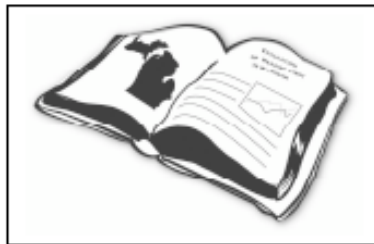


Evaluation of Reading First in Michigan
Technical Report #7.4
September 2009



**Understanding Efforts at Instructional Change: Coach-based Professional
Development in Reading First**

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Suggested citation: Scott, S. E., Cortina, K. S., & Carlisle, J. F. (September 2009). *Understanding efforts at instructional change: Coach-based professional development in Reading First*. Technical Report #7.4. Evaluation of Reading First in Michigan. Ann Arbor, MI: University of Michigan.

Abstract

The Reading First (RF) program (Part B of the No Child Left Behind Act of 2001) placed emphasis on the role of professional development as a means of improving early elementary instruction in reading, and in many states, including Michigan, literacy coaching was an important component of the professional development provided for the teachers. The purpose of this paper is to examine coaching in the early years of the RF program in Michigan. We describe the professional characteristics of coaches, the roles of coaches and their interactions with teachers, and teachers' and coaches' views of coaching as a means of supporting teachers' professional learning. The findings show that literacy coaching involved a wide range of activities; positive responses to the professional development, including the coaches' activities, were most evident when there was school-wide buy-in to support improvements in literacy instruction. The results suggest the promise of literacy coaching as a means of supporting teachers' professional growth; further study is needed to determine the particular roles of literacy coaches that bring about improvements in reading instruction and students' reading achievement.

Understanding Efforts at Instructional Change: Coach-based Professional Development in Reading First

Introduction

Title 1 Part B of the No Child Left Behind Act of 2001 established the federal program called Reading First (RF). This program provided states with the means to support low-achieving elementary schools in high poverty neighborhoods with the resources to implement high quality research-based reading programs for students in kindergarten through grade three (U.S. Department of Education, 2002). RF placed unparalleled emphasis on improving literacy instruction in primary classrooms and significantly increased the federal investment in reading instruction in the early grades by providing schools with funds to introduce scientifically-based reading curricula, systems of accountability for tracking students' individual progress in reading, and to implement professional development programs to support improvement in K-3 instruction. Many states included literacy coaches in their program design as a cornerstone of their RF related professional development efforts. Given evidence that the success of reform efforts that adopt a coaching model often hinge on the quality of the coach (Poglinco, Bach, Hovde, Rosenblum, Saunders, & Supovitz, 2003), we set out to understand the quality of coach-based professional development more systematically. This study was organized around three broad aims: 1) to understand who was working as a coach for RF in Michigan, including their training, experience as teachers, and knowledge about literacy; 2) to understand the structure and core content of the interactions between coaches and teachers; and 3) to understand the relationship between coaches and teachers, especially with regard to teachers' attitudes toward coaching.

Michigan was one of the first states to receive RF funding and to implement this ambitious program of reading instruction reform. The cornerstone of Michigan's RF efforts was a comprehensive program of professional development. The content of the program was consistent across all RF districts and schools, delivered through regular meetings at the school or district level throughout the year. In addition, each RF school hired a full-time literacy coach to assist in the implementation of professional development and provide support for teachers as they engaged in the day-to-day work of teaching literacy to children in kindergarten through third grade.

Quality of Professional Development

Desimone (2009) argues that recent research reflects a consensus regarding key features of professional development. These include: a) content focus, b) active learning, c) coherence, d) duration, and e) collective participation. Michigan's RF professional development model embraced each of these five features. Coaches were pivotal to the delivery of the professional development content and created structures that encouraged active learning and transfer of ideas from professional development workshops to the classroom. More specifically, the coaches a) facilitated weekly grade level meetings with teachers that were focused on instruction and assessment at specific grade levels, b) facilitated monthly professional development workshops that targeted the specialized knowledge and skills that teachers needed in order to implement the type of instruction endorsed by RF, and c) supported teachers' everyday classroom-based efforts to improve instruction. Therefore, Michigan's RF coaching model is - in theory - well aligned with the key features of effective professional development identified through current research.

Investigating the phenomenon of coach-based professional development seems especially important, given that the concept of coaching has quickly become widespread, with very little research to support this “scaling up” (Bean, 2004). In this investigation we set out to understand who was working as a coach, what kinds of professional interactions occurred between coaches and the kindergarten through grade 3 classroom teachers, and what elements of the “ideal” professional development model resonated with the teachers. Our study was carried out in the early years of implementation of RF in the state, at a point when participating schools had employed a coach to facilitate professional development for either one or two years.

Literacy Coaching as a Model of Professional Development

Effective professional development substantively changes teachers’ instruction (e.g., Correnti, 2007). However, the effects of professional development are moderated by such factors as teachers’ knowledge and beliefs about reading instruction and their satisfaction with their current practices (Wixson & Yochum, 2004). Because teachers do not necessarily make constructive changes to their teaching even when they express satisfaction with opportunities to engage in professional development (Elmore, 2006; Richardson & Placier, 2001), recent research has focused on identifying conditions that foster teachers’ professional growth as well. One such condition is support from a literacy coach, which might encourage teachers to implement practices that are emphasized in the professional development program (Cantrell & Hughes, 2008).

Scholars and educators have made strong claims in recent years that literacy coaching is an important professional development tool that has the potential for improving literacy instruction in classrooms across the United States (Bean, 2004; Dole,

2004; International Reading Association, 2004; Rosemary, Roskos, & Landreth; Walpole & McKenna, 2004). Professional organizations in the field have offered guidelines about literacy coaching, including, for example, competencies needed for effective coaching and proposals of coaching roles that are considered most effective (International Reading Association, 2004).

While the literature on professional development consistently advocates for using coaches to support teachers in their daily work (c.f., Elmore & Burney, 1999; Fullan & Hargreaves, 1992), we need to know more about coach-teacher interactions and teachers' perceptions of the support they receive in order to advise schools and districts as to how they can use coaching to leverage instructional change in classrooms. In particular, it seems important to understand if and how coaches make it possible to carry out the very demanding requirements of a reform effort such as RF. We aim to investigate this by looking at both the structure and substance of coach and teacher interactions (Garet, Porter, Desimone, Berman, & Yoon, 2001) and to understand the ways in which teachers perceived coaches' efforts.

In their attempt to delineate high-quality professional development, Garet et al. distinguished “structural” features – the structure and design of the professional development activities – from “core” features – the substance of the professional development experience. We used these categories broadly to organize our investigation of the various interactions between coaches and teachers as well as to understand which elements of professional development resonated with teachers. Surprisingly, while experts and professional organizations in the field of reading have offered guidelines regarding who should serve in the role of coach, including, for example, competencies

needed for effective coaching (Bean, 2004; International Reading Association, 2004; Rosemary et al., 2007; Walpole & McKenna, 2004), there is very little guidance regarding the structural and core features of the professional development activities that involve coaches. For example, in a position paper, the International Reading Association (IRA) (2004) proposed that literacy coaches should minimally:

- Be excellent teachers of reading, preferably at the grade levels at which they are coaching;
- Have in-depth knowledge of reading processes, acquisition, assessment, and instruction;
- Have expertise in working with teachers in order to improve their practices;
- Be excellent presenters and group leaders; and
- Have the experience or preparation that enables them to model, observe, and provide feedback about instruction for classroom teachers.

The IRA also suggested that, ideally, literacy coaches should be certified reading specialists or working towards reading specialist certification (IRA, 2004). These recommendations are a laudable effort to define what characterizes a “highly qualified” coach, yet they do very little to provide guidelines for coaches to structure their work. Furthermore, there is only implied acknowledgement of the role of subject matter or pedagogical content knowledge (Shulman, 1987). That is, it is implied in the policy documents that a coach with in-depth knowledge of reading process, acquisition, assessment, and instruction would then use this knowledge base in coach interactions.

Despite the relative lack of guidance in national policy documents, Michigan’s RF program provided guidance regarding *structure* by requiring that coaches conduct weekly

grade level meetings with all kindergarten through third grade teachers. There was also guidance for the core content of professional development; Michigan's RF program standardized the content for the professional development modules. Despite these requirements, we have very little detailed information about the content of the day-to-day interactions of coaches and teachers—for example, information about instructional practices mentioned in sessions that covered the LETRS modules that were emphasized in grade level meetings. We wondered what coaches and teachers focused on in grade level meeting and one-on-one meetings. Our investigation was designed to provide some insights into the focus of coach-teacher interactions.

Finally, we aimed to understand coaches' and teachers' knowledge as well as teachers' views of the literacy coaching they received. Because literacy coaching is unlikely to lead to improvements in reading achievement unless the teachers benefit from coaching, we believe it is critical to examine teachers' views of literacy coaching and to understand the role of knowledge in coach and teacher interactions.

This investigation attempts to not only understand the content and structure of an embedded professional development model but also to understand the content and structure of coach-teacher interactions from the perspective of the teacher. Developing this knowledge base vis-à-vis school-based literacy coaching will provide important guidance for schools and districts regarding ways in which coaches' jobs can be shaped so as to maximize the potential for the coach to be successful in her role. To accomplish these goals, we used survey and log data to answer the following research questions: (1) What was the background and training of individuals' working as RF coaches; (2) How knowledgeable were the coaches? And what was the relation of coach and teacher

performance on measures of knowledge about reading?; (3) What was the structure and substance of coach/teacher interactions as reported on coach logs?; (4) What were coaches' perceptions of factors that influence the effectiveness of the support they provided to teachers?; (5) How did teachers view the support provided by their coach?; (6) What conditions facilitated successful coach-teacher interactions?

Method

Participants

Literacy Coaches. In 2004-2005, there were 109 individuals working as coaches in RF schools throughout Michigan; 105 coaches participated in this study. Literacy coaches were predominantly white, female, and had a master's degree: 103 of the 105 coaches were female; 77 of the 105 coaches were white, 22 were African American, 1 was Hispanic, 1 was Latino/a, and 1 was biracial/multiracial. Three respondents chose not to report their race.

Literacy coaches had a range of classroom teaching experience. Only one coach reported having no K-12 classroom teaching experience; five coaches had teaching experience in teaching in grades 4-12 but not at the grade levels in which they coached (K-3). Coaches had, on average, 16.3 years K-12 teaching experience (SD = 9.2, range = 0-37 years). Coaches' average teaching experience at grades K-3 – the grade levels coaches were responsible for – was lower with an average of 10.8 years (SD = 8.9, range = 0-36 years). All coaches had at least a bachelor's degree, and 91% of coaches (n = 96) held a master's degree. The area of specialization for the master's degrees, shown in Table 1, indicates that 26 of 105 (24.7%) of coaches are certified reading specialists.

Table 1: Master's Degree Specializations

Area of Specialization	Coaches	Teachers
Reading/Literacy	38%	11.3%
Elementary Education	22%	23.1%
Early Childhood Education	12%	9.1%
Special Education	6%	7%
Other	7%	18%
Multiple	7%	0
None	9%	32%

RF Teachers. In 2004-2005, 109 schools in Michigan were implementing the RF program. There were 1,199 teachers in kindergarten through third grade classrooms at the beginning of the school year in these schools. Much like the RF coaches, RF teachers were predominantly female (91%); 59% had a master's degree; 70% were white, 14% were African American, 3.6% were Hispanic or Latino/a, and fewer than 2% were Asian, Native American, Pacific Islander, or self-identified other. Survey data collected regarding teaching experience, background, and training suggests that RF schools in Michigan had a relatively stable teaching staff. On average teachers had 15.1 years of classroom teaching experience (SD 10.06) and, on average, 7.7 years teaching in the school in which they were currently working (SD 7.2).

Data Sources

This study relies on four sources of data that were collected from RF coaches and teachers during the 2004-2005 school year. At that time, schools had completed one or two years of implementation of their RF program.

Coach Questionnaire. The coach questionnaire asked coaches to report demographic information such as years of classroom teaching experience and university training as well as their opinions about their own knowledge of early literacy instruction. This was completed by 103 of the 105 literacy coaches who were present at the

September 2004 coach training. One section of the coach questionnaire asked coaches to respond to ten questions in which they rated their knowledge of teaching children phonics, phonemic awareness, vocabulary, and comprehension strategies, as well as their expertise related to guided reading, children's literature, literacy assessment, teaching English Language Learners, and their school's comprehensive program. For each question, coaches' rated their knowledge on a nine-point Likert-scale that ranged from "no knowledge" to "expert". Coaches' answers to these knowledge questions were compiled into a single Knowledge Competency Rating (KCR). A coach who rated herself as "expert" on each of the ten questions would have a knowledge competency rating of 90.

Knowledge Survey (Coaches). The Knowledge Survey is a 28 question multiple-choice survey that is a modified version of the Teacher Knowledge Survey (TKS) loaned to us for purposes of this study by the Florida Center for Reading Research. The survey was designed to assess coaches' knowledge about early reading instruction. The TKS was originally designed for teachers attending a professional development program, and the survey was administered twice – once prior to attending the workshop and once after attending the workshop. The reliability for the TKS pre-test (Cronbach's alpha) was .61. The post-test alpha reliability of the TKS was .72. The pre-and post-test scores were significantly correlated, $r = .40, p < .001$. The modifications that were made to the initial version were made to remove reference to state specific assessments in Florida.

Coach Log. The purpose of the coach interaction log was to gain a more precise account of the daily work of RF coaches in a form that survey research does not afford (cf., Mraz, Algozzine, & Watson, 2008). In total, 37 coaches volunteered to complete the

interaction log. Twenty-seven coaches completed logs during each of the three data collection periods: fall, winter, and spring. Seven coaches completed the log during the fall only and three coaches completed the log during the fall and winter. In total, we coded 94 coach logs. Repeated measurement ANOVA did not reveal significant differences across waves; therefore all completed logs were included in this study. In each log, coaches documented the various interactions that occurred throughout each day in a typical school week by recording:

- The nature of the interaction
- Individuals present and their job titles
- Approximate duration of the interaction (in minutes)
- A brief description of the interaction and action taken

Coaches were mailed a blank log, a sample log, and detailed directions; completed logs were returned to us via mail within one week of completion.

Teachers' Quest. This is a researcher-developed survey that all RF teachers were asked to complete in the fall, winter, and spring of the 2004-2005 school year. The average participation rate was 94.7% (1,135 teachers) for the fall, 94.8% (1,129 teachers) for the winter, and 92.8% (1,103 teachers) for the spring. Each version of the questionnaire included surveys of practices teachers utilized in their reading instruction, teachers' satisfaction with their work, as well as their attitudes toward teaching and general experience with the implementation of RF at their school. Also included in the questionnaire was an assessment of teachers' knowledge on a measure called *Language and Reading Concepts* (LRC). LRC included 56 items in three parts, each part was included in one of the three QUEST surveys. LRC was designed to sample information

about reading and reading instruction in the professional development program used at that time in Michigan’s RF schools—*Language Essentials for Teachers of Reading and Spelling* (LETRS) (Moats, 2003). A majority of the LETRS modules focus on the five components of reading instruction detailed in the National Reading Panel report (2000) and in the RF legislation. These areas include phonemic awareness, phonics, fluency, vocabulary, and reading comprehension.

Data Analyses

Log data. Each interaction reported in the coach interaction logs was entered into the database; overall, the coaches recorded 3,038 interactions. In the interaction section, coaches wrote a short note describing their work during the interaction; this was coded into eighteen “structural” categories. These are listed in Table 2.

Table 2: Structural codes: Coach roles

Structural category
Planning
Pop-in visits to classrooms
Grade level meetings
Working with student one-on-one
Working with small group of students
Modeling lesson
Team teaching
Attending professional development
Leading professional development
One-on-one meeting with teacher
Doing assessments with students
Teacher observation
Student observation
Assisting with K-3 classrooms
Teaching in classroom
Meeting with principal
Meeting with specialist
Other/sick/personal

After coding the structures for each coach, coaches' interactions were aggregated at the level of individual coach and then averaged across the 37 coaches. The structures that involved direct interaction with teachers, specifically *grade level meetings, one-on-one meetings with teachers, leading professional development, modeling, and team teaching* were then further analyzed in order to understand the content of the core professional development activities. The content analysis presents data at the level of specific coach-teacher interactions and characterizes, for each type of interaction, the percentage of time spent on any given topic (e.g., assessment, interventions).

Creating Composite Variables

Coach competency index. We used the questionnaire to gather information about the coaches working in Michigan's RF schools and from this information created a composite coach competency variable, which included those questions and demographic information that aligned with the recommendations of the IRA. The coach competency index was a composite of six individual variables which were summed to make a coach competency rating. The six variables were: (1) master's degree status, (2) specialist certification status (reading specialist, speech language pathologist, bilingual endorsement, or special education), (3) score of above 25 on knowledge survey, (4) three or more years K-3 teaching experience, (5) strongly agreed that he/she was an excellent teacher of reading, and (6) strongly agreed that he/she had extensive experience making formal presentation. A composite score of 6 would suggest that the coach had each of the six competencies outlined by the IRA.

There were no coaches in the sample who had all of the competencies recommended by the IRA. The largest percentage of coaches met three out of the six

criteria. Most frequently, coaches had a master's degree and three or more years teaching experience. A summary of coach competency ratings is detailed in Table 3.

Table 3: Coach Competency Index Summary

Competency Rating	Percent of coaches
1	2% (2)
2	31% (32)
3	45% (47)
4	16% (17)
5	6% (6)

Teachers' satisfaction with their coach. The teacher questionnaire contained four items that directly addressed the teacher's satisfaction with the coach (response categories: strongly agree, agree, disagree, strongly disagree). These statements were:

- *The literacy coach supports my efforts to teach reading effectively*
- *The literacy coach or literacy consultant helps me figure out how to use the reading program effectively*
- *Instructional leaders from my school have helped me understand how to use data from student assessments to make instructional decisions*
- *I would like more guidance from literacy coaches/specialists regarding how to best teach literacy to the students in my school (reverse coded)*

Using teachers' responses to these questions, we created a scaled score (Cronbach's alpha = .61) and combined the average coach satisfaction of the teachers with the data of their respective coach.

Teacher survey data. For the purpose of this report, teacher data were aggregated on the school level in order to link the average experience of teachers at one school to the coach data (note that there was one coach per school).

Results and Discussion

What was the background and training of individuals working as RF coaches?

Along with information describing the coaches' personal and professional backgrounds, coaches reported on their skills and experiences. Several questions on the Coach Questionnaire were designed to ascertain coaches' self-efficacy regarding their own abilities as teachers of reading and their experience in making presentations similar to the professional development they were expected to implement in their schools. A summary of coaches' responses is provided in Table 4. The vast majority of coaches felt well prepared for the job and felt that their own teaching experience prepared them to work as RF coaches. Overall, coaches were experienced teachers with master's degrees. However, their experience as reading experts varied.

Table 4: Coaches' Self Reported Skills and Experiences

	N	Agree or Strongly Agree (%)
Am excellent teacher of reading	102	99
Have extensive experience making formal training presentations	103	68
I am often unsure about what I am supposed to do as literacy coach	103	25
I feel well prepared for my current position as literacy coach	102	67
I would like to know more about adult learning theories	101	62
LETRS seminar prepared me to be successful as literacy coach	100	60
Classroom teaching experience prepared me for job as literacy coach	103	86

While the IRA “strongly recommends that only teachers who meet these five

criteria [the criteria listed in the IRA position statement] act as reading coaches” (2004), this study suggests that at the time of this study, a majority of Michigan’s RF coaches did not meet these criteria. Given the rapid rise of coaching across the U.S., it is not surprising that not all coaches had the qualifications listed by the IRA. An area worthy of further investigation is which, if any, of the coaching competencies are crucial for coaches to succeed in helping teachers change their instructional practices and, ultimately, improve instructional outcomes in the area of literacy.

Coaches’ success in working with teachers might also involve dimensions of coaching that were not captured by this study. For example, there is some evidence that “effective” coaches have strong interpersonal skills, such as tact, patience, good communication abilities, and flexibility (Poglinco, et al., 2003). Although the IRA strongly recommends that reading specialist certification is important for literacy coaches, less than twenty five percent of coaches in this study had reading specialist certification (24 of the 105 coaches). However, it is not clear from our results whether (or how) reading specialist certification contributes to coaches’ ability to work with teachers. Reading specialist training has historically focused on working with students, whereas the job of literacy coaches in Michigan’s RF schools was primarily to work with teachers to improve literacy instruction in K-3 classrooms.

How knowledgeable are the coaches? And what is the relation of coach and teacher performance on measures of knowledge about reading?

Our third research question focused on the knowledge about reading that coaches brought to their work with the teachers. Performance on the knowledge survey ranged from a raw score of 9 to 28, with a mean of 21.2. One coach answered all 28 questions on

the knowledge survey correctly, while five coaches answered 27 of 28 questions correctly. The results of the coaches' performance are summarized in Table 5 (first row).

With regard to coaches' ratings of their own knowledge on the survey, most coaches rated themselves as very knowledgeable, rather than expert, for each of the ten questions on the self-reported knowledge section of the coach questionnaire (e.g., knowledge needed to teach phonics or comprehension) (Table 5 second row). Coaches' knowledge of teaching English Language Learners received the lowest average rating on a 9 point scale (mean of 4.2, SD 1.7), while coaches were most secure in their knowledge of how to use assessment data to inform instruction (mean of 7.2, SD 1.31). Coaches' performance on the knowledge survey and their self-reported knowledge competency were not significantly related ($r = -.004, p = .969$).

Table 5: Knowledge Survey Results

	N	Range	Mean	Std. Deviation
Score on Knowledge Survey (28 questions possible)	105	9-28	21.2	3.75
Self-Reported Knowledge Competency	100	34-88	65.84	8.97

As noted above, the teacher questionnaire also included a test of their knowledge of literacy (LRC). We used the average of teachers' scores in each school as an indication of the specific challenges a coach might face at his/her school. Combining the average teacher score on LRC and the coach questionnaire data provides evidence that coaches who worked primarily with low-knowledge teachers defined their role differently than coaches with more knowledgeable teachers. For example, when their teachers as a group were below average on the LRC measure, coaches put more emphasis on the importance of comprehension ($r = -.28, p = .010$) and phonological awareness, ($r = -.29, p = .007$).

In self-reports of their roles, coaches also indicated that they were significantly more inclined to teach model lessons for their teachers if they were less knowledgeable. When the teachers had stronger basic knowledge (as shown on the LRC), the coaches were more inclined to share and discuss recent research findings with their teachers and administration and to put more emphasis on planning and conducting grade level meetings ($r = .28, p = .007$). Coaches with more knowledgeable teachers were also more willing to acknowledge the relevance of the home environment for early reading success ($r = .30, p = .004$).

What were the dominant structures of coach/teacher interactions?

A review of over three thousand coach interactions in the log data suggested to us that Michigan's RF coaches took on varied roles, despite the fact that all were hired under a similar job description and were expected to take a lead role in RF professional development efforts. As Table 6 shows, coaches' work was distributed, broadly, across all of the coding categories. For example, 16% of coaches' time, on average, was spent teaching and/or coaching teachers in activities such as modeling a lesson, team teaching, or observing a teachers' teaching. Similarly, 18% of coaches' time, on average, was spent managing RF instruction by popping into classrooms for short visits, conducting grade level meetings, or assisting in K-3 classrooms.

Work associated with assessment and planning also accounted for a large percentage of coaches' time. Fifteen percent of coaches' time was coded as engaging in assessment related activities while 22% of their time was spent planning. In contrast, leading professional development accounted for a relatively small amount of their time, perhaps because the coaches shared responsibility for these sessions with the Reading

First Facilitator, a state employee who provided guidance in implementing Reading First for five or six different schools, usually in a single district. On average coaches spent only 2% of their time engaged in leading professional development. While it may seem surprising that professional development represented such a small portion of coaches' work, it indicates that most professional development was embedded in grade level meetings, one-on-one meetings, modeling and co-teaching in classrooms, and the like. Overall, coaches structured their work so that one third of their day involved direct contact with teachers and classroom instruction, approximately one third was spent planning and doing assessment related work such as making graphs, distributing materials, and data entry, 13% involved with students, and 13% was spent meeting with the principal or other school-based specialists. A summary of how coaches' spent their days is presented in Table 6.

While an understanding of how coaches structure their day is important, it still does little to advance our understanding of which of these structures are important given the goal of using the literacy coach as a resource to improve classroom instruction.

What was the dominant substance of coach and teacher interactions?

Looking more closely at the substance of the interactions between coach and teacher(s) allowed us to understand the ways in which different coaches were utilizing the structures to focus on various aspects of teaching literacy. Given that the coach-teacher interactions are drawn from structures that represent a relatively small portion of the data set, we felt it was important to summarize the number of interactions and total time for each structure. These are summarized in Table 7.

Table 6: Summary of how coaches structure their work

Category	Code	Average	Range	N of coaches reporting this activity
Management/organization	Pop in visits to classrooms	7%	0 - 19%	35
	Grade level meetings	7%	1% - 19%	37
	Assisting in K-3 classrooms	3%	0 - 14%	23
	Teaching in classroom (no one else present)	1%	0 - 22%	13
Teaching/coaching teachers	Modeling lesson	4%	0 - 18%	31
	Team teaching	3%	0 - 18%	23
	One-on-one meeting with teacher	5%	0 - 13%	35
	Teacher observation	2%	0 - 10%	23
	Leading professional development	2%	0 - 18%	20
Teaching students	Working with student one-on-one	1%	0 - 6%	18
	Working with small group of students	5%	0 - 22%	27
Assessment-related activities	Doing assessments with students	6%	0 - 33%	32
	Student observation	1%	0 - 3%	16
	Assessment related work (making graphs, distributing materials, data entry)	8%	0 - 27%	36
Meetings with others	Meeting with principal	4%	0 - 20%	35
	Meeting with specialist	9%	0 - 26%	36
Coach job management activities	Planning	22%	3% - 43%	37
	Attending professional development	6%	0 - 22%	25
Other	Sick or Personal Day	1%	0 - 20%	5
	Other codes	3%	0 - 12%	27

Table 7: Coding core content of coach-teacher interactions

Structure	Number of interactions	Total number of minutes
Grade level meetings	238	10,220
Modeling	157	7,391
Team teaching	85	4,635
Conducting professional development	32	3,770
One-on-one meetings	27	8,785

The results indicated that grade level meetings were the only teacher-coach interaction that every coach reported in her log data. Coaches spent, on average, 7% of their time in grade level meetings; however, there was a wide range across the data set – ranging as low as 1% to as high as 19%. Table 8 summarizes the content of grade level meetings, as reported in the logs.

Table 8: Core content of Grade Level Meetings

Content	Percentage of time reported for grade level meetings that is focused on this topic
Interventions	17%
Assessment	40%
Instruction and assessment	6%
Instruction (including working with core reading program)	18%
Book study and teacher knowledge development	10%
Individual student progress	4%
Other or not specified	6%

Discussion of assessment dominated the conversation (40%) while instruction (18%) and instruction and assessment (6%) received less attention. Coaches also used grade level meetings as a space to engage in more informal professional development (10% of reported time on average). This informal professional development took many forms including reading books with their teachers and building teacher knowledge by

discussing research articles and targeting specific topics that teachers wanted to learn more about, such as phonemic awareness.

Modeling represented, on average, only 4% of coaches' time. Modeling was used to demonstrate core instructional practices from the comprehensive reading programs (76% of time) and, to a lesser extent, to model interventions (21%). Only 3% of modeling interactions did not fall into one of these two categories. Team teaching represented only 3% of coaches' time, typically focusing on specific core instructional practice, such as guided reading or a storybook read aloud (78% of time). To a lesser extent, team teaching was also utilized for coaches and teachers to co-teach intervention lessons (9% of time). Thirteen percent of team teaching interactions had unspecified content. If one of coaches' primary roles is to help teachers improve instruction, and we believe that being in classrooms enacting core instructional practices is a robust way to improve instruction, then these findings suggest that modeling and team teaching are potentially robust structures for focusing on instruction in teacher-coach interactions.

As mentioned above, leading professional development represented only 2% of how coaches spent their time. The content of the professional development was specified at the level of the state and thus was relatively uniform; sessions focused on one of the nine modules in the LETRS program. Nonetheless, professional development on the LETRS modules was the focus for only 37% of what coaches coded as their professional development interactions. Surprisingly, 49% of the professional development focused on core instructional practices. Other content foci for professional development included assessment and interventions (6%) and professional development for parents (3%). Six percent of professional development interactions were unspecified.

Finally, one-on-one meetings with teachers represented 5% of coaches' time. A summary of the content of these one-on-one meetings is presented in Table 9.

Table 9: Core content of one-on-one meetings with teachers

Content	Percentage of time reported for one-on-one meetings focused on this topic
Interventions	20%
Assessment	13%
Instruction and Assessment	2%
Instruction and core reading program	28%
Book study and personal professional development	5%
Planning for co-teaching	3%
Debriefing about observation/pre-observation meeting	6%
Individual student progress	14%
Classroom management	4%
Other or Not specified	8%

While discussion of interventions and assessment dominated the grade level meetings, one-on-one meetings with teachers focused on different topics. Instruction and the core reading program represent the most dominant topic (28% of time) while individual student progress also received considerable attention (14% of time). Classroom management, which was never reported in grade level meetings, received some attention in one-on-one meetings (4%). The presence of discussion of classroom management in a one-on-one setting and the absence of it in a group setting is not surprising, given that classroom management happens at the level of the individual classroom; it was perhaps not helpful to discuss individual classroom management issues in a group setting, such as grade level meetings.

What were coaches' perceptions of factors that influenced the effectiveness of the support they provided to teachers?

Coaches felt strongly that the teaching practice in their schools had changed since the school joined RF. Only 8% of the coaches indicated that the teaching practices had remained the same. Accordingly, about two thirds of the coaches believed that the literacy teaching practices in their school were well aligned with the teaching practice promoted by RF. However, more than 39% of the coaches experienced at least resistance from teachers to change their teaching practices. Some coaches (15%) were of the opinion that literacy teachers in general did not appreciate help or advice about literacy teaching. For the most part, coaches felt strongly supported by the principal in their effort to introduce changes (84%). More than 80% of the coaches also felt that the principal encouraged teachers to take risks in their effort to implement changes. Coaches were also very appreciative of the professional development they received; over 90% of them felt that they got adequate support through professional development for the changes they introduced at their schools.

That a vast majority of coaches felt that they received adequate support for their work through professional development and that 80% of coaches felt the principal encouraged their efforts speaks to the importance of nurturing the coaches' developments and efforts. A Reading First facilitator was responsible for monitoring and supporting coaches in their daily work, as well as assisting districts and schools with issues of program implementation. Making sure the literacy coach felt supported was clearly an important component of an embedded professional development effort. While the coach,

in many cases, was working diligently to support teachers in their daily work, the coach also needed to feel supported in her efforts.

Finally, while this study does not focus on understanding how coaches worked with resistant teachers, this does seem like an important issue. Because 39% of coaches reported tension related to acceptance of coaching efforts, understanding how (or if) coaches leveraged instructional change among those unwilling to change is an area worthy of further investigation.

How did teachers view the support provided by their coaches?

In general, teachers' satisfaction with the coach was not significantly correlated with the educational credentials and teaching background of the coach, with the exception of years teaching first grade ($r = .22, p = .029$). Teachers appreciated regular grade level meetings, which were organized and often run by the coach. If they occurred at least once per week (as compared to less frequently), the satisfaction with the coach was significantly higher ($r = .23, p = .032$). Teachers obviously valued coach feedback about their literacy teaching, given the association with satisfaction with the coaching ($r = .28, p = .006$). Consistently, coaches who reported that teachers saw them as a resource for advice and ideas on how to improve teach literacy instruction tended to have teachers who were satisfied with their work and work conditions ($r = .21, p = .036$).

Given the importance of the use of DIBELS and the use of detailed assessment data to inform literacy instruction, it is not surprising that teachers were more satisfied with their coach when the coach emphasized this aspect of their job ($r = .21, p = .034$). Teachers also appreciated coaches' efforts to conduct workshops about literacy when they provided opportunities for hands on practice (correlation with teacher satisfaction r

= .21, $p = .044$). This is consistent with Cohen and Hill's (2001) findings, which indicate that change in teacher practice is largely influenced by the coherence of the professional development and opportunity to learn how to use new teaching practices.

Analyses also provided some evidence that the satisfaction with the coach was contingent on a positive attitude of the school administration; that is, satisfaction with the coach was systematically higher if the coach felt that the principal was willing to make changes ($r = .21, p = .046$).

The analysis also suggested tensions between coaches and teachers. Coaches who felt resistance among the teachers at their school with regard to the way the way they taught reading were rated less favorably by the teachers ($r = -.20, p = .046$). Accordingly, low coach satisfaction was associated with the coach's perception that his/her efforts to introduce change involved only a few teachers and rarely the whole faculty. These findings, when paired with the findings regarding the principal's willingness to make changes, suggest that an "all hands on deck" approach – among teachers, administrators, and the literacy coach - is an important element of teachers' satisfaction with instruction reform efforts like RF. This is consistent with other research on instructional change, which suggests that comprehensive school reform is dependent on buy-in from stakeholders at all levels (Aladjem & Borman, 2006).

What conditions facilitated successful coach-teacher interactions?

A more integrated picture of a coach who was held in high regard by his/her teachers emerged when we carried out statistical analyses that allowed us to estimate the effects on teacher satisfaction of all relevant coach characteristics simultaneously (multiple regression). This method helped to identify the key aspects of successful

coaches as they emerged from the combination teacher and coach questionnaires. Table 10 presents the final results of our multiple regression models with teachers' satisfaction as the dependent variable, showing the variables that accounted for a significant portion of the variance in teachers' satisfaction with their work. This model explained a statistically significant 29.8% of the variance (adjusted: 26.0%).

Table 10: Multiple Regression Satisfaction on Coach Variables

Predictor	Standardized Regression Weight	p
Helping teachers using student assessment results for instruction decisions	.34	.001
Meeting 1 on 1 with teacher is important	-.32	.002
Teachers value feedback I provide about their literature teaching	.21	.029
Coaches years of teaching in grade 1	.25	.009
Principal is willing to support changes	.20	.04

The results indicate that teachers were particularly satisfied with their coach if the coach made it a high priority to help the teachers understand and utilize DIBELS assessment results. Teachers also appreciated concrete feedback about their teaching. However, as the negative regression weight of the one-on-one meetings indicates, teachers preferred to interact with the literacy coach in group settings rather than one-on-one. This is an important finding because this variable does not have a significant univariate correlation with teacher satisfaction. The significant negative effect is associated with the positive effect of the coach's help with interpreting the students' assessment results. One possible interpretation would be that teachers appreciated general instruction and guidelines about how to use the DIBELS findings but did not want the coach to micro-manage how they went about using the assessment results in their classes.

A different interpretation is that the group setting was safer because it didn't necessarily expose classroom instruction data at the level of the individual classroom. One-on-one meetings, by contrast, might be riskier because assessment results are explored at the level of the individual teacher.

We note that it was not the coaches' total teaching experience that explained teacher satisfaction but specifically (and only) the years of teaching first grade. This might be explained by the relationship between the required elements of RF – with an emphasis on early decoding skills, phonics, and phonemic awareness, and the fact that teaching at the first grade has historically focused more on these elements of teaching reading more than at other grade levels.

Teachers appreciated professional development opportunities that provided opportunities for hands on practice (correlation with teacher satisfaction $r = .21, p = .044$). We interpret “hands on practice” to mean that the professional development focused on practical learning and provided teachers with opportunities to try out the practices being espoused in the professional development. This finding is well aligned with the research literature. Professional development that provides teachers with opportunities for hands on practice potentially circumvents the “problem of enactment” (Kennedy, 2005), a term coined to refer to the phenomenon of teachers having a wealth of knowledge and commitment to principles and ideals but who are unable to enact these principles in classroom instruction. These findings have important implications for the design of embedded professional development initiatives. That is, teachers find opportunities to learn to do practice a satisfying element of professional development.

Summary of Findings and Directions for Future Research

While the enthusiasm for coaching as a vehicle for embedded professional development seems widespread, there is little empirical data and few studies published in peer-reviewed journals that offer insights into the specific ways in which coaches can effectively support instructional change. This research on coaches working in Michigan's RF schools offers empirical data that advances our understanding of coaching and the relationship among coaches and teachers in settings where there is a concentrated focus on changing and improving literacy practice through intensive professional development efforts. Additionally, this study offers some guidance for schools and districts attempting to make embedded professional development the cornerstone of their professional development efforts.

Broadly, the findings suggest that teachers in RF schools appreciated embedded professional development efforts that were coherent and that had buy-in from all stakeholders. This buy-in included the principal's support of both the coach and teacher and the principal's support of the overall changes to literacy instruction. Buy-in from stakeholders seems especially important given the finding that coaches who felt resistance among the teachers at their school with regard to the way they taught reading were rated less favorably by teachers. Understanding how coaches can successfully facilitate instructional change in schools with high levels of teacher resistance is an area worthy of further research.

That teachers valued coherence and predictability is important to keep in mind when substantial change is intended. The coach can play an important role if she/he introduces regularly scheduled grade level meetings and predictable structures, such as

daily pop-in visits. Research has shown that traditional models of professional development, such as one day workshops on a single topic, are less desirable than sustained professional development opportunities that focus on academic subject matter, give teachers opportunities for hands on learning, and are integrated into the daily life of the school (Garet et al., 2001).

While a great deal of emphasis has been placed on what qualifies someone to be a coach, we found that the suggested competencies – years teaching experience, certification as a reading specialist, master’s degree status - did not correlate with teacher satisfaction except for years teaching first grade. What contributed to teacher satisfaction emerged when we analyzed how coaches structured their interactions with teachers. For example, coaches who scheduled grade level meetings on a regular basis had teachers who were more satisfied than coaches who scheduled grade level meetings more sporadically. Certainly, coach competencies are not irrelevant. But this study suggests that it is not who coaches are, but what they do, that contributes to teacher satisfaction. It is possible that there is a minimum threshold of qualifications that all of the coaches in this study had. It is also possible that interpersonal skills, an area we did not investigate, played a large role in the teachers’ perception of the coach. However, our findings suggest that policies and research should aim primarily at *what* coaches should do rather than who they are and what formal credential they have.

One aspect of coach competencies that warrants further comment is their knowledge about reading. Our results highlight the complex role of knowledge in understanding coaching practice. Like many of the competencies we investigated, there was large variance in coaches’ performance on the survey of knowledge about reading

and reading instruction. Furthermore, a coaches' score on the knowledge survey was not predictive of how the coach was perceived by teachers. Rather than conclude that content knowledge is irrelevant, we would like to draw attention to recent work (Carlisle, Correnti, Phelps & Zeng, 2009; Hapgood, Palincsar, Kucan, Gelpi-Lomangino, & Khasnabis, 2005; Phelps & Schilling, 2004) which suggests that the ways in which knowledge measures have been conceptualized in the field of literacy (e.g., Moats & Foorman, 2003), while effective for capturing content knowledge, do little to capture the knowledge about practices for teaching reading effectively—what is referred to as pedagogical content knowledge (Shulman, 1987). We are skeptical that measures of content knowledge, alone, can serve as an appropriate measure of knowledge relative to coaching. As Carlisle et al. (2009) note, “An issue that still needs to be addressed is whether the content of ...[existing measures] adequately samples the knowledge about reading that teachers use when teaching reading” (p. 475). Scholars have articulated specific knowledge for teaching (c.f., Ball & Bass, 2003; Ball, Hill, & Bass, 2005) in the field of mathematics and analogous work is underway in the field of literacy (Kucan & Palincsar, 2007, Carlisle, 2005). One can imagine a similar line of research that attempts to articulate and measure knowledge for coaching with attention to the specific practices that coaches need to know and be able to do in order to improve literacy instruction in early elementary classrooms.

Interestingly, our findings do suggest that the knowledge of the teachers influenced the form and content of coach-teacher interactions. For example, coaches with higher knowledge teachers were more likely to share findings from research studies while coaches with teachers who scored poorly on the LRC were more likely to model teaching

practices. This suggests that coaches were sensitive to the professional development of teachers and considered the ways in which various coaching activities could support teachers' professional learning.

Given evidence that coach competencies are not closely related to their effectiveness in working with teachers, we suggest that the particular tasks and activities that coaches carry out might provide greater insight into effective coaching. With this in mind, we were surprised that only one-third of coaches' time could be characterized as a direct interaction between coach and teacher. We were also surprised by the tremendous range of coaching activities each coach reported in her log. A better understanding of the high leverage coaching activities – that is, those coaching activities that are most likely to contribute to instructional change and improve literacy outcomes (Ball, Sleep, Boerst, & Bass, 2009) --would potentially license coaches to narrow the scope of their work. In this study, modeling and co-teaching emerged as structures in which coaches and teachers were able to focus on core instructional practices. Regularly scheduled grade level meetings also seemed important. If we believe that it is important for coaches to focus on instruction, then these three practices seem to have potential as practices that are central to the work of literacy coaching.

While this study is one step towards understanding the complex, multifarious endeavor we call literacy coaching, it has a number of limitations. First, we have log data from only one-third of Michigan's RF coaches. It is possible that the coaches interested in participating in this study were not representative of the larger group of coaches – for example, it is possible that study participants had more positive experiences in their work as coaches (i.e., felt more supported by their principals, felt well-liked by the teachers

with whom they worked, and felt prepared for the job of coaching) – than the entire set of coaches.

Secondly, we do not link coaches' work with student achievement outcomes. While understanding the relationship between coaches and teachers more fully is an important first step in developing our understanding of the nature of successful coach-teacher interactions, there is still a need to understand the causal chain of how coaching improves classroom instruction, and how improved classroom instruction can lead, ultimately, to increases in student achievement in reading.

Finally, understanding coaching through survey and log data can only get us so far. Though survey and log research can, broadly, help us to understand the phenomenon of literacy coaching, there is much that we do not understand about the coaching processes that contribute to positive school climates and instructional change. Over the past decade, researchers and practitioners have made calls for the importance of understanding classroom practice through close up examination of the work of teaching (Ball & Cohen, 1999; Lampert, 2001; McGill Franzen, 2005; Stigler & Hiebert, 1999). The same needs to be done for coaching.

While the coaching activities that successfully facilitate coach-teacher interactions about instruction offer us some guidance, the question of how coaches should, ideally, spend their time remains an area worthy of further investigation. Rita Bean's model of coaching (Bean, 2004), which was included in the International Reading Association's position statement on the role and qualifications of the reading coach in the United States, was derived from Bean's extensive experience working with coaches and reading specialists. In Bean's model, there are three different levels of work: level 1, or informal

relationship building activities; level 2, or structured activities such as co-planning and grade level meetings; and level 3, or more structured and intense activities that may create anxiety on the part of teacher and/or coach. While Bean's model details different levels of intensity regarding the work of coaching, it is not clear how coaches should use this model to guide their daily work. For example, should new coaches engage in many level one activities in order to build relationships with colleagues before engaging in level two or level three activities? Is a balance among all three levels of activities ideal? Are coaches who spend more time in level three activities more "effective"? This study does not provide answers to these questions except by showing that level three activities, such as modeling and co-teaching, represented a relatively small portion of the teacher-coach interactions. If level three activities have the most potential to facilitate instructional change, then the job of coaching and the professional development efforts for literacy coaches should be structured to enable coaches and teachers to engage in level three activities more regularly.

We end with a reflection on the efforts to provide coaching to stimulate and support teachers' learning in Reading First schools. At the end of an essay on professional development, Shulman (2004) wrote: "If we wish to create schools where reform will be enduring and not evanescent, we need to ask: Is this a school where teachers can learn? Unless we create the conditions for teacher learning, every single reform that we initiate, even if it looks like it is working at the beginning, will eventually erode and disappear. An effectively reformed school is a setting that is educative for its teachers" (p. 519). We suggest that educators and policy-makers consider the value of

coaching in facilitating and guiding teachers' learning, as the effectiveness of a program such as Reading First is contingent on improvements in the quality of reading instruction.

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