus they offered a variety of perspectives. Further, due to the number of interviews and time required for the observations and interviews, three participants was allowed the study to be more manageable and descriptive.

Conclusion

In conclusion, a collective case study design was used to describe the adaptations of three classroom teachers who administered and analyzed the Basic Reading Inventory (Johns, 2001). By doing this, previous research on thoughtfully adaptive teaching was expanded and the gap in the literature on how and why teachers utilize IRI results was addressed.

CHAPTER III

RESULTS

The purpose of this case study was to describe how teachers adapted their reading instruction after administering and analyzing an IRI. Taking into consideration the previous methodology used by Duffy and his colleagues in their studies on teacher adaptations, a collective case study approach was most appropriate. Additionally, a case study design was suitable for this study because it facilitated a more in-depth understanding of how teachers adapted their instruction. As suggested by Miles and Huberman (1994), data analysis involved three reciprocal phases. These phases, as well as this case study, were bound by the following research question:

- After administering and analyzing an Informal Reading Inventory, what instructional adaptations, which are stimulated by IRI results, are made by three upper-elementary teachers?

In this chapter, I describe the adaptations of each teacher individually and collectively. For each participant, I review her background. Following that review, I describe the monthly adaptations each participant reported as being stimulated by the IRI. Then, I describe the adaptations across cases by code and across time.

Individual Cases

Wayne

Ms. Wayne is in her fourth year of teaching third grade at Link Elementary. She recently earned a Masters degree in Reading in which she was trained to administer and analyze another version of an IRI. However, she had only used this knowledge in a clinical setting during one-on-one tutoring.

After Ms. Wayne administered the Johns (2001) IRI to all of her students, she was pleased with her students' instructional reading levels. "I was surprised by the number of higher kids I have this year. I was pretty surprised I had six (out of seventeen). So I think they may need more challenging stuff. Some of them I'll have to work hard to keep their interest." She was also pleased with the information the IRI provided her at the start of the school year. During an interview she said, "Last year we were given DIBELS at the beginning of the year and I was like, 'I don't know how to do that. I don't know what that is.' It's in a shrink-wrapped box somewhere. I feel like this year I have a better handle on where they should be." Ms. Wayne used the results from the IRI to inform her instruction. Table 6 displays the number of adaptations she planned for each of the three codes described in Chapter II. An example of an interview response is provided for each code (see Table 6).

Below, I describe some of the adaptations represented in Table 6. I will describe these adaptations by month. Table 7 displays the number of adaptations Ms. Wayne planned during the four months she was observed.

Table 6. ***Adaptations by Code for Wayne***

Code	Number	Example Quote from Interview by Code
Offers additional support or tasks within an established group	5	"In the holiday group, we are working on fluency by doing readers theatre and timed repeated reading."
Groups students by reading level	5	"Yes, in Social Studies we have books that are leveled. We have below grade level, on grade level, and above grade level books. I would put [students] in groups based on their IRI and let them talk about [the book] and answer some questions."
Creates a group for students based on an instructional need	4	"The number one reason I used the IRI was grouping. We looked not so much at the level but what strategies they need to work on."

Table 7. ***Wayne's Adaptations across Time***

Month	Offered additional support within an established group	Grouped students by reading level	Created a group for students based on instructional need	Total
September*	1	3	2	6
October	3	0	0	3
November/December	1	0	0	1
January*	0	2	2	4
Total	5	5	4	14

**First observation after the administration of the IRI.*

September. In September, Ms. Wayne planned six adaptations that were attributed to analyzing her students' IRI results. The majority of these adaptations (five of six) involved grouping her students by both instructional reading level and specific instructional need.

During Ms. Wayne's first observation she had three reading groups. One group met with her, one group was doing independent reading at their desks, and a third group was met with the Primary Reading Teacher (PRT). Ms. Wayne initially grouped these students by reading level. Each of these three groups read books at different levels during guided reading. Based on the IRI, her lowest group read at a primer or first grade level, her middle group read at a second grade level, and her highest group read at or above the third grade level.

During the post observation interview she also described how her students were grouped by specific areas of reading:

> The PRT and I sat down and looked at their reading levels and to see if they were having trouble with fluency or how they were with comprehension. We broke them up into three different groups so that we can hopefully work on those areas. With the lowest group we planned to focus on word recognition.

Ms. Wayne's focus on word recognition with her lowest group was evident during the observations in September. She discussed chunking, a word recognition strategy. She explained to students that chunking was when you look for parts of the word that are familiar. She reminded them that they should not sound all words out letter by letter. Later in that same lesson when a student came to a word he did not know she reviewed the chunking strategy. The student was then able to apply the strategy and read the word.

When the group came back together she recognized the student for his ability to use the target strategy for the lesson. “When I got to hear you read, I heard a lot of good strategies. [Student] went back and reread the word *harm*. He read it by chunking the word.” As she was talking with students, she also showed another student in the group how to chunk the word. This was the student who had the most trouble reading the book that day.

When she met with her second group, the highest group, they read *Horrible Harry Moves up to Third Grade* (Kline, 2000). Even though she was aware this book was below this group’s instructional reading level, she decided to use it because she was attempting literature circles for the first time. After Ms. Wayne administered the IRI, she recalled a conversation she had with the school’s curriculum coordinator about literature circles. The curriculum coordinator had suggested that students in the higher reading groups should be involved in more independent reading such as literature circles. Unlike her first group, she planned to focus on comprehension through literature circles with this group. She told the group that they would be learning how to do different reading jobs that “good readers do.”

Another adaptation involved the students who were reading independently at their seats while the other students were meeting with their guided reading groups. When students were at their seats, they were all reading leveled text that came with the newest Social Studies text adoption. However, different students were reading different books. When I asked Ms. Wayne about this in our post observation interview, she explained:

> Well, we have leveled readers that go with our Social Studies text. There are three different sets of books that go with the same content we are studying right now. They have below level, on level, and above level. So, I matched them up, based on their reading group placement, with the students. There are 15 minutes of down time and that is a good way to get Social Studies in.

Finally, one of the other adaptations Ms. Wayne planned was to have a small group of students meet with the PRT for an extra 15 minutes at the end of her reading block. These were students who had less than 92% accuracy on the pre-primer or primer level IRI passages. During this 15 minute period, Ms. Wayne asked the PRT to do word study lessons with the students. These word study lesson involved students sorting cards and playing games based on spelling patterns.

October. In October, Ms. Wayne attributed three adaptations to her students' IRI results. Unlike September, all three of the adaptations provided additional support for students in established groups.

She continued to focus on word recognition with her lowest group, but also began to emphasize fluency. Comprehension was still the focus with her highest group. Ms. Wayne also continued using instructional level material with each of her groups. In her post observation interview she explained,

> The *Stuart Little* (White, 2006) group (highest group) is well versed with decoding so we are working on comprehension, trying to make sense of the book. [Student]'s group (lowest group), we are working on fluency. The PRT and I are working on fluency with them, doing readers theatre and timed repeated reading. I'm still focusing on decoding with the lowest group. They have 30 minutes with me to talk about decoding and then work on fluency.

Within these established groups, the adaptations she described in her interview were evident during her observations. The lowest group was reading a play about different holidays. This play was written at an end of first grade level. Although she also made sure these student comprehended, during the two days of observed lessons she clearly stated to students that their focus was on word recognition and fluency. For example, she began one lesson by asking students "What can we do if we need to decode a word?" She also planned a lesson on inflected endings because she had noticed that students were leaving off the endings of words on their IRI passages. This word recognition focus and a new focus on fluency were intertwined in the observed lessons.

During an observation of this group, she told the students, "We need to focus on the whole part of the word. This will be the fourth time reading the play. Do you feel your fluency is getting better?" The students nodded. After orally reading the play as a group, she told students, "I feel like your expression is getting better. You are making it sound more real. An audience would really enjoy hearing this. Girls I like how today you added more expression. You were excited. I was very impressed." She also planned to have students tell her a word recognition strategy before they left the group. She closed her lesson by saying, "Today we focused on endings and decoding strategies. Everyone needs to give me one more strategy before you leave."

Although this was not coded as a new adaptation, it is worth noting that she continued preparing students in her highest group for independent literature circle discussions. This month, the students were reading a book on their instructional level, fourth grade. Since the students had read a chapter independently, the students shared

words they had chosen to discuss with the group. During the observation, I noticed that these students, when not with her, were reading their guided reading book independently. I also observed two of her students discussing vocabulary words from the chapter they read for homework the previous night.

Lastly, with the same group that had an additional word study lesson last month, the PRT began doing timed repeated reading with the students. Ms. Wayne noticed these students read at the low end of the words per minute range. Based on the research that was shared during her Master's program, she felt having these students begin timed, repeated reading would increase their reading pace and improve their fluency.

November/December. As noted in Table 7, Ms. Wayne only attributed one instructional adaptation to the IRI results. At this time, the students were still in the same groups. However, during this observation, instead of having students read trade or chapter books, students were reviewing a multiple choice reading test. The school system suggested that teachers review these tests with the students following the dissemination of the results. Ms. Wayne believed reviewing these tests in small groups was more beneficial than doing so with the whole group because the students were in different stages of reading.

With both of her groups, she reviewed the same passages and questions; however, with the lowest group she planned to read the passages to the students. For her higher group, she had the students take turns reading the passages before discussing the questions that followed. During the post observation interview, she explained that students in her lowest group are not able to read the passages. "I felt like whenever I read

to them they picked up on some of the things they missed. I would say a few of them got the right answer after I read it to them. For some of them, this boosts them a little bit, like [student]. It makes him feel a little better."

At the end of this interview, she expressed interest in beginning the second administration of the IRI. In the past month she had a few new students added to her class, and she noticed that the middle group, the group that met with her PRT, was getting large (8 students). She was anxious to use the new IRI results to regroup these students.

January. In January, Ms. Wayne planned four adaptations that she attributed to analyzing the results from the second administration of the IRI. Similar to September, all four of these adaptations involved grouping her students by instructional reading level and specific instructional needs. After re-administering the IRI, Ms. Wayne changed her student grouping to reflect the new IRI results. She grouped students in four different groups. She still had a low and high group, but in January she had two middle groups. Two of these groups were based solely on their instructional reading level and two were based partly on instruction reading level, but also had an emphasis on specific areas of weakness.

During this month's observations she also changed the groups that she read with during her hour reading block. Now the PRT was teaching the lowest and highest groups and Ms. Wayne was teaching the two middle groups. Even though the PRT had begun working with Ms. Wayne's previous groups, many of the same adaptations Ms. Wayne began continued. The highest group continued to participate in literature circles and the

lowest group continued to have a focus on fluency. However, as Ms. Wayne noted in an interview following the second administration of the IRI, she was not going to focus as much on word recognition with this group during the next nine-week period. She was pleased with their word recognition scores on the IRI. She explained, "I was really proud. In terms of accuracy, they are really starting to apply their strategies. Before they were just sounding out words." She also mentioned that the lowest group's fluency (as rated by words per minute) had improved. For example, one of the students in her lowest group read the primer passage of the IRI at 32 words per minute in September. In December, he was reading the passage with more accuracy at 55 words per minute. Another student in that group was reading the same leveled passage at 22 words per minute in September, but at 71 words per minute in December. She shared these results with the students:

> We showed them that this is what you made first quarter and look now at what you did. We showed them how they increased. A lot of the students could relate that to their repeated reading scores because they were always keeping up with how many words they read each time (in timed-repeated reading). It's becoming a common dialogue.

After reviewing their IRI results she realized some of her students in the middle group needed additional support with fluency. Based on the improvement of the lowest group's fluency, she felt the students in her middle group would benefit from timed reading. During the observations in January, she had one of the middle groups doing timed reading. It was obvious that she had already begun this adaptation before my observation because during the first day students asked when they would do the timed reading on that week's book.

Summary. In conclusion, Ms. Wayne reported adaptations to her instruction during all four observation cycles. However, in December, the observation furthest from an administration of the IRI, there was only one adaptation that she reported as being stimulated by her students' IRI results. During the post-study interview, Ms. Wayne said that the IRI was most useful in grouping her students by their instructional reading level and the strategies in which they needed additional support. This statement was supported by the observations of her reading block instruction. Students were always grouped by instructional reading level, and several times in the study, specific instructional strategies such as timed reading or word study were introduced to groups that needed additional support in these areas. In addition to these adaptations during the reading block, Ms. Wayne also used the IRI to adapt the way she had previously planned her independent reading time. During one observation she used leveled Social Studies trade books and matched those books to students' instructional reading level. Based on her interview responses and observations it was evident that Ms. Wayne adapted her instruction to meet her students' needs.

Robbins

Throughout this study, Ms. Robbins was observed for two consecutive days during her reading block. Ms. Robbins is in her sixteenth year of teaching. Currently she is a third grade teacher, but she has also taught second grade and was a reading teacher for two years at a different elementary school. She has earned a Master's degree in Reading. During her graduate program she was introduced to another version of the IRI.

After Ms. Robbins administered the Johns (2001) IRI to all of her students, she replied, “I was surprised that so many students were close to grade level.” Of 16 students, she had four students who were reading above grade level and eight who were reading at grade level. After her first analysis of the IRI results, she decided she wanted to go back and reevaluate the students who were reading on grade level:

> I need to go back and evaluate where they are on that continuum, to see if they can be in the same group. I was going to have the third grade group, who had trouble with comprehension together, but then I thought I could put students who were having trouble with comprehension with students who were reading slightly below grade level. They would pull them up. One student is so high on word recognition accuracy and words per minute, maybe that would slow her reading down.

From the beginning Ms. Robbins used the IRI results to plan instruction and group students. Although she wanted to group students by reading level, she looked beyond their reading level and analyzed their results in terms of word recognition, fluency, and comprehension. Table 8 displays the number of adaptations she made for each of the three codes that were described in Chapter II. An example of an interview response is provided for each code. Below I describe some of the adaptations represented in Table 8. I will describe these adaptations by month. Table 9 displays the adaptations Ms. Robbins planned during the months she was observed.

September. In September, Ms. Robbins planned nine adaptations that she attributed to analyzing her students’ IRI results. After administering the IRI, she created four groups. Two groups were created using the students’ instructional reading level and two groups were created based on specific student needs.

Table 8. ***Adaptations by Code for Robbins***

Code	Number	Example Quote from Interview by Code
Offers additional support or tasks within an established group	9	"And I did have some words that we went over to begin with because those two little boys, the level that they are at, they are struggling to figure out what the words mean sometimes."
Groups students by reading level	3	"The students are grouped in four groups. Two groups are on grade level and meet with me. The other two groups were slightly below and really below and read with the ESL teacher. Each of these groups uses material at their instructional level."
Creates a group for students based on an instructional need	2	"[A student] was reading on a first grade level. He's with the ESL teacher. He doesn't go to ESL, but language is something he could use. He struggles with word recognition and vocabulary."

Table 9. ***Robbins' Adaptations across Time***

Month	Offered additional support within an established group	Grouped students by reading level	Created a group for students based on instructional need	Total
September*	5	2	2	9
October	3	0	0	3
November/December	0	0	0	0
January*	1	1	0	2
Total	9	3	2	14

**First observation after the administration of the IRI.*

She also had several reported instances when she supported these students after she established their groups. Many of these adaptations are described below.

During the first observation Ms. Robbins had her students in five reading groups. During her reading block, an English as a Second Language (ESL) teacher and assistant

were in her room. The ESL teacher had two groups. The ESL assistant taught a group that had an instructional reading level of first grade. All but one of these students was classified as ESL. Ms. Robbins decided to place an African American student with an ESL group because she felt "language is something he could use." Based on his IRI results, he needed more phonics instruction than the other non-ESL students in her class. She explained in her post observation interview that this group was "very phonics based because they are reading on a first grade level and part of it is they can't figure out the words." Ms. Robbins planned the weekly lessons for the ESL assistant to ensure the lessons were focused on different word recognition strategies.

While the ESL teacher and assistant met with their groups, Ms. Robbins met with two groups. The first group had five students that were on grade level according to the IRI. She explained that this group's area of weakness was comprehension. "I'm deciding part of our problem is we are not thinking while we are reading. They are calling words. They haven't quite figured out that reading the word is not enough." Prior to the observation, the group began reading the book *Flat Stanley* (Brown, 2003) which is at a beginning third grade level. As the group discussed the chapters they had already read, Ms. Robbins deliberately asked questions that scaffolded the students' comprehension of the book. When she asked a question she reminded the students to silently reread if they were unsure of the answer. She also reminded students to "Use your noodle and think while you read." Another way she planned to support this group's comprehension was to provide them with reading journals. In these journals they were asked to take notes as they read independently. At other times they drew graphic organizers or character charts

in the journals. She also had students read one page and then jot down important ideas or events that happened. The journals, planned scaffolded questions, and the grouping of these students were all observable adaptations Ms. Robbins attributed to the group's IRI results.

The second group had two students. After analyzing their IRIs, Ms. Robbins chose a second grade text, *Nate the Great* (Sharmat, 2002). Unlike her previous group, she wanted to focus more on word recognition and vocabulary. "I did have some words that we went over to begin with because those two little boys, the level that they are at, they are struggling to figure out what the words are and what they mean sometimes." During her instruction she also planned to have these students only read one to two pages at a time during the group meeting. After the lesson she explained, "I realized that what I did in the past wouldn't work. This group is quite a bit lower, so I had to step back from what I did last year and the pace I did it." While they read she asked them to "put a finger up" if they came to a word they did not know. One of the students did raise his finger and she helped him with the word *doorknob*. She explained that this was a compound word and got up from the group to show the student a doorknob in the classroom. Although not a planned adaptation, she seemed more aware of opportunities that arose to help support these students' word recognition and vocabulary development.

Finally, Ms. Robbins also used the IRI to be more selective when choosing books for students as they prepared for a book report. "[Students] could choose any fiction book they wanted, but it needed to be on their level. If it was too easy, they needed to select another or if it was too hard I told them that may be a book they could read later in the

year." She further explained that she used their instructional IRI level to aid students in selecting the books.

From her planned adaptations (i.e. grouping theses students together, choosing leveled text, and focusing on word recognition and vocabulary) and the way she supported these students, it was clear the Ms. Robbins was adapting her instruction using the information from the IRI.

October. As shown in Table 9, the number of adaptations Ms. Robbins planned declined in October. She only reported three adaptations that were planned as a result of analyzing her students' IRI results. All of these adaptations offered additional support to already established groups. These adaptations are described below.

In October, Ms. Robbins continued to group students by instructional reading level and continued to focus on comprehension with her grade level group. These students were reading *Cam Jansen and the Triceratops Pops Mystery* (Alder, 1995). While reviewing what they had previously read, Ms. Robbins reminded these students about the importance of being aware and monitoring their comprehension. At one point she told students: "Put your hands up on your ears and turn on your computers." Then following a mini-lesson on sequencing events, she discussed different methods of reading that may allow them to better understand the story. She explained,

> Some people remember stories better if they read it to themselves and some remember stories if they are read aloud. We talked about how Ms. Robbins needs to hear it to remember it. My son has to read it silently. I want you to think about how you need to read to remember.

She then asked students to verbally express how they read best. Instead of having these students write in their reading journals, Ms. Robbins planned for them to write on sticky notes. She asked them to write a few sentences every two pages on a sticky note and then be ready to share their thoughts with the group. After the next day's lesson she believed that the sticky notes helped the students monitor their comprehension. She said the students were able to answer her questions more clearly with less scaffolding.

Similar to last month, her instruction was more comprehension-centered with her first group than with her second group. She explained that it's "because they are at different spots in their process. The two little guys, some days I feel like I'm another ESL teacher because I feel like I have to explain a lot. Which is OK, but just a different group." The same two students were in this second group. They were reading another beginning chapter book that was written at a mid second-grade level.

She also continued to plan for the ESL assistant's group. During this month's observations the group was working on a thematic unit on fish. Ms. Robbins chose this unit because it included direct phonics lessons. Most importantly to her, each lesson was followed with a high-interest reading passage that included words that coincided with the phonics lesson. As a self-proclaimed "whole-language" teacher, this was an important consideration when planning for phonics instruction with this group.

During this month's observations, Ms. Robbins also continued to group students based on their instructional reading level and their areas of weakness as indicated by the IRI. However, during the interview she was anticipating changes to her student grouping.

After observing the students in class and talking with the ESL teacher she felt one of the students was misplaced:

> She started in the lower group (based on the IRI). I don't know if it was the total shock of third grade, but she has really blossomed. So she is skipping the second grade group and going to a third grade group. Then there is another student that isn't keeping up. So I'm not sure if she'll stay in that group or not. I need to think about that one.

At this point in the study, Ms. Robbins reported that her everyday observations were more useful than the IRI results from September.

November/December. As evidenced by her comments at the end of last month's interview, Ms. Robbins did not use the IRI as a stimulus for grouping or instructional decisions during the third month of data collection. Although Ms. Robbins continued to support her students in different ways, none of these was attributed to the IRI results. For instance, she regrouped students based on the ESL teacher and her observations during previous reading lessons.

During this month's observations Ms. Robbins met with two groups of students that she believed read at the same instructional level. Therefore, she chose to use the same chapter book, *Chocolate Fever* (Smith, 2006) with both groups. She explained,

> Both of these groups tested at basically the same level and I've discovered that even though they've tested at the same level we're really not seeing the book the same way. Our strengths and things we need to work on are totally different. One group is reading quickly through the book and getting it. And the other group is reading more slowly and getting it.

She further explained that the fact that she was observing different behaviors with students that had tested at the same IRI level was surprising:

> I had to sit back and think what did I miss on the assessment that I'm seeing now. I'm wondering why that isn't matching up with what I thought would happen. I haven't quite discovered why, but I have truly been very surprised with both groups. They are not going through the book and using the same strategies and coming up with the same things. They are not getting the same things out of the story that I was expecting. I'm glad I chose the book because it gave me a chance to sit back and think what am I seeing and why am I seeing it. What do I need to do different?

As displayed in Table 9, even though Ms. Robbins did not make any adaptations that fit this study's definition (i.e. stimulated by the IRI), she did continue to differentiate instruction based on everyday observations.

January. After administering the IRI in December, Ms. Robbins was pleased that the IRI results indicated that her students, with the exception of one, made progress in reading. During her post-assessment interview she explained,

> I can see where we are falling. We are all growing. [Student] oh my goodness, this child, her light bulb has just turned on. I can see a jump for her. It was low second grade before, now it is top third grade. Her problem is sometimes language gets in her way. It isn't that she doesn't have the idea and doesn't know what is going on; the language gets in her way.

Ms. Robins attributed three planned adaptations to the results of the January IRI administration. She grouped students by instructional level and specific needs, as well as provided additional instructional support for one of her established groups.

During this month's observations the students were grouped in four groups. Two groups were "on grade level" and met with Ms. Robbins. The other two groups were

"slightly below" and "really below" grade level and read with the ESL teacher. Each of these groups used material at their instructional level. The ESL assistant no longer met with a guided reading group. Ms. Cooper, the principal, suggested that she meet with all students and teach vocabulary lessons exclusively.

The two groups that met with Ms. Robbins were at approximately the same instructional reading level; however, she wanted to break the group into two so that she had two smaller groups instead of one large group. Based on her analysis of the IRI results, Ms. Robbins said these groups read words well, but struggled with comprehension. "Sometimes I think when you concentrate so hard on saying the words right, you miss what it means. They just need to really practice going back and looking and think about what they are doing."

To support these students, Ms. Robbins chose to use a workbook that included fiction and non-fiction passages followed by questions on vocabulary and comprehension. During this observation she reminded students in both groups to use the title to determine the main idea and to look back in the story to answer the questions. She praised students halfway through the lesson for looking back in the story. She said, "That means you will have good answers." These were all examples of how she attempted to support their comprehension.

Summary. Ms. Robbins reported adaptations to her instruction during three of the four observation cycles. However, as the study proceeded, she relied less on the IRIs and more on her everyday observations and professional judgment. As noted in Table 9, after the first administration of the IRI she had nine adaptations that were linked in her

interviews to the IRI results. Conversely, after administering the IRI in December, she only attributed three adaptations to the IRI. During the post study interview she explained,

> One reason I liked doing it [the IRI] at the beginning, not knowing the kids and all, I can hear them read and see if they go back and self-correct or see if they put in words that have no absolute meaning at all. I get an idea and a feel for reading speed and those kinds of things. Um, and I find it more helpful at the beginning than the middle one.

In sum, Ms. Robbins did plan adaptations to her instruction based on her students IRI results. Although most of these occurred at the beginning of the year, when she was not familiar with the students' reading ability, she described the IRI as a *snapshot* of her students' reading abilities and an indicator of which students were not growing as a result of her instruction.

Cann

Throughout the study, Ms. Cann was observed for two consecutive days during her reading block. Ms. Cann is in her fourth year of teaching. She currently teaches a fourth and fifth grade combination class. She has also taught fifth grade and been an instructional technology teacher. She earned a Masters degree in Elementary Education. This is her first year at Link. Many of her students were in a self-contained learning disabled class last year. The principal created her class to be a transition from a self-contained to a regular classroom. Ms. Cann had administered another version of the IRI for other teachers, but had not used IRI results in her own classroom.

After Ms. Cann analyzed her students IRI results she was discouraged:

> I have a four/five combination class. Based on the IRI, I have two pre-primers, two primers, two first grade readers, three second grade readers, one third grade and one fourth grade reader. Fluency seems to be the problem. Their words per minute are pretty low with everyone except for [the student with a fourth grade instructional reading level].

From the beginning, Ms. Cann used the IRI results to plan her student grouping and instruction. Although she was concerned with grouping students by reading level, she looked beyond their reading level and analyzed their results in word recognition, fluency, and comprehension. Based on her students' results her main focus was on improving her students' fluency and word recognition. Table 10 displays the number of adaptations she made for each of the three codes that were described in Chapter II. An example of an interview response is provided for each code.

Below, I describe some of the adaptations represented in Table 10. I will describe these adaptations by month. Table 11 displays the adaptations Ms. Cann planned during the four months she was observed.

Table 10. ***Adaptations by Code for Cann***

Code	Number	Example Quote from Interview by Code
Offers additional support or tasks within an established group	5	"This is how you build fluency. This is how you become a better reader."
Groups students by reading level	2	"We were going to give everyone Corrective Reading, but in my opinion, doing 45 minute phonics lessons each day is not for everyone. Especially, when they are reading at third or second grade level on the IRI."
Creates a group for students based on an instructional need	2	"Any reading you do with these students is painful. They just don't have it (word recognition). They don't know the sounds."

Table 11. ***Cann's Adaptations across Time***

Month	Offered additional support within an established group	Grouped students by reading level	Created a group for students based on instructional need	Total
September*	4	1	1	6
October	0	0	0	0
November/ December	0	1	0	1
January*	1	0	1	2
Total	5	2	2	9

**First observation after the administration of the IRI.*

September. In September, Ms. Cann planned six adaptations that she attributed to analyzing her students' IRI results. Ms. Cann found the IRIs helpful in planning her reading instruction. During an interview she explained how she had used the IRI results to group her students:

> My class is unique in that I have the EC teacher in here. So therefore she is going to start Corrective Reading with our pre-primer, primer, and first grade readers for 45 minutes a day. I'm going to take the second and third grade readers and we are going to do a guided reading group with second and third text together. With the fourth grade [student] we are going to have our own little group and do some guided reading and book study.

Since she grouped students by both reading level and instructional need, most of the observed adaptations involved offering students additional support within these established groups. Although she did group the pre-primer, primer, and first grade students together, her purpose for grouping them went beyond their instructional reading

level. She noticed from these students' IRI results that they were struggling with word recognition. Even when reading an IRI passage three to four levels below their actual grade level, most of these students' accuracy scores were below 90%. Two of the students scored below 60% on the pre-primer passage. Corrective Reading is a systematic, scripted phonics program designed for students who have learning disabilities in reading. This program was chosen for this group to help improve their ability to read unknown words.

During her September observations, Ms. Cann divided her class into three groups. The Exceptional Children's teacher planned and implemented the Corrective Reading lessons. Ms. Cann had two groups. Her groups were initially grouped by instructional reading level, but before the lessons, Ms. Cann also planned specific instructional strategies to support these students. For example, for the group with the instructional reading level of second or third grade, her focus was on improving their fluency. During the lesson she planned to have students reread sections, specifically with dialogue, to improve their expression and their general "flow" of reading. She also planned to model fluent reading by echo reading and rereading several sections of the text. When asked why she chose these strategies, she replied, "It helps them read, it helps them build fluency. I've seen it work."

In another lesson she was explicit with students about why she had them reread text. She told them, "Let's reread because rereading makes you more fluent." The following day she further explained to the students, "This is how you build fluency. This

is how you become a better reader." At the end of these lessons, she asked students to go back to their seats and reread a section of the book they had just read as a group.

The second group she met with only had one student. She felt this student, who read at a fourth grade level, needed to be in her own group. She believed the previous group's book would be too easy, and this student's instructional weakness, as indicated by the IRI results, was different. This student was accurate and fluent. Ms. Cann mentioned she probably could have accurately and fluently read the fifth grade passage. However, her comprehension was below instructional level on the fourth grade passage. When planning instruction for this student, she chose a book that was more difficult than her previous group. Also, her instructional focus was on comprehension, not word recognition. While reading a book on how humans damage animal habitats, Ms. Cann planned for the student to look up information on the Internet to help her visualize the information the book was describing. She also planned questions after every two pages. Ms. Cann felt this was a good instructional strategy for helping the student monitor her own reading.

In sum, during the month of September, observations of and interviews with Ms. Cann revealed several adaptations. Not only did she use the IRIs to group students by instructional level and by instructional need, she also found ways to support her students within the instructional leveled groups.

October. In October, Ms. Cann continued many of the adaptations she attributed to analyzing the IRI results in September. She did make one adjustment to her grouping, but she did not attribute this change to the IRI results.

She continued to focus on fluency with the group that was reading material at the mid second to third grade level. These students were reading *Flat Stanley* (Brown, 2003). Following my observation I asked her about the specific needs she was attempting to meet with this group. She replied,

> Fluency. I'm trying to find a book that they can read and I don't think I hit the mark. They were not interested in this book or the guided reading books [that came with the state adoption], so I was trying to find them something like a chapter book. We're still trying to work on fluency.

Although there were no reported or observed adaptations in October, she was continuing the adaptations she began in September following the IRI administration.

After observing one of her students during guided reading she realized that he was having more trouble with word recognition than the IRI reflected. During the post observation interview she explained, "I just moved [student] over there [the Corrective Reading group]. After watching him for this amount of time, he just doesn't have the hang of it." She further explained that he was unable to use letter knowledge to sound out words and he did not attempt to decode unknown words. Several times during lessons he would shut down. Since this adaptation was the result of her observations, not the IRI results, this was not coded.

November/December. In December, Ms. Cann had one planned adaptation that was linked to the IRI results from the September administration. She changed one student's group based on her instructional reading level. Although she made other adjustments to her grouping, only one was attributed to the IRI results.

Based on a student's instructional reading level, as determined by the IRI, Ms. Cann met with another fifth grade teacher at Link to discuss having this student join her class for reading. This was the student who previously met individually with Ms. Cann. Ms. Cann felt that the student's reading would improve more if she were grouped with students of the same instructional reading level. After discussing this student's IRI level with the other fifth grade teacher, both agreed on a time that this student could come to the fifth grade teacher's class in lieu of participating in reading instruction with Ms. Cann.

Although not attributed directly to the IRI, Ms. Cann also split her other group into two. She felt a few of the students were not as adept at word recognition as the IRI indicated and believed doing the Corrective Reading program with this group would meet their needs. She explained,

> We had to switch some of them to Corrective Reading. They were not getting their sounds. It was so evident in the words sorts. When they went to spell the word part, they would spell the word *part,* prat or pert. They were not getting it. So, they needed to go back to word attack.

Similar to the other participants, during the third round of observations and interviews, Ms. Cann continued to differentiate her students' instruction, but used her own judgment more often than the IRI results. With the exception of moving a student to another fifth grade class during the reading block, Ms. Cann did not use the IRI results from September when planning instruction for her students.

January. After re-administering the IRI, Ms. Cann was reenergized. She immediately shared the results with her students. "Everyone made progress in reading!

So, even if you don't like what we are doing in reading-that's too bad." One of the students in the newly formed Corrective Reading group replied with some hesitation, "I suppose it's working." From the beginning of the study, she expressed that she always feels a tension between getting her students to do grade level work, as required by the state tests, and building their self-esteem and motivating them to want to do better in school. To that end, following the second administration, she had a small ice cream social with the students to congratulate them on their IRI growth.

Based on the changes in their IRI profiles, Ms. Cann adapted her instructional grouping and provided support for students within an already established group. She realized two of the students would not benefit from strict phonics instruction. Therefore, she created a new group with these two students. She planned to have a more traditional guided reading format with this group, but continue to focus on comprehension. She explained during her post-observation interview, "[Student] is above the word attack and so is [student]." However, since one of these students left Link, during the observation in January there was only one student in the group. Based on this student's IRI, comprehension monitoring was a weakness. She reminded him numerous times during the lesson to stop when something doesn't make sense. She had this discussion with the student during one of the lessons I observed. "A lot of times when we read we need to think while we read." She then read part of the book to him and connected it to an event in the classroom. She made the point that thinking in this way will help him make connections which will help him "understand better." Additionally, during the lesson she connected this guided reading lesson to another lesson she taught about the importance of

making connections. During an interview, she explained that the student was not applying the strategies she taught during the class read aloud with the strategies she taught during guided reading. “When we are reading *The Tale of Despereaux* (Dicamillo, 2006) he thinks we don’t use those strategies anywhere else. So I’m trying to give him the whole picture. He is showing some progress, but I want him to branch out and expand what he knows.”

For the new Corrective Reading group she established in December, she provided additional support. Similar to the initial IRI in September, in January, aside from reading several levels below their actual grade level, this group’s fluency was low. One way Ms. Cann felt she could support these students was to incorporate more instruction with high-frequency words. During the second day of observation, she had the students in the Corrective Reading group play a high-frequency word game instead of doing their scripted lesson. The students were asked to identify these words in three seconds; if they did, they were given the card to keep as a point. Once they had read all of the cards, she also had them read a sentence using the word on the card. She explained to them that they needed to read this sentence smoothly. If they didn’t read the sentence smoothly, she read the sentence fluently and then asked them to reread the sentence. During this lesson she expressed her purpose for this activity. She told students, “If you know these words, the more fluent you will become.”

Summary

In sum, Ms. Cann adapted her instruction based on her students’ IRI results. Although most of these occurred following the IRI administrations in September and

December, during the October and November observations she continued to follow through with many of the adaptations she began in September. As she explained during her post observation interview,

> This is my first experience with EC and ESL students and this kind of environment. I've learned what their shortcoming were (from administering the IRI), but I've also learned what their strengths are. The IRI gives you an initial starting point, from there, the more time you spend with them, through teacher observations, lets you know where they are. I'm not sure there is any one test out there that can really test everything.

Overall

Across the four sets of observations and six interviews of these three teachers, 37 adaptations were reported and/or observed. Below, I describe how these adaptations were distributed among the three data codes. Then, I describe how these adaptations were distributed across time. Since the purpose of this study was to look at these participants adaptations collectively, as a means of exploring how teachers planned adaptations to their instruction after administering and analyzing an IRI, comparisons between participants will not be described.

Adaptations by Code

After analyzing the data, participants' adaptations supported the use of three codes. Of the 37 adaptations, 19 of these adaptations provided additional support within an already established group, 10 involved grouping students by instructional reading level, and eight involved creating a new group based on a specific instructional need. These adaptations are displayed in Table 12. Almost equally, the participants reported

adaptations to their grouping, both by level and specific instructional need (18), and adaptations to the support or tasks planned for these groups (19).

Table 12. ***Overall Adaptations by Code***

Code	Overall Count
Offers additional support or tasks within an established group	19
Groups students by reading level	10
Creates a group for students based on an instructional need	8
Total	37

Adaptations over Time

Over the duration of the study, when participants adapted varied. As displayed in Table 13, the majority of adaptations occurred immediately following the first administration of the IRI. Participants planned 21 adaptations in September, six adaptations in October, two adaptations in November/December, and eight adaptations in January following the second administration of the IRI.

When the adaptations occurred varied. After analyzing the results from the first administration of the IRI, participants planned three times more IRI stimulated adaptations than at any other time in the study. Furthermore, even though it may be expected to see a similar number of adaptations after the second administration of the IRI, this was not the case. Teachers adapted more following this second administration

than in October or November/December, but not nearly as often as they did after the first administration.

Table 13. ***Overall Adaptations across Time***

Month	Offered additional support within an established group	Grouped students by reading level	Created a group for students based on instructional need	Total by Month
September*	10	6	5	21
October	6	0	0	6
November/ December	1	1	0	2
January*	2	3	3	8

**First observation after the administration of the IRI.*

In any case, there was a considerable difference in the quantity of adaptations stimulated by the IRI when you compare the months immediately following the IRI administrations. Twenty-nine of the 37 adaptations occurred after the first or second administration and analysis of the IRI compared to only eight adaptations at the two other data collection points. Furthermore, participants offered specific instructional support tied to the IRI results throughout the study, but only created new groups based on instructional need after the administrations of the IRI.

Summary of Results

The purpose of this study was to describe the adaptations teachers planned to their instruction after administering and analyzing an IRI. In this chapter, each participant's planned adaptations were described. Almost equally, the participants reported adaptations

to their grouping, both by level and specific instructional need (18), and adaptations to the support students in already established groups (19).

Likewise, when teachers adapted their instruction varied, but varied in a similar manner. All three participants planned adaptations to their grouping or instructional focus more often after administering the IRI at the beginning of the school year. Twenty-one of 37 adaptations were observed in September. There were two months when teachers did not report any adaptations to their instruction that were stimulated using the IRI results.

Finally, this research indicates teachers with various years of experience and varied instructional approaches to reading find IRI results useful, especially at the beginning of the year when they know the least about their students' reading ability.

CHAPTER IV

DISCUSSION

Summary of the Study

The purpose of this study was to describe the adaptations three upper-elementary teachers made to their reading instruction after professional development on how to administer and analyze an IRI. A qualitative study served as the best methodical method since planned adaptations that were stimulated by an assessment have not been thoroughly studied.

Using a collective case study approach, the participants were interviewed and observed after two administrations of an IRI. Following four two-day observations and six interviews between September and January, participants' adaptations were coded. Participants in this study planned specific tasks for students in an already established group, grouped students by their instructional reading level, and grouped students based on specific strengths or weaknesses in reading.

Participants reported more adaptations during the first month of the study, September, immediately following the first administration of the IRI. Participants' adaptations also increased slightly after the second administration in January. During October and November/December the participants continued to adapt their instruction, but most of these adaptations were not the result of analyzing the IRI. Hence, although

the quantity of adaptations was not consistent, all participants continued their previous adaptations or adapted instruction based on other sources of information.

In this chapter, I will discuss why the participants chose to use the IRI results to inform instruction. I will also describe why the participants found the IRI most useful at the start of the school year. Next, I will discuss the implications of these results for theory, teacher practice, and policy. Then, I will suggest avenues for future research studying teacher adaptations and informal assessments such as the IRI. Finally, I will conclude by summarizing the data and implications of this study.

Participants' Use of an Informal Reading Inventory

Why Participants Used IRI to Adapt

Participants planned 37 adaptations to their instruction. During their post study interviews, two reasons were given for using the IRI results as an impetus for adaptations. Participants expressed that the IRI, especially at the beginning of the year when they knew little about their students, provided a tool that helped them understanding their students' reading ability. Moreover, this information gave a more complete picture of students' reading ability when compared to previously-used local and state assessments. Secondly, the IRI, specifically the January administration, provided both the teacher and the students an indication of growth.

Provided a complete "snapshot" of students' reading. Hollander (1974) argued that administering the IRI is a good opportunity for the student and the teacher to sit down and read together in a structured way. Similarly, Johnson et al. (1987) acknowledged that the IRI is a structured diagnostic tool for teachers. The participants in

this study agreed. Each participant utilized the IRI results and attributed planned adaptations to this information. In this study, participants used this opportunity to identify students' strengths and weaknesses and found it to be more indicative of students' reading ability when compared to their previously used assessments. For instance, Ms. Wayne compared the IRI to a previous way she assessed students, miscue analysis. "Some of us were taught miscue analysis, which I don't feel taught me anything. I just feel that I learn more about what they can do as an overall reader from the IRI, not just can they call words or can they answer questions." Ms. Wayne did not feel miscue analysis offered her a complete picture of her students' reading ability. Further, because miscue analysis lacks structured criteria for assessing students' comprehension and fluency, administering the IRI was more helpful to her as she planned instruction. During Ms. Wayne's observations it was obvious that she used this additional information. Not only did she group students by their instructional reading level, but she also, as Johnson et al. (1997) have suggested, provided additional support and created specific groups for students who struggled with word recognition, comprehension, and/or fluency.

Just as Ms. Wayne found the additional information offered by the IRI helpful, Ms. Cann also utilized this additional information. Ms. Cann acknowledged that the IRI offered her the information she needed about her students' reading ability. "I've learned what their shortcomings were, but I've also learned what their strengths are." This sentiment is reflected in her creation of a group of students who struggled with word recognition, but were able to comprehend text read to them at a fifth grade level. In response, she planned more word recognition instruction for these students.

Further, the IRI provided information that standardized tests do not. Pikulski and Shanahan (1982) have stated that one of the biggest advantages to using an IRI is that the results leave little distance between teaching and testing. This is in stark contrast to the local and state tests. All three participants found this to be the case when they compared the information provided by the IRI to the information provided by the state's End of Grade (EOG) test. Ms. Cann affirmed this during her post study interview. "I think the IRI is much more useful, personally. I think it tests them at the grade level that they are at. The EOG just gives you a 1, 2, 3, 4. It's like I'm missing something."

Ms. Wayne agreed with Ms. Cann. She also felt the IRI offered a more complete picture of her students' reading abilities and that this information was crucial to her planning.

> I feel like the IRI data gives a little bit more insight into what they are capable of doing. I feel like it gives you something to work with. The EOG just says they aren't here. Well, we knew that before they went into it. We knew they were low. Tell me what they need to work on. We need to work on this goal.

Additionally, when comparing the IRI to the standardized tests, Ms. Robbins citied the immediate feedback of the IRI results as another advantage. "With the IRI I'm sitting there and talking with them and it is immediate, how are you reading this passage, what are you doing? With the quarter test (a local standardized test) it is a week or two before you get it back. The IRI is a more immediate kind of feedback and you can use right away."

In short, Morris (2008) stated that an Informal Reading Inventory makes it possible to "make sense" of a student's reading by identifying strengths and weakness.

The three participants in this study agreed. They planned both instructional (i.e. providing additional fluency or word recognition instruction) and grouping adaptations after they analyzed their students' IRI results. Although these IRI stimulated adaptations were more pronounced immediately following the first administration of the IRI, clearly, since IRI provided a structured analysis of students' reading, it did stimulate changes in the ways these teachers planned their reading instruction.

Indication of growth. Although reported adaptations declined in the months after the first administration, participants found the second administration of the IRI useful. After giving the IRI in December, in addition to stimulating eight of thirty-seven adaptations, it was also a means of measuring growth for both students and the three teachers. Further, comparing the September and December IRI results, teacher felt affirmed that their instruction had been effective.

Ms. Cann and Ms. Hodges went a step further and shared this information with their students. As suggested by Johnson et al. (1987), their emphasis was not on comparing their students' performance to others, but comparing a student's performance in September to their performance in December. At Link, teachers were asked to set goals with students each nine weeks. The students wrote their goals in a folder. Ms. Wayne added the IRI results to the folders this year. In her post study interview she described how they included the IRI.

> Even with our student quality folders they [students] would use the IRI things to set their goals. They even talked about them [their IRI results] in terms of our student quality folder. 'The first time I read level two, so now I want to do this. I also would talk to them and say, 'Look at what you went up in, look at your

> accuracy and look at your comprehension.' I feel like it helps them monitor themselves too.

Not only did participants see this as an indication of growth for the students, but it was also an affirmation that their instruction was effective. Ms. Cann was reassured after she compared the first and second administrations of the IRI. As discussed in chapter III, her students' September IRI results indicated that most of her students were at least two grade levels behind in reading. Ms. Cann and I ate lunch together every day. During the weeks before the second administration she repeatedly expressed concerns that her students were not making progress and would not pass the state test in May. Many of our conversations about her class ended with her saying, "I just don't know." During the second administration she shared one student's results. She was concerned because the student was still at a second grade instructional level. After I explained that the student had made progress in both accuracy and fluency and that this student had never made a year's growth in previous grades, she was able to see his gains in a more positive light. By comparing the growth the student made in individual components of reading, not the instructional level at a whole, Ms. Cann realized that her student had made noticeable growth. During her post observation interview she said, "The second one was like a relief because it was nice to see that they showed some improvement and what we were doing was working." Since previous research suggests that teachers with higher self-efficacy tend to persist and adapt instruction, having this renewed confidence, should increase the likelihood that Ms. Cann will continue to adapt instruction to meet her students'

needs (Duffy, 2005; Nielsen, Barry, & Stabb, 2008; Stodolsky & Grossman, 2000; VanEekelen et al., 2006).

By in large, aside from using the IRI to plan instructional and grouping adaptations, teachers also saw the IRI as a useful tool for measuring students' growth and for assessing the effectiveness of their instruction. Using the IRI as a stimulus for adaptations and as an indication of growth has implications for theory, practice and policy. These will be discussed later in the chapter.

Other Influences on Participants' Planned Adaptations

During post-observation interviews participants explained why there were more adaptations in September than other months. Overall, once the participants had an extended amount of class time to read with their students, they felt that their everyday observations of students' reading had a bigger influence on their planning. As Ms. Cann explained, "The IRI to me gives you an initial starting point, from there the more time you spend with them, through teacher observation lets you know where they are." Additionally, Ms. Robbins believed that for a few students there was a discrepancy between the IRI results and the students' performance in the classroom. This discrepancy was another reason she believed, after the initial administration, that her observations were more influential. Both of these other influences, everyday observations and the discrepancy between the IRI results and classroom performance are discussed below.

Everyday observations. This research offers support for Johnson et al. (1997) belief that the IRI adds structure to teachers' observations. Participants found the structure helpful as they more informally noted students' everyday reading behaviors,

although at the beginning of the year participants found the process of administering and analyzing the IRI more useful than their everyday observations. This was supported by the fact that over half (56%) of the adaptations occurred in September. When asked if she would advise other teachers to use an IRI, Ms. Robbins said that she would definitely suggest teachers give an IRI at the beginning of the year. She said, "At the beginning of the year, yes. So you can get that really quick first look at what you see. A lot of times what we see on the K-2 assessment (the formative assessment required by the state in grades Kindergarten through second grade) is so totally different from what we are looking for [in third grade] you really don't have information, so it is good." She said that in the future she would only administer the IRI a second time if she had questions or inconsistently in what she was seeing during the students' everyday reading.

Although it may seem counterintuitive to the purpose of this study, as described in chapter I, the inclusion of the teacher's judgment is what separates the IRI from other standardized tests. Further, Johnson et al. (1987) posit that the IRI is not intended to replace teacher observations and judgment. "IRIs should not be thought of as a test, but a series of strategies that can be used flexibly to help determine the level of reading material appropriately challenging for a student" (Johnson et al., 1987, p. 11).

IRI results and classroom performance. Overall, participants believed the IRI reflected their observations. Yet, that was not the case for all students. During the interview following her second administration of the IRI, Ms. Robbins referred to a few students' assessment results that she felt were "invalid" because they were not representative of what the students were doing in the classroom. She believed the shorter

length of the passages and the one to one reading situation were two reasons the IRI and students' class work were not always compatible. Ms. Robbins believed the fact that the one to one reading of the IRI was dissimilar from the typical classroom reading situation accounted for why students were able to read at a higher level on the IRI. This was supported by Bader and Wiesendanger (1989). They cited the short length of IRI passages as a serious limitation, specifically in the older grades, because the text read in class is much longer and requires more time. Below is an excerpt from our post study interview.

> Robbins: "My problem is this group [she points to a pile of IRI assessments]. What shows up on this group [their IRI results] is not what happens when we do stuff in the classroom. [Student] doesn't read at a third grade level. Before, he was reading on a second grade level but choppy, but even on a second grade level it is difficult because of his attention. Sitting there reading with him is not the same as leaving him to do it by himself at his desk."
>
> Gray: "To me, I'm hearing that you feel that the IRI does not measure attention and focus."
>
> Robbins: "Yes, they [the passages] are just 100 words. I will continue to do these because there is something that you see from these that you won't see whole class. So, I think they are valid for just seeing, 'Ok, I need to work on these things.' If you understand that what you see here (pointing to the class IRI results) may not be what you see when you do other assessments or classroom work."

Additionally, Ms. Wayne found at times her observations did not reflect her analysis of the IRI results. During her post observation interview in September she described one instance where she decided to move a student to another group.

> I had to change [student]. She placed at a fourth grade. I'm not sure how she made what she did. I probably should have done another passage with her. I thought, 'Wow, you really placed high up there but I'm not seeing it.'

> So, I don't see that her scores were true to form. The group she was working with is fairly OK in terms of decoding; we're just working on comprehension and things like that. She just couldn't keep up.

Ms. Cann also moved a student in September even though her analysis of the IRI results indicated the initial grouping was most appropriate. Based on his IRI results, she placed him in a group with other students who read with a similar word per minute pace. However, after listening to him read during the first two weeks, she realized he was also struggling with word recognition. As a result, she adjusted his group placement, even though his IRI results were most similar to the students in the initial group.

Summary. Participants diverged from the IRI results when their everyday observations contradicted the IRI results. Although this may seem counter to the purpose of this study, considering the research on thoughtfully adaptive teaching, this is encouraging. Duffy and colleagues (Duffy et al., 2008) have suggested that consciously making these non-routine adjustments in the midst of a lesson is crucial to meeting students' needs. To meet changing needs and growth throughout the year, teachers must use everyday observations to plan instruction. Further, in each of these instances, the participants' entered into the cycle of reflection that Shulman (1987) has also suggested is essential to effective teaching. In this study, each participant used her content knowledge about the specific components of reading instruction (i.e. fluency, comprehension, and word recognition) and evaluated the current instruction she was providing. Following this reflection, each participant arrived at a "new comprehension" on what it meant to be effective for these students. As further described below,

participants' use of the IRI results as a stimulus for adaptations have implications for theory, practice, and policy.

Implications

Theory

Social cognitive theorists believe that teachers must be given opportunities to engage in learning that include a more knowledgeable other and social interaction (Bandura, 1986; Tracey & Morrow, 2006). In this study, the more knowledgeable other was the author and the social interaction occurred among the participants and with the fellow upper-grade teachers at Link. Additionally, social cognitivists believe that when teachers feel their instruction will result in improved learning, they are more likely to engage in self-regulated practice (Bitan-Friedlander et al., 2004). Within the social cognitive framework, self-regulated behaviors (goal setting, persistence towards the goal and reflection) and self-efficacy are considered imperative if participants are to change or adapt instruction (Duffy, 2005; Randi, 2004). The results of this study support these major underpinnings of social cognitive theory. Engaging in a cycle of assessment, analysis, goal setting, and reflection led to instructional and grouping adaptations that the participants believed were more reflective of their students' needs.

Along with self-regulating behaviors, this study also supports theories of teacher efficacy and its role in adaptive instruction. VanEekelen et al. (2006) found that teachers with high self-efficacy spent more time planning for instruction because they believed their efforts would result in successful student learning experiences. In this study, Ms. Cann reported feelings of rejuvenation after comparing the September and December IRI

results. Ms. Wayne expressed similar feelings of excitement and renewed energy. Based on previous research, this renewed energy should result in continued adaptations.

Practice

In this study, the ways in which the participants utilized the IRI results as a tool for stimulating planned adaptations has implications for reading instruction. First, this supports that teachers' understanding of a formative assessment may improve their ability to analyze students' everyday reading behaviors. In addition, how teachers adapted, based on their students' IRI results, demonstrates that the IRI may be a tool that teachers can use to navigate through the complexities of teaching reading in the elementary school.

Understanding the IRI process. Johnston et al. (1997) state

> A teacher who has constructed and mastered the use of reading inventories can hardly ignore the minute by minute, day by day opportunities for informal evaluations of pupil's performances. Each instructional period becomes part of a continuing diagnosis of existing strengths and weaknesses.

Thus, teaching in this manner involves constant decision making and reflection. This study suggests that teachers should view informal assessments, such as the IRI, as a tool that should be flexibly used to inform instructional decisions. Caldwell (2002) refers to this as the difference between administering the IRI and understanding the IRI process. Caldwell suggests that to most effectively use the IRI results a teacher must understand the process. Once teachers understand the process, they can use any reading passage to quickly assess whether a student is struggling with word recognition, comprehension, or fluency. Based on the three participants experiences, being able to use the IRI process in everyday reading situations provided a seamless link between assessment and instruction.

If, as this study begins to suggest, upper-elementary teachers should utilize assessments similar to the IRI to better inform their instruction, making this link apparent to teachers will be critical since many teachers are already overwhelmed with the number of standardized local and state tests that have resulted from the No Child Left Behind legislation (2002).

Navigating the complexities of teaching reading. In addition to supporting previous research which suggests that effective teachers are self regulated (Lin, 2001; Randi, 2004; Shulman, 1987) the participants' experiences in this study also highlight the complex nature of reading instruction. In this study, the participants used the IRI to navigate the complexities of teaching reading. In 1999, Moats chaired a panel of researchers that wrote a paper for the American Federation of Teachers titled, *Teaching Reading is Rocket Science* (American Federation of Teachers, 1999). In this paper the vast knowledge and variety of individual, developmental factors teachers must be aware of to effectively teach reading was discussed. These included the developmental stages of reading, the required content knowledge, and the understanding of how to use this knowledge in ways that meet their students' developmental and instructional needs. During an interview following the second administration of the IRI, Ms. Robbins described her thinking process after analyzing her students' IRI results:

> I'm wondering if instead of reading these (IRI passages) out loud, if I should also have them read silently. I've had kids before that could read to themselves and get the meaning and do it in an appropriate amount of time. But, it was to themselves and not out loud. I know that with my son and my husband, if you ask either one of them to read out loud, they would be so focused on the words it would take them forever. I'm wondering if some of these children, especially the ESL children, might show something different if they did it silently.

Ms. Cann described a similar situation when deciding how to plan for one of her students' instruction. She said, "I'm kind of stuck right now. [Student] needs the word attack component of Corrective reading, but in a way he also feels held back by it. I've kept a book going in guided reading with him to help. You know what I mean. He doesn't feel successful at all. I have to do something." Her thought process, as well as the comments made by Ms. Robbins, further illustrates the complexity of teaching reading because this is not the only instance in a class of several struggling readers where she had difficulty deciding on the best instructional plan. Hence, the participants found the IRI was a useful tool while navigating the complexities of teaching reading. Their experiences provide further evidence that using an IRI, or similar assessment, may increase the likelihood that teachers' adapt their instruction in ways that more effectively meet their students needs. Although beyond the scope of this study, doing so should also result in increased student achievement.

In sum, the three participants in this study found the IRI results stimulated adaptations to their reading instruction. Being able to identify their students' strengths and weakness in specific areas of reading enabled them to navigate the complexities of teaching reading in classrooms where students' instructional reading level ranged four grade levels. Further, after analyzing several students' IRI results, the participants became more aware the everyday reading behaviors of their students. By understand the IRI process, these teachers felt their ability to adapt instruction based on everyday observations was strengthened.

Policy

When taking these theoretical and practical implications into account, there are significant implications for policy as well. Instead of viewing standardized tests as the only means of measuring reading after second grade, this study implies that informal, more formative assessments are useful to teachers. These informal assessments provide teachers with more descriptive information measures student growth and are less disruptive to instructional time and more conducive to enabling teachers as adapters.

In an article on IRIs, Paris and Carpenter (2002) argued that the connection between assessment and instruction is strongest in the primary grades. They contend that in the primary grades there is the greater variability among children's reading skills. However, the upper grades classrooms described here contradict this assumption because the average difference between the lowest and highest readers in the three participants' classrooms was four years. The upper-grades teachers in this study found using the IRI results to plan reading instruction valuable. So much so that at the end of the study all three teachers expressed an interest in sustaining the IRI as the informal assessment used across third through fifth grade at Link. Based on the how participants in this study used the IRI results to plan instruction, it seems plausible that only school level comparison data would be lost if policy makers supported the use of a more formative assessment in upper-grade classrooms. Not only would these formative assessments provide a more complete picture of students' reading, they would also involve teachers as more active participants in the assessment process.

Further, participants reported that using a consistent formative assessment in the upper-grades was advantageous. They believed that having this type of assessment fostered more productive dialogue with other teachers. When the participants were looking for a fellow teacher's advice on how to plan instruction, beginning the conversations with where students were on the IRI, provided a common language. Ms. Wayne explained,

> Being assessed on the same tool they [students] can be compared. Whereas last year I may have used Johns and you may have used miscue analysis this would not provide a common link between your class and mine. In terms of grade level, I feel it helps us to discuss it [reading instruction]. I feel like it improved our discussion. We could say, 'He read like this with this. Do you have any kids like that? What are you doing?' Whereas before I may say, 'Oh I don't really test for that part.'

In sum, Ms. Wayne's comments illustrate the additional benefits that could ensue if district and state policy makers would relinquish their belief that upper grade reading is best assessed though standardized, multiple-choice tests.

Opportunities for Future Research

In light of these implications, there are several opportunities for future studies that view an understanding of an assessment process as an impetus for instructional adaptations. In this study, all three teachers, regardless of their previous instructional approaches, used the IRI to make instructional decisions. Further, although not the focus of this study, teachers were observed making adaptations that would met Duffy and colleagues definition of *on-the-fly* adaptations These teachers reacted to students' reading during a lesson and as a result changed their instruction to meet a specific student

needs. In the future, studying the *on-the-fly* adaptations of teachers, who have an understanding of the IRI process, in contrast with teachers who do not, would add another dimension to the body of research on thoughtfully adaptive teaching.

Further, instead of studying teachers like Ms. Robbins with over 15 years in teaching, or Ms. Cann and Ms. Wayne who both have masters degrees, studying second year teachers, who have only taken undergraduate courses in reading, may provide more insight about the IRI process and its link to both planned and on-the-fly adaptations. Since young teachers typically feel overwhelmed by the wide range of reading materials, programs, and advice they receive, making sense of how to use these materials and programs may become more comprehensible with a better understanding of how to use an assessment to plan instruction. Conducting a study comparing second year teachers who have and who have not participated in professional development on administering and analyzing an IRI provide evidence for some researchers' belief that standardized tests alone are not effective at stimulating instructional change (Pearson, 2007; Tierney et al., 2000).

Additionally, studying teachers, prior to professional development on how to administer and analyze the IRI, and then comparing that to the following year once they have participated in such professional development, may provide a way to further investigate whether understanding the IRI process fosters an environment that yields more thoughtfully adaptive teachers. A two year study would also add a longitudinal dimension to thoughtfully adaptive teacher research. To this point, no study has examined if teachers sustain substantial adaptive behaviors after the initial phase of the study.

Further, by studying the adaptations that are stimulated by analyzing the IRI results, an avenue for linking teacher adaptations to a measure of student achievement is achieved. Only when this link is made can researchers begin to substantiate the probable assumption that adaptive teaching leads to more effective literacy instruction.

Finally, as discussed in Chapter I, a more recent theme in thoughtfully adaptive research is that some adaptations may be more effective than others. To that end, a study could be conducted that not only describes the adaptations teachers make in response to an IRI, but also rates the qualitative value of those adaptations in terms of their effectiveness on student learning. Duffy and colleagues (Duffy et al., 2008) have used a rubric to categorize the quality of teachers' rationales. Using a similar rubric in a study of planned teacher adaptations would further expand the body of research on adaptive teaching.

Conclusion

In this chapter, I discussed why participants found the IRI results helpful in planning instructional and grouping adaptations. I also described how this aided participants during their own observations of students' reading. In this study, participants did adapt their instruction based on the IRI results. All three participants found that when compared to the local and state standardized test results the IRI offered a more complete picture of their students' strengths and weaknesses in the areas of word recognition, fluency, and comprehension. Since participants had this information at the start of the school year, in interviews they discussed feelings of confidence in their instructional and grouping decisions. This is at the heart of Duffy and colleagues' (Duffy et al., 2008)

definition of adaptive teaching since the teachers' ability to address their students' needs was improved. Thus, in this study, the IRI results were a stimulus for planned adaptations to reading instruction.

The commonalties across this study's cases support previous work by social cognitive theorists. When teachers are active participants in the assessment process and are supported in an environment that allows for a cycle of observation, reflection, and adaptation they feel more effective and are more likely to persevere through the complexities of teaching reading (Shulman, 1987). Based on these three teachers' planned adaptations, a discussion among teachers and policy makers should begin about the advantages of using more informal assessments in the upper elementary grades. Policy makers' current belief that reading achievement can be reduced to crude numbers implies that teaching reading beyond the primary grades is less complex. This study's participants have shown that this is not the case. Finally, the results of this study provide implications for future research on investigating how upper-grade elementary teachers, especially teachers who have little confidence in their ability to teach reading, learn to adapt once they are active participants in an informal assessment process and are not relinquished to being only program deliverers and test administrators.

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Appendix A

Pre-Study Survey

Please answer the following questions completely based on last year's teaching practices during reading instruction.

Describe your overall reading instruction during last school year.
This may include, but is not limited to:

What resources did you use during instruction? *-programs* *-text*	
How much time did you spend on various activities or tasks?	
How did you decide which materials to use with your students?	
What specific skills and strategies did you teach?	
Were there certain aspects of reading you taught more than others? Why?	

Instructional Planning

When did you plan for your reading instruction?	
What information/resources did you use to plan for reading instruction?	
Describe how you grouped students during instruction. *When did you teach whole group, small group, or individuals?*	

What assessments, if any, did you use identify students' strengths and weaknesses in reading?	
What other information would you like to share about how you planned for reading instruction last year?	

Appendix B

Post Assessment Interview

Teacher_____ Date _____

I. Describe what you learned about your students from administering the IRI.

II. What, if any, influence will these results have on how you plan for reading instruction?

III. Is there anything else you would like to share about these assessment results?

Appendix C

Observation Protocol

	Observations	My Notes
How are the students grouped?		
What materials is the teacher using with the group?		
Description of Lesson		
Diagram		

What adaptations does the teacher appear to make?	Time	Possible Adaptation	#	Code

Appendix D

Post-Observation Interview Protocol

Definition of a Thoughtful Adaptation

A planned adaptation occurs when a teacher modifies instruction or student grouping configuration and states in an interview that the modification was made because of IRI data.

Interview Protocol:

How did you plan for this reading lesson?

- Compared to your previous years, what adaptations have you made to this lesson?
- What specific student needs are you attempting to meet? How did you identify these needs?
- What informed the planning of this lesson?

Describe how you grouped students for this lesson/task?

I saw you _____. Why did you do that?

Is there anything else you could me about how you've changed the planning of your reading instruction?

- What information did you use as a basis for these changes?

Appendix E

Post Study Interview

I. Describe what you learned about your students from administering the IRI.

II. What, if any, adaptations or changes in your reading instruction do you attribute to the IRI?

III. Over the course of the study, I noticed _____. What accounts for this change?

IV. What other information did you use this year to plan for reading instruction?

V. How does _____ compare to the IRI?

VI. If another teacher asked if they should begin using an IRI in their classroom, how would you reply?

VII. If you teach at a different school next year, what is the likelihood that you will administer an IRI to your students?

Appendix F

Member Check Signature Sheet

Thank you for participating in my dissertation study. Please review the following pages of my dissertation. Please write comments on the document if you have any concerns. Thanks again for your time!

Pseudonym_____

Please initial the appropriate blank.

____ I have reviewed the description of my teaching and recommend the following changes.

___ I have reviewed the description of my teaching and have no suggestions regarding changes or additions.