Supporting High School Teachers with Instructional Approaches for Adolescent Struggling Readers

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Students who enter high school far below grade level in reading will need powerful interventions to close their literacy gaps to be successful at their studies. But weak implementations of recommended instructional practices for adolescent literacy are often the reason many promising reforms fail. Even when the intended interventions are research-based and found successful in demonstration sites, new teachers often fail to put them into practice with fidelity and strength.

What are the major difficulties that teachers have implementing the frequently recommended approaches to assist struggling adolescent readers? What can be done to overcome these barriers to effective literacy instruction? Do some teachers need more help than others, and in what ways? We will address these questions of teachers' challenges and effective support systems with recent evidence from our study of different ways of implementing specific instructional practices to close adolescent literacy gaps.

Four Recommended Literacy Instruction Approaches

Over the past ten years, a team at Johns Hopkins University has been developing and evaluating an instructional package to assist ninth-grade students who enter high school two or more years behind in reading (McPartland, Balfanz & Shaw, 2004). This package includes four frequently recommended classroom approaches for struggling readers: teacher modeling of the reading process, pre-reading preparations for vocabulary and background knowledge, student team discussions of comprehension topics, and self-selected reading of diverse texts.

We have developed these instructional approaches to address the common profile of most adolescent struggling readers. Most of these students need to greatly improve their fluency and

comprehension with diverse high school reading assignments. They lack the fluency to read with ease and automaticity, so their mental energy is often exhausted just processing the text. They have no reserve to think along with the author and to check for understanding. So even when these students get through a reading assignment they have not applied the comprehension strategies to recall the main points or to make proper inferences or interpretations. Some struggling readers also have difficulties at the word attack level and lack a rich recognition vocabulary, although they can usually decode word sounds and combinations. Our recommended classroom practices are primarily aimed at minimizing the fluency difficulties and strengthening the comprehension strategies of our students, with opportunities to pull aside those who also most need assistance with word attack skills.

Adolescent readers also struggle when they lack the background knowledge to personally connect with a particular reading selection. This not only weakens the students' motivation to read but also obscures a framework for learning from the reading activity. Reading comprehension often involves fitting the new material into a personal framework, thus changing or enhancing it as a result of the mental activities accompanying the reading. Besides helping students learn strategies that encourage appropriate mental activities during reading, our recommended approaches also include pre-reading activities to build background knowledge that is also key to reading with motivation and for understanding.

The content and reading levels of the books and articles assigned to adolescent students are also important for a successful instructional program. Reading materials that are "high-interest and low-frustration" give students the best chance to benefit from instructional activities aimed at fluency and comprehension. Materials are "high interest" when the content deals with topics or situations that teenagers care about and want to discuss with their peers, so they will be

naturally motivated to read. Materials are "low frustration" when the reading difficulty level closely matches a student's current abilities, so that they can easily process the text with the chance to mentally engage with the author. Our program identifies reading assignments with these desirable properties that are also good literature, worthy of close attention and reflection.

Teacher modeling

There is strong previous research support that students can learn a great deal about reading comprehension strategies from closely observing how a mature reader mentally interacts with a reading selection (Beck, McKeown, Sandora, & Kucan, 1996). Teachers can model reading comprehension strategies with "read-aloud think-aloud" demonstrations during which they orally read a passage and pause regularly to say how they are thinking along with the author and checking for their own understanding. This instructional approach can "demystify" the reading process by revealing the complex thinking processes that are always involved, including points where it's alright to be confused or uncertain (McKeown, Beck, & Worthy, 1993). These demonstrations should also show how inferences and interpretations are constantly used to "read between the lines" to fully understand events, relationships or motives that are not explicitly revealed. Studies show that reading aloud to students and modeling good reading strategies increases their reading comprehension abilities (Blaney, 1993; Collins, 1991; Duffy, et al. 1987; Davey, 1983; Rosenhouse, Feitelson, Kita, & Goldstein, 1997) as well as motivation for reading (Albright, 2002).

Student team discussions

Students can also learn how to draw correct meanings from complex text by discussing comprehension questions with other students (McKinstery & Topping, 2003). When students must defend their answers by using text references or inferences, they need to learn how to

mentally interact with the material as they read. Hearing other's reactions to their thoughts and responding to them helps a student delve deeper into the meaning of a reading selection. And seeing the differences of insights and opinions among fellow students causes each person to appreciate the complexity of the reading process and the richness of possible interpretations. Teenagers also usually enjoy the social aspects of discussing shared readings with their friends, and feel peer pressure to attend closely to the materials for interesting things to share to comprehension questions (Fuchs, Fuchs, & Kazdan, 1999). In studies, students who participated in collaborative learning experiences outperformed students who worked individually on post-reading comprehension measures (Judy, Alexander, Kulikowich, & Willson, 1988; Klingner, Vaughn, & Schumm, 1998; McKinstery & Topping, 2003; Stevens, 2003; Stevens, Madden, Slavin, & Farnish, 1987).

Preparation for reading

Students are more likely to read with fluency and for understanding when they are ready to handle new vocabulary in the materials and have enough background knowledge to be motivated for the reading and to connect to for new learning (Britton, Stimson, Stennett, & Gülgöz, 1998; McNamara, Kintsch, Songer, & Kintsch, 1996; Pearson, Hansen, & Gordon, 1979).

Useful background knowledge before reading includes appreciation of the genre and the historical or geographic context of the selection, information about the author's characteristics and reputation, as well as consideration of the reader's own personal experiences and interests that connect to the material.

New vocabulary is best learned before a reading passage when a few key unfamiliar words have been identified that are most important for understanding and they are practiced within a meaningful context.

Self-selected reading

Students can increase their reading fluency by doing lots of reading on their own. More practice builds the skills and attitudes that are needed to read carefully and with ease (Cunningham & Stanovich, 1998). A frequent reader gradually increases the endurance to read for extended periods and to stick with a lengthy or difficult selection. The more a student reads, the more his or her vocabulary of recognized words grows, familiarity with various literary formats increases, and the confidence to benefit from reading is strengthened (Allington, 2005). When reading materials are chosen for high interest to the individual, the time for serious private reading should increase in amount and attention (McLoyd, 1979). In addition, interest in reading a specific book may lead to a greater motivation for reading in general (Guthrie, et al., 2006).

Research Methods

We designed a study about the implementation of these four recommended adolescent literacy approaches in high school ninth-grade English classes for struggling readers who are two or more years below grade level. The research is part of the National Institute of Child Health and Human Development's (NICHD) National Adolescent Literacy Network with additional funding from the U.S. Department of Education's Office of Special Education Research and Office of Vocational and Adult Education.

The main focus of the research is a randomized experiment to contrast three different ways of supporting teachers with the recommended literacy approaches, with quantitative measures of the quality of classroom implementations and gains in students' reading skills across

the comparison conditions. The three experimental conditions to support high school literacy teachers are workshops, lesson materials, and expert coaches. In one condition, teachers participate in two full-day workshops devoted to the recommended practices before the beginning of the school year, with another two-day workshop at mid-year to review and refresh the recommendations. These workshops are conducted by experienced staff from our university with time for participating teachers to discuss the research rationale and to practice classroom methods for each recommended approach. In the second condition, in addition to the workshops, teachers are provided with detailed daily lesson materials for using each of the recommended approaches, including classroom books and discussion materials for their students and manuals on how to use these materials and supporting lessons for daily instruction. In the third condition, coaching is added to the workshops and lesson materials where each participating teacher is visited in his or her classroom at least once per week by a well-trained peer for discussion and assistance with the recommended approaches.

We provide more details in the next section with the research rationale for expecting each condition to have positive impacts. In organizing the study, we determined that each school would be randomly assigned to only one condition using a cluster randomized design, rather than having different teachers in the same school assigned to alternative conditions, to minimize the risk of cross-contamination of comparison points.

Sample sizes were decided from a preliminary statistical power analysis for detecting modest differences between experimental conditions with high confidence. Since at least 54 separate high schools each with two ninth-grade teachers are needed as the study target (at least 18 schools and 36 teachers in each of the three conditions), our study was scheduled over a three-year period with annual cohorts of about 18 schools to obtain the total desired sample. This paper

reports on the available data collected over the first two years on a total of 41 schools with 84 teachers and 1,996 students.

We used trained classroom observers who visited each classroom at three different intervals across the year to record how often and how well each teacher used the recommended approaches, for comparisons between the experimental conditions. These observations were supplemented by student and teacher surveys that reported the frequency with which different classroom instructional approaches were used, including recommended activities as well as traditional ones. The surveys also obtained information on teachers' prior preparations for reading instruction and on students' background characteristics.

The quantitative data are used to answer three research questions:

Implementation: Are the recommended literacy approaches used more frequently and with greater quality when teachers are provided with different support conditions? Specifically, does the addition of coaching or lesson materials exceed workshops alone in terms of strong teacher implementations of each of the four recommended literacy approaches?

Interactions: Does the value of different support conditions depend upon the teacher's prior preparations in reading instruction? Specifically, does the addition of lesson materials or coaching make a greater difference in strong implementations of recommended approaches for those teachers who have not had earlier exposure to good reading instruction training?

Learning: Do struggling students gain more reading comprehension skills when they have learned with teachers who are supported by coaches or daily lesson materials

than workshops alone on recommended literacy approaches? Specifically, do students narrow reading skill gaps under all conditions, but gain more when their teachers add daily lessons or coaching to workshop preparations?

We also collected qualitative information from coaches and classroom observers in the study about the detailed classroom activities of participating teachers who stood out as particularly strong or weak in their use of each recommended literacy approach. Six observers were used in this research who have visited different schools in the study over the two-year period. The observers were trained together using common examples of different levels of implementation and shared discussions of field rating reports aimed at high consistency and reliability ratings. Each observer went to a different set of schools at each of the three visitation points, so that any possible individual rating tendencies are spread across all schools. All observers are gathered together at our university for feedback sessions three times each year after each visitation point. During these sessions, each observer is asked to describe in detail one of the strongest and one of the weakest teachers they saw in terms of using each of the recommended approaches with any explanations or interpretations they have for each case. From tape recordings of these discussions, we obtained qualitative information on the research question:

Implementation Challenges: What kinds of difficulties do teachers have when they are not implementing a recommended component well, and what reasons may be at work?

Challenges to Teachers of Instructional Approaches for Struggling Adolescent Readers

Each of the recommended approaches poses challenges for teachers to use them in their classes of struggling readers for most benefits. We learn about these challenges from our

ongoing research to study the implementation and impacts of the recommended literacy program that uses classroom observers to report on teacher behaviors.

To measure the quality of implementation, we sent trained observers into each participating teachers' classroom for a full period at the beginning, middle and end of the school year. These observers used a nine-point numeric scale with rubrics developed for this research to rate the quality of implementation whenever each of the recommended approaches was in use. (Rating scales are provided in the Appendix.) Table 1 shows how frequently teachers across all the conditions of our study were rated on the quality of their implementations in low, medium or high categories that combined the observers' numeric scores. The Table also shows the percent of times observers encountered each of the recommended approaches out of a grand total of 252 different observation points,[*] and the average rating for each on the nine-point scale.

Table 1 shows a wide distribution of levels of implementation for each recommended practice. Teacher Modeling—where teachers use Read-alouds to orally demonstrate the reading process—was observed more often than any other practice but had by far the most frequent low ratings. Student Team Discussions—where students in small groups talk together about a shared reading—was the next most frequent practice and had an average rating close to the midpoint scale value, with about the same frequencies in the low categories as in the high categories. Pre-reading vocabulary, which is one of the preparations for reading, was observed much less often and has the highest average quality rating with more frequent high ratings than low ones. Silent Reading—where students chose a book or an article to read—was seen the least amount of times, and has the most even distribution across the rating categories with more than half in the medium range.

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[*] Since each teacher is observed three times during the school year, some teachers may be rated on each practice more than once if they used it at multiple observation points. However, different observers were used for each teacher at each point, so up to three ratings from independent observations are possible for each teacher.

We can learn more about implementation challenges for teachers by focusing on the lowest rated ones with qualitative feedback from the observers that had seen teachers in all experimental conditions and from the coaches that had been used in one-third of the schools. We assembled the six observers in this research for group feedback interviews shortly after each observation point. There also were four local coaches for designated schools in year one of the study and seven other coaches for year two of the study, who were also brought together for group focused interviews at the beginning and midpoint of the school year. During the feedback sessions with coaches, we also included three project facilitators who worked with the coaches in their schools. In each feedback session, we asked each observer or coach to find an example of a teacher who struggled most with each recommended approach and to describe and interpret these difficulties, which were tape recorded to draw upon the following descriptions. Thus, we are focusing on the kinds of difficulties shown by a select subsample of the lowest-rated teachers in our study, to discuss why it is not a simple matter for them to use each of the recommended approaches. Since the cases discussed include teachers in conditions without any regular coaching and others in the early weeks of the school term, it is possible that many of these difficulties could be overcome with more training, support or experience. But, to appreciate the need for strong teacher support systems, it is important to understand how and why some teachers can struggle with implementation of each recommended approach.

Challenges with Teacher Modeling

We asked our observers and coaches in separate feedback sessions to focus on the teachers with poor implementations of Read Alouds, describing their challenges and difficulties. Our observers point out frequent low-rated cases where teachers practice the read-aloud without the think-aloud. These teachers may hold the attention of their class with oral readings using

appropriate voice inflections and gestures to demonstrate the theatric or rhythmic appeal of good writing, but without ever pausing to demonstrate the active thinking processes of a mature reader.

> Coach: Teachers are not taking the time to plan their read aloud ahead of time. They pick something out and then they figure, "I'll just read it." And so the strategies are not necessarily thought out first and it's something that they read aloud but there isn't a lot of thinking going on.
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> Observer: I did not see as many using this strategy as before. And the ones I did see, they didn't even pause, they would just read the whole passage.

Even when a teacher does pause for reflections, often a limited number of strategies are demonstrated over the entire reading. Teachers may find it easiest to further visualize settings or characters, by verbalizing a mental image with details drawn from their own experience. Teachers may also question students on their opinions about dramatic story developments but without using comprehension strategies or inferences. But many teachers have difficulties in going beyond visualization or eliciting student opinions to show a wider range of comprehension strategies that involve predicting, questioning, summarizing main ideas, noticing elements of the writer's craft and reading between the lines for understanding.

> Coach: Teachers seem to think that this is going to be an easy part of the lesson, I'm just going to read this to the kids and I will stop from time to time, but it is not.
>
> Observer: His read aloud was mainly about opinions. After reading he would have a little pause and then have a personal conversation with one student, then

> he would phase into another component, but again it was always about personal types of conversations.

The least observed and perhaps most difficult strategies to verbalize are the metacognitive processes of checking for understanding and deciding when particular corrective actions are needed. Students gain confidence in the complex reading process by realizing that confusion or uncertainty is often a regular part of reading and is often intended by the author in developing a narrative. Yet teachers may find it difficult or out of character to reveal their own appropriate confusion when reading. Instead of an authoritative role of expert with answers, a teacher needs to be ready to show it is sometimes acceptable to feel lost or uncertain, and the need to be patient as a writer draws out information.

> Coach: I as a teacher need to show where I even mess up, where I got confused the first time reading. You have to show your vulnerable side to these students. You have to show that you are not the know-it-all that they think you are. You make mistakes all the time and that is okay. I have teachers who say 'no I can't do that,' but you have to, you are bringing them to that level and they can buy into what you are talking about.

> Coach: They (the students) don't understand what good readers do. Kids think the answer is something you can just get – like you can pull something out of the fridge, you can just get it, and if I am not getting it – it is just me, I just can't, I am not smart enough.

On the other hand, a reader's confusion may require corrective action such as re-reading sections where attention may have wandered or reading at a slower or faster pace to meet the

complexity of the narrative structure or rhythm of the presentation. But observers did not often see teachers modeling when to check for understanding and how to plan fixes.

The best teacher modeling also helps students learn by name specific comprehension strategies that they can use later with other reading materials. Accordingly, teachers should often label each strategy that they model, so students see that the learning goal goes beyond a particular reading selection, deriving some general thinking skills to use later. Teachers can label strategies as visualizing, predicting, inferring, questioning, or checking for understanding, as appropriate. Classroom posters with named strategies can be referenced to reinforce learning across different read-aloud demonstrations. But observers almost never saw low-rated teachers name the strategies they modeled.

It is also a good idea to include students in modeling comprehension strategies, by asking them their predictions or inferences at key points during class demonstrations to contrast reader differences. Students may also conduct a read-aloud/think-aloud demonstration during individual conferences to assess needs and progress as a reader. Observers reported most student inputs were personal opinions about reading topics rather than demonstrations of reading strategies and comprehension reasoning.

> Observer: Again, at least they did pause, but they stay right in that medium level, even if they did say, I'm going to make a prediction here, they didn't really get the students involved in "why don't you make a prediction here" or let's talk about that prediction. It is just quickly done. If they get one response, that is it.

Challenges with Student Discussions

Observers noted many challenges to teachers using student team discussions. Teachers can't assume all students have actually read the shared material. Left on their own, students may

not be good group members. Everyone needs to participate fully instead of one or two taking charge and disagreements should be handled with civility and mutual respect.

> Coach: I am working with teachers who don't understand what discussion really is supposed to look like.
>
> Observer: In this class, some discussion groups would have one or two students dominating with the others withdrawn. And the teacher did not intervene to get all involved.

Student discussions may stay at a superficial level where individuals express only their own opinions with little reference to the text or where plot and character development are never considered. At this level, students may enjoy talking about a reading selection and relating their own views or experiences that the selection inspires, without learning from one another about comprehension strategies or elements of the writer's craft. Sometimes students approach discussion questions as writing assignments to get through quickly.

> Coach: For the teachers I work with they need to understand what it means for the kids to have a discussion. They think that if they put questions down on a piece of paper and give them to the students and say 'discuss this' then they are going to discuss it. They need to understand what is discussion and how can you generate it.
>
> Coach: I see very brief answers, stuff from the top of your head, and then let's go on to the next one.
>
> Coach: Everything is about time for these kids. Let's see who is the first to finish. The teacher needs to dismiss that whole thing of being smarter if you finish early.

Observers and coaches in our study express frustrations with student team discussions especially with new or inexperienced teachers. Some novice teachers without good classroom management skills are reluctant to try student group discussions without confidence in orderly methods for moving into group formations or for controlling student behavior.

> Observer: This teacher was only using the discussion questions with the entire class, because she told me her students this year were not ready for teams.
>
> Observer: I rarely see student group discussions in conditions with a teacher who had not been given the Partner Discussion Guides with questions for the students, and would have to prepare the questions themselves.

Challenges with Pre-reading Preparations

For each new reading assignment, teachers should identify new words students will encounter and help them anticipate their meanings. Observers report, however, that low-rated teachers often spend too much time on a few isolated words or teach vocabulary poorly. Our project recommends using a short list of new words, having students correctly pronounce each new word, and then using it in a meaningful sentence after its definition has been determined by guessing its meaning from its roots or from students' previous experience, or by dictionary references. The word is then embedded in a complex sentence with modifying words or phrases so it cannot be easily replaced by an unrelated word. However, observers and coaches report that teachers often spend too much time on a few new words out of context with practice activities that are juvenile. Rather than a crisp 5 or 10 minutes with recommended practices on selected new vocabulary, low-rated teachers often will devote 30 minutes or more to a few unconnected

words with dictionary drills or puzzles and word games that do not get at word families or contextual word use.

> Coach: The teacher should put some words up on the board and see do they know them and go through them, but you don't have to spend 30 to 35 minutes. I have seen them done well in less than five minutes.

In contrast to vocabulary lessons, preparing students with background connections to upcoming reading is a recommended activity that observers did not see very often with low-rated teachers. Teachers can provide various background knowledge to help students read a new selection with interest and understanding. Essential facts can be offered about the historical, cultural and geographic context of the selection. Relevant maps and illustrations can help students visualize the locations and identify with the conditions of key characters so that a reading selection will make sense to them. It is also useful to let students know and discuss beforehand the literary genre of the selection, key characteristics of the author, and the critical importance of the work.

> Observer: Out of the eight classes I saw this time with partner reading, I only saw two times where the teacher takes a few minutes to get students ready. No warm-ups or activating of prior knowledge, but get right into it. Some may be in the middle of stories, but still nothing to reconnect students with things to pull them in.

Activating each student's prior experiences and knowledge related to the new reading is another part of background knowledge, especially how a student's personal goals and interests may be fulfilled by the reading. But our observers and coaches do not often see low-rated teachers probing to help a student see what he or she already knows about the topic or might enjoy learning more about.

Challenges with Selected Silent Reading

To capitalize on the benefits of increased reading practice, we recommend that the regular English course periods include time for students to read silently from materials they choose. We sometimes provide classroom libraries of at least 100 books on many topics of high interest to adolescent males or females, including magazines and some books on tape with the hard copy available. We arrange these libraries so that students can find selections that match both their interests and reading level. Sometimes, two or more students can pick the same book and form a mini "book club" to discuss the book as they progress through it. We also provide feedback mechanisms for students to record their reactions and provide information for other prospective readers. These logs or reports also serve an accountability purpose, for teachers to monitor and evaluate students' attention to the self-selected reading. Some teachers require a student to "test out" after self-selected reading by correctly answering questions about the particular book, or to be required to re-read for better understanding. But some teachers have difficulties fitting it in their classes.

> Coach: It's not used much at this school. And it's always, "we don't have the time, we have so much to cover, we have to get this in, we have to get ready for end-of-course tests." It's one of the most frustrating things, because I love to read and I can't believe that they don't want to spend the time getting the kids involved with reading.

Our observers described examples of self-selected reading not used well to increase students' abilities. Rather than a serious part of a daily lesson, it sometimes became a device for a low-rated teacher to keep students busy when they finished assignments or to fill empty class time at the end of some days. In these cases teachers would direct students to pick something from the classroom library for the time left in the period, with no motivational build-up to

reading for pleasure, no continuity with previous reading periods, no feedback or accountability requirements, and not enough time for a real reading experience.

> Observer: I don't think I saw too much. They finished up their lessons, and whatever time was left in class they did silent reading, whether it was five minutes, eight minutes, or twelve minutes. It was kind of like we will finish out the class with reading.
>
> Observer: Sometimes I wasn't sure whether or not they were really reading. I didn't see pages turning the way you would normally see if you are reading a book. I don't know if they are just passing the time away or whether they are really reading the story.

In addition to the libraries, we recommend that teachers also set up other learning stations for a few students to use during the same time. One station can be an Internet terminal with assignments for retrieving research information or downloading reading materials in preparation for a student report. Another station may be word games to build vocabulary or sentence skills. These stations present alternative literacy learning opportunities that students can sometimes substitute for self-selected reading. But low-rated teachers had not taken the time to create updated stations.

> Observer: I never see it when the teacher was not given already-prepared stations, such as when the coach did it for them. There is a time element in preparing for it.
>
> Observer: Small classrooms with students wall-to-wall is a real limitation for stations. Really don't have space for it. At best, stations can have folders with work sheets that students pick to work with at their desks, rather than real projects or group work.

On the other hand, observers saw self-selected reading activities and learning stations being implemented well often enough to keep it as a recommended classroom practice in adolescent literacy programs. In these cases, teachers established a regular time of sufficient duration where students can retrieve their selected book and read enough to feel a real sense of accomplishment. The classroom libraries and other learning stations were so attractive that teachers offered the time with them as a special reward and students looked forward to personally choosing reading activities. The feedback and accountability features were enough to keep students responsible without intruding on student initiative.

A corollary benefit of class time for self-selected reading is the chance for teachers to work with individual students while the rest of the class is busy reading. These can be sessions where each student gets a chance to conference individually with the teacher about his or her reading experiences and where teachers can assess individual student needs after observing some oral reading or discussing reading issues. These can also be opportunities for teachers to pull aside individual students or small groups of students for intensive tutoring on particular skills, including any decoding or word attack skills that may still be missing.

Yet, observers also report almost never seeing teachers across the rating categories using this time for individual conferences or tutoring sessions. Teachers either do not perceive this chance to work individually with students while the rest of the class is busy reading or cannot do so in their room without disturbing others.

> Observer: In all my visits, I only saw it one time when a special education student was pulled aside for oral reading work. Otherwise, I did not see it.

Observer: Conferences only happened when there was a school reading specialist or an extra special education teacher in the room. I have not seen the regular teacher in student conferences when the rest of the class is busy with other work.

Three Ways of Supporting Teachers

Knowing that many teachers will be challenged to implement each recommended practice at high levels, we developed three different ways to support teachers for strong implementations: Workshops, lesson materials, and expert coaches. These are the three experimental conditions we compare in our quantitative evaluations to be discussed later. We also asked our observers and coaches in feedback interviews to report how teachers might fail to fully benefit or even abuse each type of support system. We next describe each way of supporting teachers in terms of its rationale, with qualitative observations on possible advantages and disadvantages.

Workshops

When most districts or schools to introduce new instructional approaches, they will usually offer professional development workshops to the teachers involved. Workshops usually accompany the introduction of new textbooks, new instructional policies, or new assessments. Often, workshops are the only form of teacher support for new instructional approaches, and they may last only a few hours or they may extend for several days throughout the year. Thus, professional development workshops are a standard system of teacher support, but can vary widely in content and duration.

We used two types of workshops to help prepare teachers for adolescent literacy instruction. One supported teachers who would not be receiving daily lesson materials for the recommended approaches, showing them how to prepare their own lessons to implement the

recommended practices. The second assumed that teachers would be receiving daily lesson materials, providing guidance on how to use these materials to increase reading skills while avoiding the usual ways materials can be misused. In each case, the workshops were conducted by University reading specialists for two full days at the beginning of the school year and two full days at mid-year, during regularly scheduled work days or with daily stipends during extra time.

Both workshops devote some time to general techniques of classroom management and bulletin board displays that can help recommended instructional practices work well. Classroom management techniques to assist student discussion groups include methods for assigning students to teams, routines for moving from individual to group activities, and social skills training for successful groups such as sharing time, respecting differences and staying on topic. Visual displays on classroom walls include lists of comprehension strategies, pie-charts of class time for recommended activities, and T-charts for social skills to see and hear in successful discussion groups.

Both types of workshops cover the same four recommended approaches discussed above. The rationale for each approach is covered in terms of learning theory and student motivation. Demonstrations of best practice are provided using video examples of actual classrooms or live performances where workshop participants played the roles of students.

But the workshops for teachers who will need to write their own lesson materials provide time for participants to develop sample lessons for each approach, using a template indicating the kinds of materials needed for each lesson. For example, teachers would learn how to write a lesson using student team discussions with preparations for shared reading. They would learn how to identify new vocabulary in the selected reading and help students use the new words in

meaningful sentences. They would learn how to motivate students with background knowledge on story context and author reputation. They would learn how to write suggested discussion questions at different levels of understanding.

On the other hand, workshops for teachers who are given daily lesson materials time to learn how to implement them well. For example, teachers in this workshop would have detailed materials for using student team discussions, including teacher manuals on each reading selection that identify new vocabulary and background information to prepare students, as well as Partner Discussion Guides for students with suggested questions. Teachers would learn how to have students practice new words in meaningful sentences, how to read the selection independently and in pairs before discussions, and how to assume different team roles when discussing comprehension questions and reporting out results to the whole class.

The workshop goals in both instances are to train teachers in the four recommended instructional approaches so that they understand their value for closing literacy gaps, are ready to implement them as primary classroom approaches, and are comfortable in bringing their own style and expertise to enhance the recommended approaches for best results with their students.

The limited time available for workshops is a major challenge for teachers becoming competent and committed to the five recommended instructional approaches. With only two full days before the start of instruction to master several approaches, the workshops must be efficient in presenting the research rationale and practical operations of each component while still allowing time for the teacher input, discussions and practice needed to become comfortable with their use. Some teachers will have an advantage if they are already familiar with one or more of the recommended approaches. But all will be hard pressed to concentrate on mastering this set of approaches if there is any doubt about their principal’s or district’s priority to implement them

well, or if workshop time is diverted to other issues or topics. Our workshop leaders and project observers noted the importance of the school leadership's backing of the recommended approaches to encourage teachers to get the best from the workshops.

Of course, professional development for the recommended literacy instruction practices should not stop with the workshops, but continue throughout the year with teachers meeting regularly to share problems and solutions with the new approaches. In this way, teachers reinforce one another to stick with the program and provide mutual support with implementation insights and suggestions. Although we urged teachers to work together between workshops on the recommended approaches, our observers did not often see this develop if there was no regular literacy coach at the school.

Lesson Materials

In addition to professional development workshops, some teachers in our project are provided written daily lesson materials. Most of these materials are built around a specific reading selection, such as a novel, short story or poetry collection, play or non-fiction text. A teacher's manual will accompany each selection, with rich background information on story context and author to motivate students, followed by two- or three-day lessons on short segments of the selection such as a single chapter, short story or poem that students will read individually and together in pairs. Each lesson (1) identifies new vocabulary and their use in meaningful sentences; (2) highlights relevant literary topics such as the genre or elements of the writer's craft, to be covered in a preceding mini-lesson or referenced in a suggested read-aloud passage with parallel highlights for teacher modeling; (3) provides suggested questions for student discussions at different levels of recall, comprehension and interpretation; and (4) outlines

follow-up enrichment activities such as student projects or writing assignments derived from the selection.

Accompanying the teacher's manual for each reading selection is a class set of Partner Discussion Guides (PDG) for each student. Each PDG parallels the teacher's manual by identifying a subsection for paired reading, listing new vocabulary, highlighting relevant literacy topics, and providing discussion questions for student teams. The questions in the PDG are to guide student discussions for appreciation of plot and character development, use of inferences to predict or explain story events or motivations, and comparison of different interpretations from different readers. PDG questions can often be used for student evaluations when teachers collect student-written responses to one or more questions following the team discussions. Students then can be motivated by both learning and performance goals, to appreciate good literature and the comprehension strategies involved, as well as to prepare examination answers for a good grade.

We have developed more than 100 teachers' manuals with accompanying PDGs for books we recommend with struggling adolescent readers as well as for standard selections from the high school English syllabus of many school districts. In our research project, different books are used for the first and second terms of the ninth grade. For the first term, we use our recommended books for struggling readers. These are selected both for high-interest to most teenagers as well as for low-frustration in terms of a reading level just above each student's current position. For the second term, we use the district's own recommended books from the standard English syllabus, but we vary the number of selections covered so that the reading pace and supporting lessons can be adjusted to students' actual reading levels. Even so, we sometimes have not yet developed the manuals and PDGs for some districts' selections, so teachers are trained how to write their own.

One challenge for teachers using the lesson materials is to divide each day's extended period into appropriate segments that are related in a coherent whole. We recommend that a typical 90-minute period use about 20 minutes for teacher modeling, 20 minutes for mini-lessons or preparations for reading with vocabulary or background coverage, 30 minutes for student team shared reading and discussions, and 20 minutes for self-selected silent reading or teacher-student conferences. This sequence will vary according to the length of a reading section and teacher's judgment for class needs. As noted above, observers and coaches often see distortions of schedules when too much time and attention is given to lower-level skills, such as vocabulary drills, and when teachers stop the recommended approaches for test preparation activities. Also, teachers often have difficulty transitioning between these components. For example one observer noted:

> I don't know if they are taking the training and the actual pie (number of allocated minutes) of the strategic reading so seriously, but there were a couple of times teachers transitioned so quickly that they really didn't finish up at a good place. Several times they literally stopped in the middle of something to transition to something else and I thought it would have been a much better use of time to finish that piece. Some of the transitions are real choppy and don't blend in.

The other serious challenge for teachers is to avoid using PDGs as "workbooks" for students to quickly finish answers about the selection for a grade, rather than as extended discussion questions to stimulate students' thinking skills and comprehension strategies that will continue to be useful with later readings. Observers sometimes see the PDGs degenerate into superficial seat work when as soon as students receive the suggested questions, they begin to

individually write their answers, even if teachers are still presenting motivational information and before the student team discussions have begun.

> Observer: The effort tended to be getting on paper the answers to the questions. It was not a discussion. The only discussion was, "what are you going to write down for that answer?" They are writing as they are talking.

Coaching

In addition to workshops and lesson materials, some teachers in our project will also receive regular assistance from a coach who is an expert in the recommended instructional approaches. Coaching is now being recommended to assist high school reform (Guinney, 2001; Russo, 2004), as well as to assist teachers in their classrooms with instructional improvements (Neufeld & Roper, 2003; Sturtevant, 2002). While there are some practical guides for preparing and utilizing literacy coaches (Brown, et al. 2006; International Reading Association, 2004), most research on impacts covers only pre-service or elementary grade teachers (Hasbrouck, 1997; Kohler, et al. 2001), or examines changes in instructional practice after coaching in seminars (Showers & Joyce, 1996) or when coaching is one part of an extensive upper-grades reading initiative, but there have been no studies of coaching and student learning gains (Sturtevant, 2002).

In our project, a coach will visit each teacher's classrooms at least once per week and find time to have a collegial discussion about how to effectively implement each recommended approach for their own students. Sometimes, a coach will model-teach or co-teach a lesson to help the teacher try a particular approach or to show how the implementation might be improved. The collegial discussions are usually two-way conversations between professional peers, where the coach and teacher share ideas about how each recommended approach can be tailored for

greatest positive impact on a given classroom of students. We expect just the presence of an expert coach will pressure a teacher to use the recommended approaches because the teacher knows what the coach is looking for when visiting the classroom. The coach can also improve the quality of each approach by offering assistance to build teacher skills or overcome classroom obstacles for excellent implementations.

We help a school district to carefully recruit and select good coaches, and we provide extensive training and continuing support to them. Coaches must be literacy specialists who will gain the teachers' respect as experts in the recommended practices. Coaches also need to be good at working with other teachers as colleagues and to be trusted to always keep confidential all aspects of their observations and interactions with teachers so that evaluations and promotions will never be threatened. Coaches also need the energy and commitments to the recommended approaches to be able to persist in urging their use and adapting them to fit each situation.

Things can go wrong if a district seeks to fill coaching positions by convenience, such as simply designating staffers without current assignments who need their salaries covered or otherwise yielding to political concerns. The position should also be full-time, so that the coach has flexible time to meet with teachers according to their individual schedules, and without other responsibilities to distract from the main goals of coaching.

We work with each district to recruit coaches from promising candidate pools, such as recently retired English teachers or current literacy staff who would be open to mastering and fostering the recommended approaches. We also interview all of the finalists before a district decision is made. We have strong leverage with the district during our study, because we pay the coaches' salaries and training.

Because high quality of the literacy coaching is a paramount intention, we provide extensive training and ongoing support to each coach. We begin with a three-day institute at our University for all of the new coaches in our project, which is usually a group of four to eight each year. The institute is directed by a team of five literacy specialists from our staff, including three persons who will serve as ongoing Facilitators with each coach throughout the school year. The institute devotes time to each of the recommended approaches. After reviewing the research and practical rationale for each approach in an interactive discussion, classroom implementations are demonstrated, practiced and critiqued. Our staff will model a classroom implementation with the institute participants assuming the roles of students. In addition, video tapes of actual classrooms using the approach at different levels of effectiveness are viewed and critiqued. Then, each coach gets the chance to model-teach recommended approaches with follow-up discussions on the challenges to be met for optimum implementations.

The training also concerns the collegial role of the coach, gaining the respect and trust of teachers to be effective. The principles of ensured confidentiality and shared professionalism are discussed, along with recently published coaching standards and guidelines. The trainees also consider case studies of teachers with different needs and attitudes for coaching assistance are also considered, for insights into effective coaching.

To follow up the initial training, the project provides an on-site facilitator for each coach and we schedule two other coaching institutes at the university later in the year.

The facilitators are experienced university staff members who know the recommended approaches in-depth and have previously served as coaches. A facilitator visits each coach at the schools early in the first term and at later intervals of two or three months. During these visits, the facilitator accompanies the coach into individual teacher's classrooms to observe the coach's

operations. The facilitator can alert the coach to a variety of techniques that will foster strong teacher implementations of each approach.

We bring all of the coaches and facilitators together again at the university at mid-term and on one additional occasion to share experiences and refresh training on the finer details of each recommended approach. These follow-up coaches' institutes reinforce the spirit of effective coaching goals and refine the skills and techniques to provide coaching assistance for different teacher needs.

Most practical problems with effective coaching derive from the school and district leadership expectations and the preparations of teachers for participation in a literacy project. When school principals and district literacy authorities are deeply involved in decisions to join this project, the participating teachers feel some obligation to take it seriously and give the recommended approaches a real try. Otherwise, some teachers may view new approaches as extra burdens on their time and energies or as intrusions on the traditional approaches they believe in. Even worse, districts may issue competing directives on instructional priorities or test-preparation activities that put the teachers under cross pressures to follow project encouragements or to adhere to official expectations on other directions. We are careful that local leadership is significantly involved in the decisions to adopt the recommended approaches, and that arrangements are made to incorporate district needs for test preparation and required content into the regular instructional schedule.

Teachers also need to be willing participants at the outset in the recommended approaches, to have time to prepare new materials and to understand the supportive roles of coaches whom they make work with. Otherwise, teachers may resent the expectations of participating in the project and lack the ownership and personal commitments to make it work in

their classrooms. We usually find that teachers with struggling readers are looking for effective approaches and are receptive to our recommendations when informed they are aimed at their students and based on research on best practices. We also make sure than an orientation with all the new books and lessons is provided at the close of the school year before the new approaches are to be introduced in the fall. We offer two-day workshops for all the participating teachers with stipends just before the start of the new year, as described above. These activities are to earn the commitments of the participating teachers and to equip them for using the recommended approaches.

Evaluation Results

Besides providing descriptive information on the challenges that teachers face in implementing the recommended instructional practices and in using supports from workshops, lesson materials or coaches, a primary goal of our study is to statistically evaluate the different ways of supporting teachers for implementation quality and impact on student learning. A randomized cluster design is used with several implementation and student achievement measures. The study has completed two years of data collection from separate cohorts of schools, with a third year yet to come to increase the final sample size above 60 high schools for desired statistical power to uncover even modest effects. As we will show, the current sample of 41 schools has produced large enough differences for statistical significance and meaningful interpretations. Future reports using the completed sample may alter results, but more likely in strength than direction.

The evaluations are derived from a research design that randomly assigns schools across three experimental conditions: Workshops only (Condition 1), Lesson Materials added to workshops (Condition 2), and Coaches added to workshops and materials (Condition 3). The workshops, lesson materials, and coaches are provided as described in the previous section. We randomized schools across the three conditions within each participating district using two strata by poverty level within the largest districts to ensure a fair representation of all types in each condition. Each school contains at least two ninth-grade English teachers with students at least two years below grade level. The participating teachers are intended to be typical of the English faculty of each school, comprising a representative mix of novice and veteran teachers. We will use the natural variations among teachers to examine possible interactions of teachers' previous training with experimental conditions. The current data was collected over two years from 41 high schools in 17 districts and includes 84 ninth-grade teachers and 1,996 students. Table 2 shows the sample size in each experimental condition.

Implementation Results

Experimental comparisons of the three teacher support conditions (workshops, lesson materials, coaching) resulted in the following findings:

Coaching consistently and significantly contributed to stronger classroom implementations of the recommended instructional practices for struggling adolescent readers. Often both the amount of time and quality of a recommended practice increased with coaching. When time was nearly equal across conditions for a particular recommended component, the quality was always highest with coaching. Even traditional instructional practices, such as lectures and seat work, though less frequent with coaching were of highest quality under this condition.

Lesson materials appear to strengthen implementations more than workshops alone only for student team discussions of shared materials with good teacher preparations, where our lesson materials are most extensive. We will discuss how future development work on lessons for other components may enhance their value.

Teachers' prior preparations for reading instruction interact with support condition effects, where the least well-prepared teachers benefit most from coaches to produce strong implementations.

Recommended and Traditional Instruction

Figure 1 shows how recommended practices change according to whether the high school receives Workshops only (Condition 1), Lesson Materials in addition to Workshops (Condition 2) or Coaching in addition to Workshops and Materials (Condition 3). Reports are tabulated from classroom observers, teacher surveys, or student surveys. The recommended practices averaged for Figure 1 include combined measures of teacher modeling (read alouds), student team discussions of shared reading with vocabulary and background preparations, and self-selected reading. (See Appendix for the complete scales).

In Figure 1, observers, teachers and students report a regular upward trend across the three experimental conditions in whether each of the recommended practices is used at all, with most use reported in schools with coaching, somewhat less in schools with materials, and least in schools with only workshops. The Observers report (Figure 1A) shows the average count of recommended practices used (range 0 to 4). The Teachers report (Figure 1B) and Students report (Figure 1C) are the frequency on a five-point measure with which three recommended practices are used (range 3 to 15).

We applied statistical tests to examine linear trends across the three conditions for observer ratings and teacher and student results. We are using statistical trend analyses where the F test statistic values will depend upon both the group means and the particular linear ordering of those means (Howell, 1992, Chapter 12.11). The upward linear trends are statistically significant from each source at the .01 chance of error or less. Moreover, when the amount of class time involved in recommended practices and the quality of implementation is added from Observers reports, the benefits of coaching appear even larger. On average, an additional ten minutes per day in class time for recommended practices is reported by Observers for schools with Coaching (Figure 1D) and the quality with which the recommended practices increase by one point on a nine-point observer scale when coaching is provided (Figure 1E).

It would be expected that traditional practices, that include teacher lectures to the whole class or individual seat work with drill sheets for the majority of class time, would decline in exchange for increases in the recommended practices. Indeed, Figure 2 shows opposite trends across the experimental conditions for traditional practices compared to the results in Figure 1 for the recommended approaches, but with one surprising exception relating to the quality rating of the traditional practices. The measurement scales are similar to Figure 1, except now the teacher and student report the frequency of two traditional practices (scale range 2 to 10).

A declining trend across the experimental conditions for traditional practices can be seen in Teacher reports (Figure 2B) and Student reports (Figure 2C) and in Observers reports (Figure 2D). The uses of traditional practices are reported least often with coaching, and less often with materials than with workshops only. The surprise occurs with the observers' ratings of the quality of their use, which shows <u>improvements</u> in quality across the experimental conditions in the opposite direction to frequency of use. So, even though coaching decreases the average

amount of time used for traditional instructional practices, the quality of the traditional instruction is highest when it is used with coaching. It seems that the coaches' emphases on student thinking skills and comprehension strategies for reading also carries over to higher order instruction when teachers are lecturing to the class or assigning seat work under traditional practices.

Components of Recommended Practices

A closer look at the separate recommended practices will help us better understand how the different ways of supporting teachers actually work. We can disaggregate the measures from classroom observers to examine how the experimental conditions influence the use, duration and quality of each recommended practice. Table 3 breaks down the average observer reports across experimental conditions for three individual recommended practices: Teacher Modeling, Student Team Literature (STL), and Self-Selected Reading (SSR).

While the total score across components shown at the bottom of Table 3 follows the consistent upward trend across experimental conditions for use, duration and quality of recommended practices, each component practice shows a different pattern.

Student Team Literature (STL) is the only separate component with a consistent upward trend across the conditions for observers' average measures of use, time duration, and quality of implementation. While coaching always is the strongest support for STL, it also appears that Lesson Materials provides better support than Workshops alone. This should not be surprising, because our project provided the richest and most extensive Lesson Materials for STL, with teacher manuals and Partner Discussion Guides for each of the reading selections used with

students. While no substitute for coaching, Lesson Materials when added to Workshops provide a real boost for teachers to use STL approaches more frequently and with greater quality.

Table 3 does not show the same consistent trends for Teacher Modeling or for Self-Selected Reading. Coaching still stands out for Teacher Modeling, with Condition 3 significantly higher for use, duration and quality of this component. But Lessons (Condition 2) do not offer any advantage over Workshops alone (Condition 1) for Teacher Modeling and there are no statistical differences among experimental conditions for sustained Self-Selected Silent Reading, although there is a slight trend in the expected direction for the quality of use of this component. At the end of this paper, we will discuss ways that lesson materials might be improved for these components so that they can be a positive addition to workshops for better implementation.

Interactions with Teacher Background

We are beginning to investigate how supports may matter in different ways depending upon each teacher's previous training and experience. Figure 3 shows how coaching has its strongest impact on the quality of implementation of Student Team Literature for the group of teachers who did not have previous reading instruction training.

For these analyses, teachers were divided into two groups on the basis of their responses to a question before any of our workshops or other supports began: "How much previous preparation have you received on teaching reading to high school students, including various specific reading comprehension strategies and self-monitoring approaches?" On a ten-point scale, teachers who rated their training 1–5 points were in one group, and teachers with higher ratings were in the second group.[*]

[*] To guard against a social-desirability response bias, the grouping question followed another for a point of comparison. Teachers were first asked a more general question about these preparations: "How much previous preparation have you received on teaching English to high school students, with emphasis on appreciation of

Figure 3 shows that coaching made a much greater difference in quality implementations than workshops or lesson materials for teachers with less prior reading training. Indeed, this group is below the teachers with more previous training in the Workshop-only schools (Condition 1) and gains, but stays behind, when Lesson Materials are added (Condition 2). But, this group surges ahead and exceeds the other group when their school provides expert coaching for the quality implementation of STL.

Achievement Gains

We are also finding consistent student achievement gains for students in schools with coaches, especially for the reading comprehension subscores of the Gates-MacGinitie tests. Figure 4 shows the reading comprehension gains from the beginning to end of the first term across the three experimental conditions. Each condition showed positive average student advances in NCE gains, but Condition 2 gained more than twice as much as Workshop alone (Condition 1) and schools with Coaches (Condition 3) produced about three times the gains as Condition 1. The results of achievement gains at the end of the second term continue to significantly favor Condition 3 overall, yet with no continuing advantage of Condition 2 over Condition 1. This reflects that we provided more materials for STL in the first term, supporting teachers with the new project than in the second term where we offered only limited materials to support the district's designated novels and plays.

Schools with coaching produce an average NCE gain of 3 after the first term. This grows to an average NCE gain close to 5 after the second term. Schools with Workshops also produce gains over both terms, but less than schools with coaching, showing average first-term NCE gain of more than 1 and more than 3 by the end of the second term. Achievement growth from

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literature and writing for different goals?" Average teacher self-ratings were lower for the question about reading training than general training.

schools with lesson materials, however, occurs only in the first term with NCE gains of less than 3. These remain about the same at the end of the second term. Thus, we again observe the overall benefits of coaching, and detect the potential benefits of lessons when added to workshops, but only during the first term when we provide the most extensive and detailed daily lesson materials.

Implementation Challenges and Classroom Goals

We see a recurring theme in the tension of teachers and students over primary classroom goals. Is the main purpose learning with teachers and students oriented toward developing the general thinking skills and comprehension strategies of a good reader, or performing, such as finishing a specific assignment to be turned in for a grade or to be found on a test (Ames & Archer, 1988; Daron, et al., 2006)?

When learning goals predominate in reading instruction, classroom activities are seen as an investment of time for exercising the mind and practicing comprehension strategies in the complex processes of reading for understanding. Learning the details of a particular story becomes only part of the reading experience that leads to appreciating good writing, considering different interpretations and taking intrinsic satisfaction in reading for pleasure or information. In this mode, the main goal is to gradually develop mature readers who can handle diverse materials with ease and for understanding.

When performance goals are paramount, classroom activities are viewed as specific assignments to be covered from a required curriculum that leads to a grade. In this mode, reading teachers may emphasize the recall of specific information, such as story facts, rules of grammar and sentence structure or use of figurative language that are easier to evaluate than inferences or interpretations drawn from thoughtful reading. With performance goals in mind, students will be

interested in learning only what they will be tested on and in getting through their routine assignments as quickly as possible. The weakest teachers who are just looking for ways to keep students occupied and fill up the time of extended periods are most likely to assign and drag out performance tasks that do not require much deep or critical thinking.

When teachers fell down in our ratings of implementing recommended literacy practices or using available support systems, we could usually see an imbalance of learning and performance goals. Read alouds from teachers were weakest when they were entertaining students with lively demonstrations and quick opinions to pass the time rather than interspersing thoughtful questions and interpretations to probe good writing. Pre-reading preparations were most successful when teachers understood the importance of background knowledge and took pains to help student personally connect with each story or author and to learn new vocabulary in a rich context. Other teachers who were only following a syllabus of reading assignments would not take the time to motivate students by setting a rich context for the selection and preparing new vocabulary in an efficient and interesting way.

When this imbalance was most evident, we would recommend student team discussions. Good discussions address questions at all levels, from simple recall to complex inference, that consider how a good author may develop characters and plot and use various literary devices to engage the reader and invite interpretations. Such good discussions will take significant time so that different members can share and compare their insights, reveal their comprehension strategies, and reflect on the writer's craft. But when learning goals to think deeply about the work recede and performance goals to finish an assignment loom large, student discussions can be superficial exchanges of opinions not tied to story details or recall of story events and without inferences about character motives or relationships. We even observed the degradation of our

prepared discussion questions for deeper understanding into workbook activities with rapid answers, when students only wanted to finish a classroom task rather than appreciate the learning possibilities of extended discussions.

Selected silent reading is another recommended literacy component when the balance between learning and performance is a problem. Strictly aiming students toward selections at their own reading level or requiring exacting tests of recall after reading may intrude on the appeal and spontaneity of sustained silent reading. This component should give students a welcome opportunity to select and read something of high interest to them for the pleasure of the reading experience, which may be subverted with too much teacher direction or evaluation. At the same time, some accountability requirements may often be needed so that all students approach the activity seriously and exert the energy needed to read carefully and finish their selection. The best implementation of this component should keep students aware of building fluency while enjoying reading and provide just enough accountability to keep them honest and attentive to the task.

It is useful for reading teachers and coaches to understand the distinction between learning goals and performance goals and how to maintain a proper balance when implementing each of the recommended instructional approaches. This understanding can help meet the challenges and overcome serious implementation difficulties with our promising classroom practices to assist the struggling adolescent readers.

Study Limitations and Further Research and Development

The third cohort of data that had not been collected for this paper will be added to complete this study with added statistical power to further test our research questions in subsequent reports. However, the current sample size was sufficient for the statistically

significant findings reported here, and the final results are other limitations to be noted from the study design and measures, and remaining questions for further research and development.

Limitations:

How far the findings from this research can be generalized to other literacy programs for struggling adolescent readers is conditioned by how closely our recommended practices and teacher support systems are matched to other present and future approaches with the same goals. While our specific instructional recommendations may cover the core components expected to be represented in most adolescent literacy programs in part or as a whole, our dual roles in this research as program developers and support system sources is an unusual situation. Would coaches in other circumstances hired and primarily trained by their districts be as well prepared and committed as the carefully selected local coaches we hired and trained for this research? Would other district workshops and curriculum materials for adolescent literacy teachers be as focused and complete as these components we designed for this research to tie closely with our programmatic recommendations, even though our own workshops and materials are available for outside purchase? Thus, while we aimed at providing high quality and consistent teacher support systems for scientific comparisons in this research, there certainly can be no assurance that the same components will be as good in design or practice when school systems conduct their own literacy programs for struggling adolescent readers.

More detailed information from the teachers themselves in this research would help to cement the findings about implementation challenges and interactions with teacher characteristics. We relied upon focus group feedback from observers and coaches to highlight and interpret the exhibited implementation difficulties by the least successful teachers in the

study, when direct interviews with selected teachers across the implementation spectrum may have revealed more about specific implementation challenges and how they might be addressed.

We had limited measures of teacher input differences that condition teachers' need for extra support such as coaching and their positive response to it. Our single item indicators of teachers' prior preparation for reading instruction is open to subjective bias, in contrast to obtaining a more complete profile of teachers' earlier training, knowledge, and experience with specific reading instruction approaches for struggling students. In addition, we have not yet considered teacher differences in general classroom management skills as an important input factor for successful implementation of the recommended literacy approaches or as an additional item for teacher support systems. Thus, our conclusion that the need and effectiveness of coaching is stronger for teachers without good prior preparations in reading instruction needs to be replicated with more complete measures of the teacher inputs that may be strong conditioning factors.

Further Research:

There are also a series of issues for further research on the practical decisions of improving and allocating resources to support teachers in the most cost-efficient ways both at the beginning of an adolescent literacy program and when the program continues with the same and some different teachers.

Education decision-makers need to face the cost effectiveness issue of important reforms such as interventions for struggling readers. Our project included some of the potentially most expensive changes, including increasing instructional time for reading and adding expert coaching personnel. The cost of coaching can reach $18,000 for each teacher served, if a full-time coach's salary and benefits is $90,000 and the coach visits five teachers for one day each

week as in our study. If the teacher caseload is doubled so that a full-time coach visits 10 teachers each week or a half-time coach visits five, the cost is about $9,000 for each teacher served. In comparison, classroom sets of four new high-interest low-frustration novels or short story collections plus the accompanying teacher manuals and Partner Discussion Guides costs about $4,500 per teacher, which is between one-half and one-quarter the cost estimate for coaching assistance per teacher. Classroom libraries of 50 books can be an added cost of $500 or more. But these materials will last for multiple years, or may be drawn from existing book funds and not represent an added cost. Even less costly are workshops where $100 daily stipends for each teacher for four days amounts to $400 per teacher, with perhaps another $50 as the share for speaker fees for a total of $450 per teacher, which is about one-tenth of the cost for new materials and no more than one-twentieth of the coaching cost per teacher. Further, economies for workshops can be found if some of the professional development days already scheduled by the district for teachers are used for the literacy training. Yet these less costly interventions of workshops and materials did not have the powerful impacts of the more expensive investments in added coaching personnel. We need to learn more about these trade-offs, especially how to enhance the payoffs of the less costly elements and how to best allocate the more costly components.

Further Development of Workshops and Materials: As workshops and materials are less expensive than coaches, are there ways they could be enhanced or combined differently with coaching for better cost effectiveness? Our project is continuing to test these possibilities in further research.

Other research has also found that professional development workshops with little regular follow-up is unlikely to significantly change teacher practice. But when workshops are more than

one-shot events and become the initial stimuli for an ongoing professional learning community, the chances for powerful instructional reforms may greatly increase. For example, in the case of the recommended adolescent literacy changes, the two-day workshops at the beginning of each term could lead English teachers to meet frequently and continue the training and reinforcement of these interventions. Many districts and schools use contractual teacher time for regular professional development meetings, time that could be allocated to English departmental meetings every month or so for further intensive attention to the recommended practices. Even better, more time for teacher meetings in departmental teams could be budgeted, so opportunities for weekly discussions about implementing instructional practices for struggling readers occur among the English teachers. The use of an expert coach in these departmental meetings could help focus teacher attention on the finer points of good implementations, and could be an efficient way of using experts when classroom visits to every teacher prove too expensive.

In our study, detailed lesson materials appeared to be a valuable source of teacher support only for student team discussions with preparations for shared reading. Not surprisingly, our materials are most complete for this component with extensive teacher manuals and student Partner Discussion Guides for every reading selection. Our materials are currently sparse for the other components of teacher modeling, self-selected reading and mini-lessons. Can we develop more extensive materials for these other components for a more cost-effective teacher support system?

We have not yet developed specific materials to assist teachers with their read-aloud think-aloud demonstrations, but we have ideas for further developments that we presented at a meeting of teachers and observers for their reactions.

We believe better teacher modeling may be encouraged by providing specific prompts on what kind of strategy can be demonstrated at selected points of the reading. We have in mind adding a Post-it reminder at different points of the read-aloud selection to prompt the teacher to pause there to verbally show a particular think-aloud strategy. Depending upon the reading selection, a Post-it prompt may suggest “Imaging, visualization: What mental picture can you construct with details from your experience to build upon the author’s words?” At another point, the prompt may be “Predicting, being surprised: Why did this story event catch your attention, because it was not what you had predicted?” Another might be “Inferring or interpreting (reading between the lines): Why do you think this action happened? What other details explain motives or causes?” Prompts should also be included for metacognitive elements, such as “Checking for understanding: Am I getting lost or confused here? Should I keep going to see if it clears up or go back and try to figure it out?”

We asked 25 teachers and observers if more materials, such as Post-it Prompts, would be helpful and used if provided? On the one hand, some responded that the best lesson occurs when teachers plan it themselves, and take the time to review the read-aloud passage and identify the points for pauses that model specific strategies. This group called for more intensive workshops that directly explore the comprehension strategies and help teachers prepare excellent demonstrations to show and label a good range of strategies. The other group also asked for more thorough workshops on the rationale and good practice with read-alouds, but thought that providing Post-it Prompts for think-alouds would save teacher time and be appreciated and used. In their view, teachers would still be free to substitute or add any strategy demonstrations of their own to a particular reading selection.

Allocation of Coaching: The most cost-efficient package of teacher supports for literacy instruction can be achieved not only by enhancing the effectiveness of workshops and lessons, but also be redistributing the use of expert coaches, the most costly component. The most impact for the dollar can be achieved using the more effective workshops and lesson materials, and by allocating coaches to the teachers with the greatest needs.

We found that coaches made most of the difference for novice teachers with little prior training for reading instruction, which raises additional research questions about the most cost-effective deployment of this valuable resource. In particular, we need to learn how much coaching is mainly an up-front cost needed for teachers in their first year using recommended literacy instructional approaches, without further need for much more than refresher workshops. If coaches complete the work with a teacher after one year of support, schools can afford coaching time to cover any new English faculty and to help refresh continuing faculty. On the other hand, reducing the number of coaches spending time in individual teacher's classrooms may be risking everything if teachers revert to traditional practices without regular coaching, or if coaches are spread too thin to establish the collegial relationships needed to encourage strong implementation of recommended practices. Thus, studies of coaching over multiple years are called for to calibrate how the need and impact of coaching changes the recommended interventions over many years, and for teachers who start with different levels of training and confidence for adolescent literacy instruction.

Research for cost-effectiveness considerations is also needed on how coaching can best be combined with strengthened workshops and materials for literacy reforms. Can coaches be used at regular English teacher departmental meetings to reinforce strong instructional

implementations? This would reduce the need for coaching in individual classrooms except for a small number of novice teachers.

Overall, we need to give school officials tools for cost-effective decisions to support teachers for the powerful instructional interventions that can accelerate the learning gains of struggling readers. These tools should help officials match the distribution of their English teachers' previous training and experience for reading instruction, the distribution of reading levels of students entering middle or high school, and access to expert coaches, professional development time, and detailed curriculum materials focused on student needs and recommended practices.

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Table 1

Percentage distribution of observer quality ratings of teachers' use of four recommended practices

	Instructional Practice			
	Teacher Modeling	Pre-Reading Vocabulary	Student Team Discussions	Silent Reading
	Quality Rating			
Low (1–3)	33.6	17.9	19.8	22.1
Medium (4–6)	43.2	56.0	61.2	54.5
High (7–9)	23.2	26.1	19.0	23.4
Average Rating When Used (9 Point Scale)	4.74	5.39	5.06	4.97
Total (Number of Observations When Practice was Used)	100.0 (155)	100.0 (84)	100.0 (116)	100.0 (77)
Percent of Observations in Which Practice Was Observed (of 235 Observations)	66%	36%	49%	33%
Total Number of Teachers Who Used This Practice in at Least One Observation	75	54	65	46

Table 2

Number of schools, teachers, students, and observations in each condition.

	Condition			
	Workshop	Materials	Coaching	Total
Schools	13	13	15	41
Teachers	22	28	34	84
Observations	62	79	94	235
Students	641	459	896	1996

Table 3

Mean use, time, and quality of instructional components

Recommended Practice	Workshop	Materials	Coaching
	Percent of Observations Practice was Used		
Modeling Reading	.60	.56	.77*
Student Team Literature	.35	.44	.64*
Silent Sustained Reading	.30	.36	.32
Total (Range 0-3)	1.25	1.36	1.72*
	Average Duration of Practice in Minutes		
Modeling Reading	13.36	10.14	16.09
Student Team Literature	10.03	13.80	20.31*
Silent Sustained Reading	5.95	7.00	6.51
Total Time for all Three Practices	29.95	30.85	43.04*
	Average Quality Rating by Observers (0-9)		
Modeling Reading	2.62	2.51	3.92*
Student Team Literature	1.73	2.07	3.37*
Silent Sustained Reading	1.35	1.69	1.77
Average	1.90	2.09	3.02*

Note. * = $p < .05$ between conditions (2 or 3) with control condition 1 from post-hoc results . Percent of Observations Practice was Used represents the percentage of observations in which the practice was observed at least once during the observation; Total use represents the number of three recommended practices used during a 90 minute lesson, range from 0 – 4; Average Duration of Practice in Minutes represents the number of minutes in a 90 minute period a teacher used the recommended practice; Average Quality Rating by Observers represents the average quality score for each of the recommended practices, an average is used instead of a total for quality rating since quality ratings are not additive.

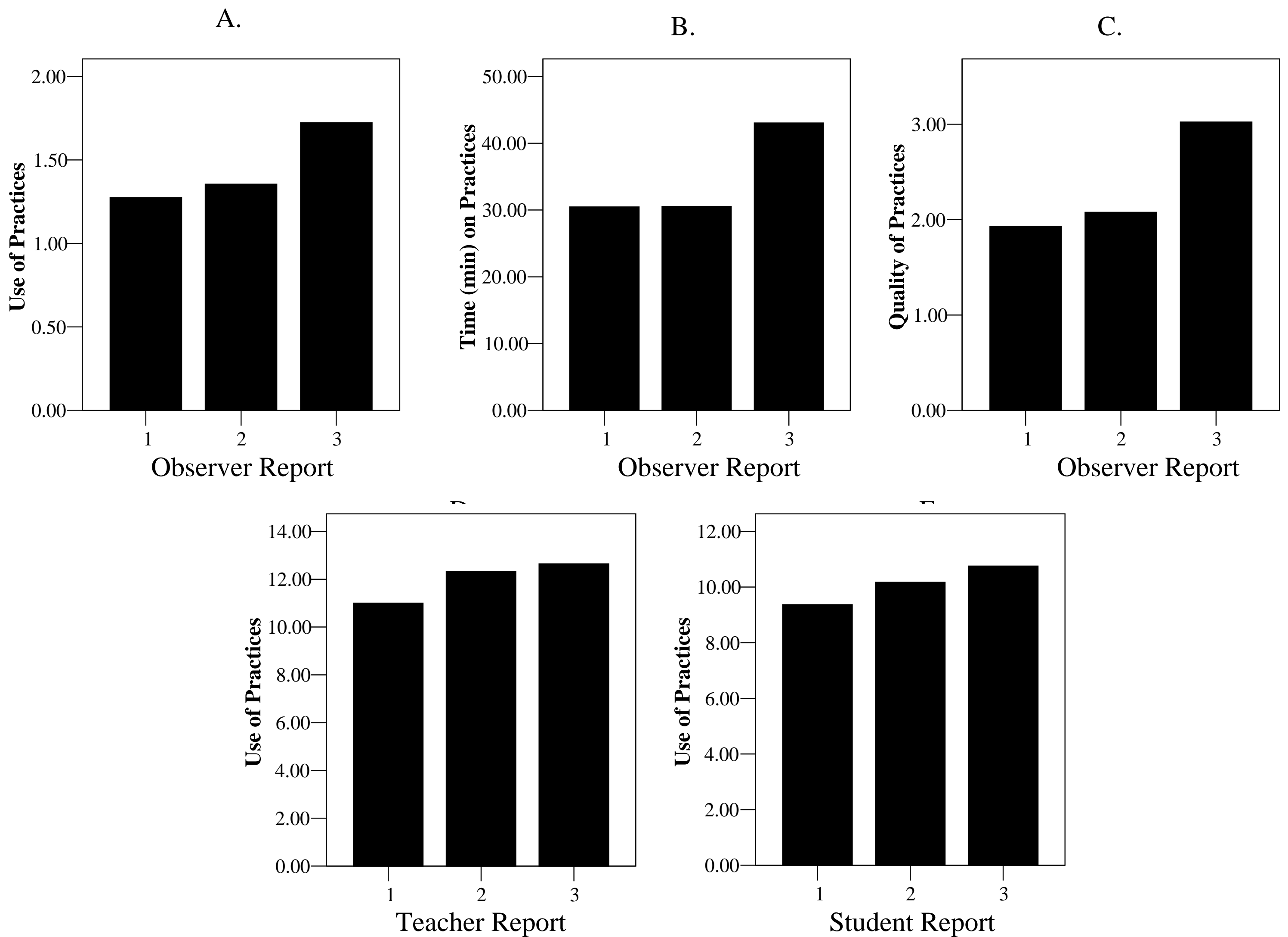
Figure 1. The use, duration, and quality of recommended literacy instruction by experimental conditions.

Figure 2. The use, duration, and quality of traditional literacy instruction by experimental conditions.

Figure 3. The quality of recommended practices by experimental conditions and teacher preparation.

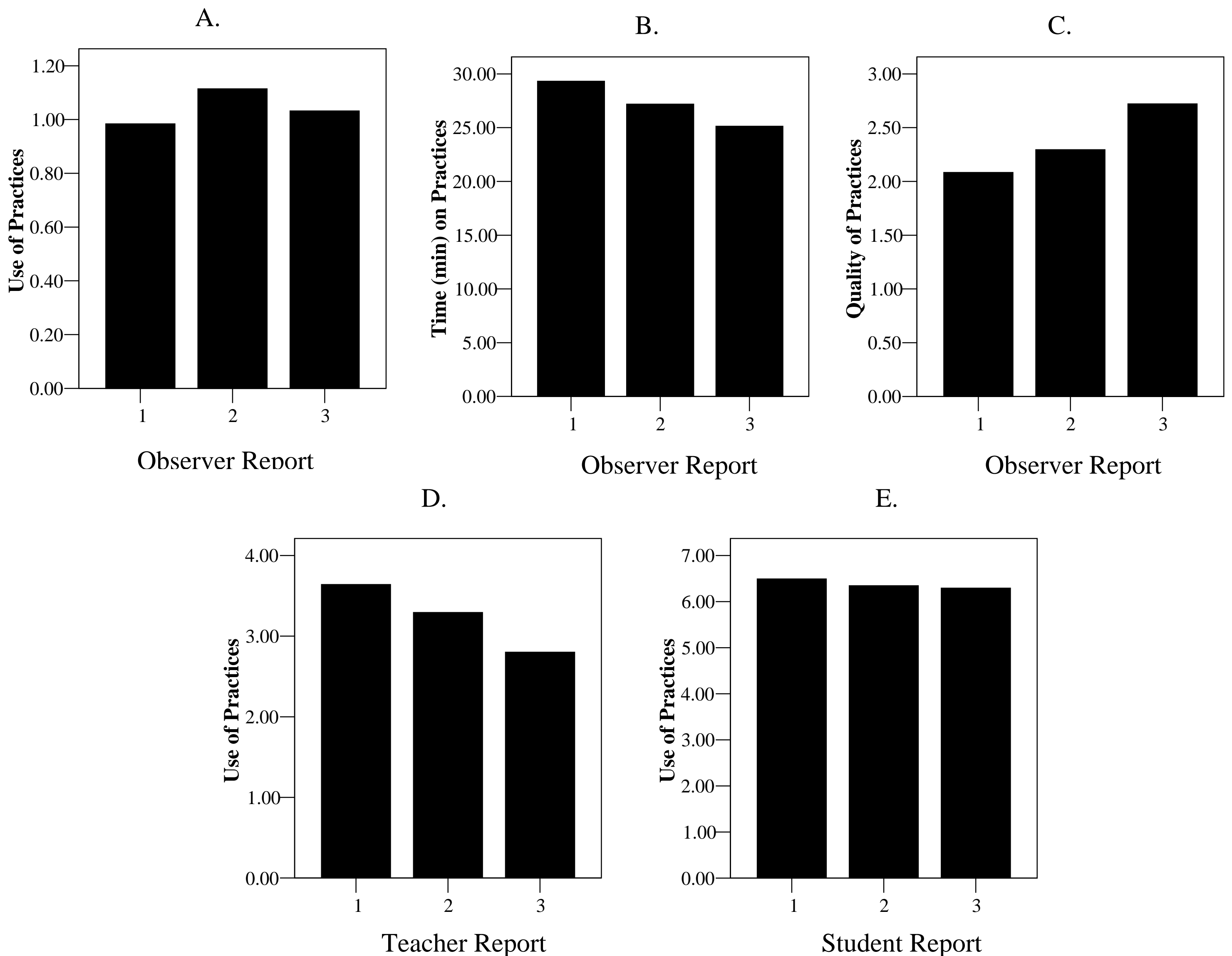
Figure 4. The normal curve equivalent comprehension gain by experimental condition.

Figure 1



Note. 1 = workshop, 2 = materials, 3 = coaching; Observer Report: Use of Practices represents the number of four recommended practices (modeling, student team literature, vocabulary instruction, silent reading) used during a 90 minute lesson, range from 0 – 4; Observer Report: Time on Practices represents the number of minutes in a 90 minute period a teacher used at least one of the four recommended practices; Observer Report: Quality of Practices represents the average quality score for the four recommended practices (0 = Did not use this practice to 9 = High Quality Use), range from 0-9; Teacher and Student Reports: Use of Recommended Practices represents the sum of three recommended practices on a 1-5 likert scale (1 = never use to 5 = use every day), range from 3-15.

Figure 2



Note. 1 = workshop, 2 = materials, 3 = coaching; Observer Report: Use of Practices represents the number of two traditional practices (whole class instruction and seat work) used during a 90 minute lesson, range from 0 – 2; Observer Report: Time on Practices represents the number of minutes in a 90 minute period a teacher used at least one of the two traditional practices; Observer Report: Quality of Practices represents the average quality score for the two traditional practices (0 = Did not use this practice to 9 = High Quality Use), range from 0-9; Teacher and Student Report: Use of Practices represents the sum of two traditional practices on a 1-5 likert scale (1 = never use to 5 = use every day), range from 2-10.

Figure 3

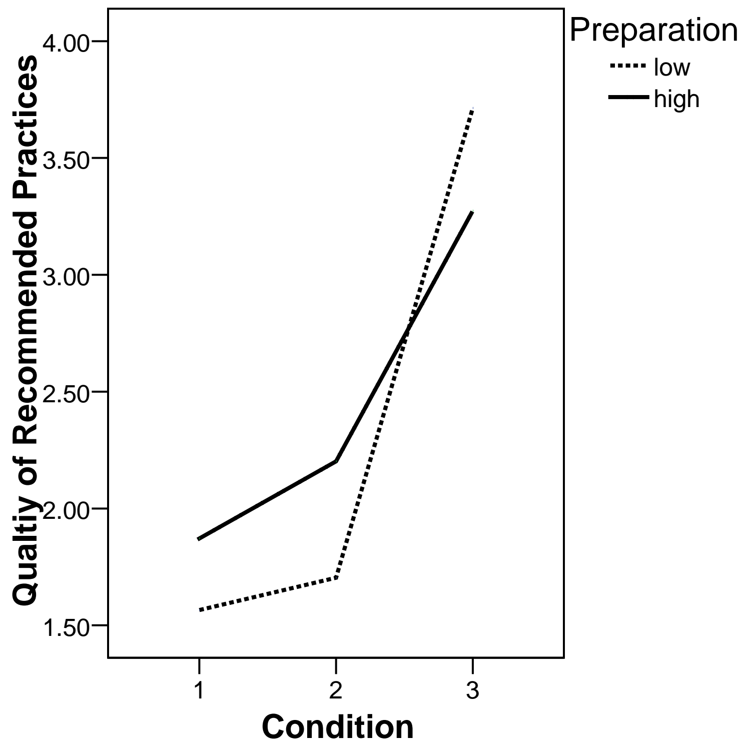
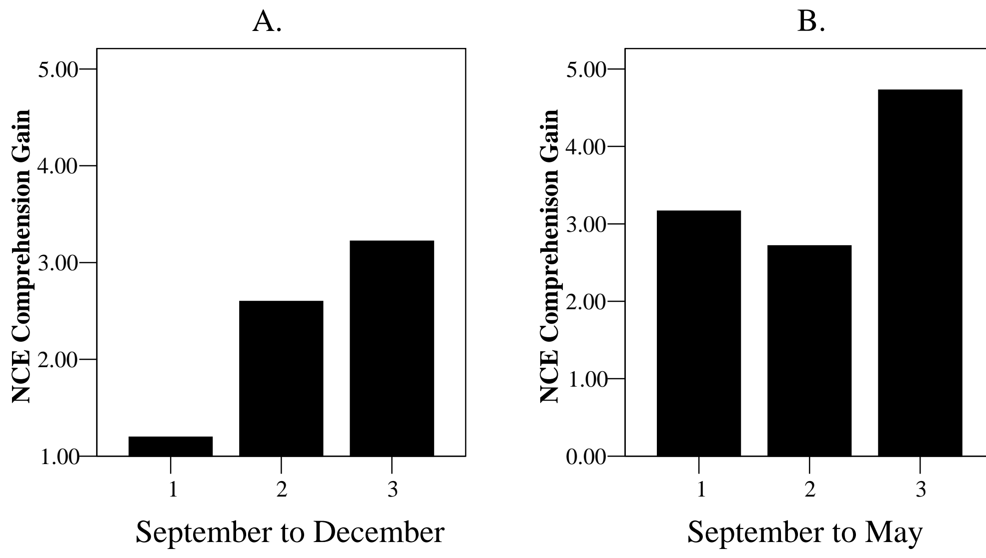


Figure 4



Appendix

Survey Items

Teacher:

How often do you:

1. Allow students to read silently during class from a book or other reading material of their choice?
2. Read aloud to the class and pause after every few paragraphs to tell students what you are thinking?
3. Have students work in small groups or with a partner?
4. Explain or demonstrate a lesson in front of the whole class for half or more of the class period?
5. Have students work individually at their desks on worksheets for half or more of the class period?

Student:

Please indicate how often the following have happened in your reading and English class during the past month:

1. Students pick a book or magazine article that they want to read silently during class.
2. My teacher reads aloud from a book to the class and explains what he or she is thinking.
3. Students work in small groups or with a partner.
4. The teacher lectures or works at the chalkboard for half or more of the class period.
5. Students work individually at their desk on worksheets or questions from the textbook for half or more of the class period.

Each item was answered on a five-point scale (Never or Almost Never, Once or Twice per month, Once or Twice per week, Several times per week, Everyday).

Responses to the first three items are summed for the scale of Recommended Practices. Responses to the final two items are summed for the scale of Traditional Practices.

Observer Rating Rubrics

Read Aloud Rating System:

Low (Minimum; Scores 1 to 3)

1. Teacher reads passage to class with no pausing to share thinking.
2. Reading is flat or dull in tone (–)
3. Reading is energetic with appropriate voice inflections
4. Teacher pauses to ask questions of students that are primarily <u>opinions not directly tied</u> to reading strategies (such as visualization, prediction, plot or character development why's, dialog meaning, symbolism or interpretation.) (+)

Medium (Good to Very Good; Scores 4 to 6)

1. Teacher reads aloud and pauses regularly to model thinking along with author
2. Modeling includes just one or two simple strategies (such as visualizing or dialog meaning) (–)
3. Modeling includes several different strategies (such as prediction, questioning, plot or character development, writer's craft of symbolism or figurative language)
4. Modeling includes checking for understanding (such as revealing early confusion, asking oneself if getting lost, admitting mind had wandered). (+)
5. Modeling includes corrective strategies (such as guessing new word from context, re-reading a section for clarification, changing reading pace to slower or faster for better understanding (+)
6. The particular reading strategies being demonstrated are <u>named</u> and discussed such as visualization, prediction, interpretation, characterization, and plot development, etc.) (+)

High (Outstanding; Scores 7 to 9)

1. Teacher reads aloud and pauses to demonstrate a variety of comprehension strategies (including thinking along with the author, checking for understanding, and using corrective strategies), and involves students in the process
2. Students are asked to verbally demonstrate their own thinking processes beyond simple personal opinions, including visualization, noting surprising or unpredicted story elements, appreciating plot and character development, evaluating factual presentations, interpreting story events.
3. Different student responses and interpretations are contrasted and discussed as particular comprehension strategies

Student Team Literature Rating System:

Low (Minimum; Scores 1 to 3)

1. No teacher preparations for the reading selection, background information on the historic or social context of the selection or on the author's reputation and style. No further discussion of why to read this selection as an example of genre or for specific reading goals.
2. Reading by students is only Round Robin format by selected students reading to the entire class.
3. Team formation is disorderly or time consuming.
4. No guides or suggested questions for team discussions.
5. Team discussions are dominated by one or two team members.
6. Team discussions are superficial about student preferences or opinions without good reasons or elaborations.
7. No feedback from teams to whole class after discussions.

Medium (Good to Very Good; Scores 4 to 6)

1. Teacher has prepared students with some background information on story context and author's characteristics, but motivation of students is only mildly aroused.
2. Team formation is smooth, students know roles of leader or recorder, etc., if appropriate.
3. Shared reading is conducted so all are involved, with both silent reading and pair-partner reading used as appropriate. Round Robin to whole class is minimized.
4. Student team discussion is assisted with defined sections ("chunks") and specific questions provided to students.
5. Discussions involve all students.

6. Discussions include some higher level topics, such as "why" questions about plot developments or character relationships or predictions of next developments.
7. Teacher asks for feedback from teams to whole class and discusses some of the differences between teams.

High (Outstanding; Scores 7 to 9)

1. Teacher creates rich background information on the historical and social context for the reading selection, on the author's reputation and style, and on what the reader should gain from experiencing this selection.
2. Teams and student roles are well defined, with a smooth transition from the previous activity.
3. Shared reading is well executed, with silent reading beforehand when appropriate, and good paired-partner reading that engages both members.
4. Teams are given sample questions to discuss for designated sections of the reading.
5. Teacher circulates among teams to keep them on task and to encourage the participation of all students and high-level discussions.
6. Student team discussions hit multiple levels, including student likes and opinions, reasons for plot development and character interactions, as well as predictions of next events and insights into author's use of dialogue and other writer's craft.
7. Teacher leads feedback from teams to whole class and discussions of differences in teams' observations and interpretations.

Student Self-Selected Silent Reading Rating System:

Low (Minimum; Scores 1 to 3)

1. Classroom library is limited and poorly organized
2. The students are directed to a specific reading by their teacher rather than having a real choice.
3. The time for silent reading is too short for the students to really get into the activity.

Medium (Good to Very Good; Scores 4 to 6)

1. Different reading categories and levels are available in the classroom library.
2. Students can choose from both short and longer readings.
3. The silent reading process is orderly, but accountability is weak or very limited.
4. This activity seems orderly enough that it may occur multiple times each week

High (Outstanding; Scores 7 to 9)

1. The students can choose books from by their interest and difficulty level from the extensive classroom library.
2. There is a system for the students to be able to continue a reading over multiple days. This could be accomplished through some form of book-marking system.
3. Student accountability for self-selected silent reading is high. The teacher may require students to fill out forms or reflective reports, such as logs, journals, mini-reviews, or dated records.
4. This activity seems orderly enough that it may occur nearly every day.

Vocabulary Instruction Rating System:

Low (Minimum; Scores 1 to 3)

1. The list of vocabulary words is not connected to the upcoming reading.
2. The vocabulary words are pronounced by the teacher.
3. Definitions for the words are supplied by the teacher or the students are asked to locate the definitions from a dictionary.

Medium (Good to Very Good; Scores 4 to 6)

1. The list of vocabulary words is connected to the upcoming reading.
2. The vocabulary words are pronounced by the teacher.
3. Students are asked to make connections between the new vocabulary words and their background knowledge. For example, they may be asked where they may have heard the vocabulary word or a similar word before and in what context. (+)
4. The teacher notes any roots, synonyms or opposites associated with the vocabulary words.
5. Students practice using the vocabulary words in meaningful sentences (+)
6. The vocabulary activity is brisk and requires no seat work.

High (Outstanding; Scores 7 to 9)

1. Vocabulary word list includes words that are of high priority for understanding the upcoming reading.
2. Vocabulary words are pronounced by the teacher.
3. Students are asked to make connections between the new vocabulary words and their background knowledge and are asked to provide meanings for the words.

4. Teacher asks the students to name any roots, synonyms or opposites associated with the vocabulary words.
5. Students practice using the vocabulary words in complex meaningful sentences, with modifiers and descriptors.
6. The vocabulary activity is brisk is brisk and at a high thinking level.

Whole Class Instruction Rating System:

Low (Minimum; Scores 1 to 3)

1. The classroom is mainly teacher-centered, where the teacher talks mostly at the students rather than with the students.
2. Demonstration or examples given in class are weak.
3. The lesson is too long.
4. The objectives are unclear.
5. There is little to no student involvement.

Medium (Good to Very Good; Scores 4 to 6)

1. Teacher models with good examples.
2. Students are involved through discussion and discovery.
3. Topics and objectives are clear.
4. The lesson is connected to other activities during the class period.
5. Teacher sets up guided practice for students, using overheads or flipcharts for demonstrations.

High (Outstanding; Scores 7 to 9)

1. The topic of the lesson is advanced.
2. Teacher modeling is inventive and motivating.
3. The teacher is creative in his or her use of student involvement.
4. Objective is obvious.
5. The lesson is well paced within the time period and connected to other activities.
6. Teacher sets up a challenging guided practice and discussion.

Seat Work Instruction Rating System:

Low (Minimum; Scores 1 to 3)

1. The task is very simple and/or disconnected with the lesson.
2. The activity goes on too long.
3. Objective is not clear.
4. Student discussion is limited and low level.

Medium (Good to Very Good; Scores 4 to 6)

1. Seat work is “guided practice” on an important skill related to the broader lesson.
2. Students may work together on reasons for answers.
3. Students also work alone for individual demonstration of skill.

High (Outstanding; Scores 7 to 9)

1. Guided practice exercises range in difficulty.
2. Students’ discussions are at a high level.
3. Individual demonstrations of skills are required.
4. Practices are brief and well connected.
5. Teacher follows with reflections on different answers.