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Striving Readers Final Evaluation Report: Danville, Kentucky

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Executive Summary of Findings: Implementation and Impact

This Striving Readers evaluation examined the impact of a targeted intervention for struggling adolescent readers and investigated the impact of a whole-school literacy model on students in participating schools. This study was conducted in ten middle, nine high, and two 6-12 schools in seven rural school districts serving large percentages of at-risk students in Kentucky. The targeted intervention for struggling readers was the Learning Strategies Curriculum (LSC) developed by the University of Kansas Center for Research on Learning. The whole-school intervention was the Collaborative for Teaching and Learning Adolescent Literacy Model (ALM).

The LSC intervention was evaluated through a multiple cohort within-school randomized field trial in which new students were assigned to treatment and control groups each year of the project. The LSC was a supplement to the regular curriculum wherein students in the targeted intervention participated in a reading class in place of an elective as part of their regular school day. The control-group condition was "business as usual," wherein students in the control group take a regular elective such as band, theater arts, civics, or physical education. This study examined the impact of the LSC on struggling sixth- and ninth-grade students' reading achievement, strategy use, and motivation.

In addition to the targeted intervention, this study evaluated the impact of ALM on teacher efficacy and student achievement in reading and writing. This school-wide model provided professional development for content teachers in integrating literacy strategies across content areas in service of content learning. All teachers in the Striving Readers schools were expected to implement the whole-school intervention, and all students were expected to receive instruction in the whole-school techniques across the content areas.

In this Striving Readers project, each school employed a literacy coach who was responsible for both teaching the targeted intervention to struggling readers *and* for coaching content teachers in implementing the whole-school intervention[1]. Through the project, these coaches had the opportunity to participate in a literacy leadership certification program through the University of Louisville (U of L).

[1] When describing the intervention teacher's role, we will refer to the literacy coach as the "LSC teacher," and when describing the whole-school program coach's role, we will refer to the literacy coach as the "ALM coach".

The impact research questions that motivated the study design and analysis plan are:

- What is the impact of the LSC on the reading achievement, strategy use, and motivation of struggling adolescent readers?
- What changes occurred in the personal and collective efficacy of the LSC teachers/ALM coaches over the course of the project?
- What is the impact of the ALM on student achievement in reading and the content areas?
- What is the impact of the ALM on content teachers' personal and collective efficacy for literacy teaching?

LSC Targeted Intervention

This study examined both the implementation and impact of the LSC over the course of the 4-year Striving Readers project.

Implementation. During each year of the project, LSC teachers participated in training and on-site support, and training was provided for school administrators. In year 1, LSC teachers were provided 7 days professional development training and up to 60 hours support from visits by mentor coaches. In year 2, the LSC teachers were provided 7.5 days training and up to 48 hours of on-site support. In year 3, LSC teachers were provided 7 days professional development training and up to 72 hours of on-site support. In year 4, LSC teachers were provided 4.5 days professional development training and up to 60 hours of on-site support. School administrators were provided a total of 6.5 days training in the intervention for the length of the grant. Overall, participation in the professional development inputs for middle, high, and 6-12 LSC teachers and administrators was high, with 100% of teachers participating fully in the training each year of the project.

Classroom implementation fidelity was measured through classroom observations and by calculating the percentage of days that students received instruction by a trained LSC teacher (teacher attendance). Observations indicated that fidelity to the targeted intervention was relatively low in year 1, with sixth-grade teachers achieving 58.5% implementation fidelity and ninth-grade teachers achieving 70.4% fidelity. In year 2, implementation fidelity increased to 80% for sixth-grade teachers and 78.5% for ninth-grade teachers. In year 3, implementation fidelity continued to rise, with sixth-grade teachers achieving 87.2% fidelity and ninth-grade teachers achieving 86.6% fidelity of implementation. In the final year of the grant, sixth-grade teachers rose to 87.7%, and ninth-grade teachers decreased slightly to 82.9%. Teacher attendance was relatively high across all years of the project.

Impacts. This study used hierarchical linear modeling (HLM) analyses to measure the impacts of the LSC on sixth-grade (middle school) and ninth-grade (high school) students' reading

achievement, strategy use, and motivation. In this Striving Readers study, there were no impacts on sixth-grade students' reading achievement, as measured by the *Group Reading Assessment and Diagnostic Evaluation,* but there were significant impacts for ninth-grade students' achievement. Results on the *Metacognitive Awareness of Reading Strategies Inventory* (Mokhtari & Reichard, 2002) indicated marginally significant impacts for sixth grade on students' self-reported reading strategy use but revealed no significant impacts on strategy use for ninth grade. Results on the *Motivation to Read Questionnaire* (Wigfield & Guthrie, 1997) indicated significant effects for both sixth- and ninth-grade students in the area of reading motivation.

ALM Whole-School Intervention

In addition to the targeted intervention, this Striving Readers study examined the implementation of a school-wide model, ALM, its impacts on content teachers' personal and collective efficacy for literacy teaching, and its impacts on student achievement in reading.

Implementation. The professional development inputs for the whole-school intervention were multifaceted, as training was provided for content teachers, ALM coaches, and school administrators. Over the 4 years of the project, content teachers were provided at least 11 days training in the whole-school model, and teachers' participation in those training sessions (as measured by attendance) was relatively high. Additional ongoing, job-embedded professional development for content teachers was provided by the school-based ALM coaches. The ALM coaches were provided 37 days of training in the school-wide intervention, and their participation was high in all years, overall, with 100% of ALM coaches participating fully in the training each year of the project. To further their professional development, ALM coaches were provided up to 246 hours of on-site support by a mentor coach over the course of the 4 years. School administrators were provided 14 days professional development in the school-wide model over the 4 years, and their participation (as measured by attendance) was relatively high in all years.

Evaluators conducted classroom observations to assess content teachers' classroom implementation of the whole-school model. In year 1, all English/Language Arts (E/LA) teachers were observed, and in year 2, E/LA teachers and a sample of teachers in other content areas were observed. In years 3 and 4, a random sample of teachers was observed across content areas. In general, middle school teachers implemented the ALM at higher levels than high school teachers.

Impacts. The impacts of the whole-school model were assessed in terms of teacher efficacy and student achievement. Teacher efficacy was measured through a teacher efficacy survey that was administered to ALM coaches/LSC teachers, all content teachers in Striving Readers schools, and content teachers in matched schools. All teachers in Striving Readers schools and teachers in matched schools completed a teacher efficacy survey at the start of the project and again at the end of each year of the project. Results indicated that teachers' personal efficacy at Striving Readers schools was lower than at matched schools at the start of the project and increased steadily. Teachers' collective efficacy was also lower at Striving Readers schools at the beginning of the project but increased steadily and surpassed that of matched schools. At the end of the project, however, both personal and collective efficacy at the Striving Readers schools

decreased to the level of matched schools. It is important to note that the matched school participation decreased considerably in the final year. For the ALM coaches/LSC teachers, personal and collective efficacy increased with exposure to the Striving Readers program. After teachers' first year in the program, personal efficacy dipped, but it recovered and increased across the remaining years of the project. Their collective efficacy increased their first year in the program, dipped in the second year, and recovered in the third and fourth years.

Conclusions

Over the course of the Danville Striving Readers project, literacy coaches, administrators, and content area teachers achieved high levels of participation in the professional development inputs overall for both the targeted intervention and whole-school model. However, there was more variation in the levels of classroom implementation of the targeted and whole-school interventions. For the targeted intervention, implementation was relatively low in year 1 but improved to high levels in years 2 through 4. For the school-wide model, middle school teachers' implementation was higher than high school teachers' classroom implementation.

The Striving Readers project has yielded positive impacts on students. In particular, the targeted intervention (LSC) has improved the reading achievement of ninth-grade struggling readers and the reading strategy use of sixth-grade struggling readers. In addition, LSC has had a positive impact on both sixth- and ninth-grade students' reading motivation.

Introduction and Study Background

Context for the Study

The Danville, Kentucky Striving Readers project involved ten middle schools, nine high schools and two 6-12 schools in seven rural school districts. One of the 6-12 schools was an alternative school for students who have not succeeded in a traditional middle and high school setting. Student populations within these schools ranged in size from 26 to 1,222 with a mean of 555 students per building. The school demographics are shown in Table 1.1. The school demographics remained fairly constant across years, with the possible exception of a decline in high school enrollment in year 3.

Table 1.1

School Demographics

	Number of schools	Average enrollment (min, max)	White	African American	Free/ reduced	Disability
			Year 1			
MS	12	460 (56, 816)	91.9%	4.2%	50.4%	14.7%
HS	11	682 (56, 1144)	92.7%	4.2%	37.3%	12.1%
			Year 2			
MS	12	457 (26, 834)	91.5%	4.3%	49.6%	12.8%
HS	11	703 (68, 1222)	92.7%	4.1%	34.4%	10.6%
			Year 3			
MS	12	475 (41, 825)	90.5%	3.7%	53.2%	14.4%
HS	11	577 (49, 952)	91.5%	4.5%	40.3%	12.6%
			Year 4			
MS	12	477 (41, 849)	90.1%	4.8%	56.1%	13.8%
HS	11	574 (80, 939)	91.6%	4.4%	43.5%	12.1%

Note. Middle schools are grades 6-8. High schools are grades 9-12.

Theoretical Rationale for and Description of the Intervention Models

Targeted Intervention. The targeted intervention for the Danville project was the LSC, developed by the University of Kansas Center for Research on Learning (KU-CRL) as one component of the Strategic Instruction Model (SIM; Tralli, Colombo, Deshler, & Schumaker, 1996). The LSC was developed to assist adolescents with learning disabilities in the general education classroom and is divided into three strands: (a) Acquisition, (b) Storage, and (c) Expression. Each strand included a number of strategies designed to help students derive information from texts, identify and remember important information, or develop writing or academic competence. Each strategy was taught through eight instructional stages: pretest and commitments; describe; model; verbal practice; controlled practice; feedback; posttest and commitments; and generalization.

The acquisition strand was geared toward helping students gain information from text. This strand included strategies such as Word Identification, Visual Imagery, Self-Questioning, and Paraphrasing, all of which were taught in this project. In general, previous research has examined the LSC strategies for acquiring information from text and has shown positive results when used for students with learning disabilities in grades 7 through 12 (Clark, Deshler, Schumaker, Alley, & Warner, 1984; Lee & Von Colln, 2003; Lenz & Hughes, 1990; Schumaker & Deshler, 1992; Woodruff, Schumaker, & Deshler, 2002).

The strategies in the storage strand are designed to help students identify, organize, and store important information. The storage strand included the following strategies: FIRST-letter Mnemonic, Paired-Associates, and the LINCS Vocabulary Learning Strategy. Previous studies have suggested the effectiveness of the FIRST-Letter Mnemonic and Paired Associates strategies, which are designed to help students remember information (Bulgren, Hock, Schumaker, & Deshler, 1995; Nagel, 1982). In this project, the LINCS strategy was part of the targeted intervention. This strategy, which involved using a mnemonic to memorize word meanings, has yielded positive results in previous research studies (see Ellis, 1992).

The Expression Strand included strategies for assisting students with writing and academic competence. It included the Sentence Writing Strategy, the Paragraph Writing Strategy, the Error Monitoring Strategy, the InSPECT strategy, the Theme Writing Strategy, the Assignment Completion Strategy, and the Test-Taking Strategy. Studies of individual Expression Strand strategies have demonstrated improved sentence writing (Kline, Schumaker, & Deshler, 1991), paragraph organization (Moran, Schumaker, & Vetter, 1981), revising and editing (McNaughton, Hughes, & Ofiesh, 1997), and theme writing (Hock, 1998). The targeted intervention in this project included Sentence Writing and Paragraph Writing.

Theoretically, the pedagogical tenets underlying the LSC are grounded in notions related to self-regulated learning, generalization, and motivation. The primary goal is teaching students "how to learn" (Schumaker & Deshler, 1992; Schumaker & Deshler, 2006). This is accomplished by teaching students a variety of task-specific learning strategies that enable them to deal with the immediate demands of the school curriculum and the self-regulatory processes needed to

successfully transfer these skills to other contexts (Deshler & Schumaker, 1986; Schumaker & Deshler, 2006). Thus, students are taught metacognitive skills that enable them to monitor progress made toward achieving goals (Deshler, Warner, Schumaker, & Alley, 1983; Flavell, 1979) and that enable them to control their own learning and thinking (Baker & Brown, 1984; Deshler et al., 1983). Personal attributions are important to this process in that students must accept responsibility for their own learning (Deshler & Schumaker, 1986) and develop the intrinsic motivation necessary to transfer their knowledge of strategies and how to use them in new situations and settings (Garner, 1990; Schumaker & Deshler, 1992).

In the Danville project, sixth- and ninth-grade students who scored two grade levels or more below grade level in reading received a minimum of 250 minutes per week of supplemental reading instruction in a targeted intervention class taught by an LSC teacher (who also served the school-wide model as an ALM coach). Students were placed in this course in addition to their regular reading/language arts classes for an entire school year. Table 1.2 shows the elements of the Learning Strategy Curriculum and the years these strategies were available to teachers for use in their classrooms. It is important to note that, due to scheduling necessities, some intervention classes met for longer than 250 minutes per week. In those classes, teachers were instructed to provide no more than 300 minutes of LSC instruction and to utilize the remaining time on other literacy activities.

Table 1.2

Learning Strategies Curriculum Elements by Implementation Year

	Implementation Year			
Learning Strategy	Year 1	Year 2	Year 3	Year 4
Word Identification Strategy (DISSECT)	X	X	X	X
Visual Imagery Strategy (SCENE)	X	X	X	X
Self Questioning Strategy (ASKIT)	X	X	X	X
Paraphrasing Strategy (RAP)	X	X	X	X
Vocabulary Strategy (LINCS)	X	X	X	X
Sentence Writing Strategy (PENS and MARK)	X	X	X	X
Inference Strategy (INFER)		X	X	X
Fundamentals of Paraphrasing and Summarizing Strategy (TMtoD)		X	X	X
Possible Selves (motivation strategy)			X	X

Over the course of the project, the professional development model for the targeted intervention included summer and follow-up trainings and on-site support from a mentor coach. To learn how to implement the targeted intervention, teachers participated in summer workshops, which were led by a certified LSC trainer from U of L. During each school year, the trainer led the teachers in follow-up workshops. Across the project, LSC teachers received 26 days of workshop training in the targeted intervention in total. To support their ongoing learning and development, teachers also participated in monthly coaching visits and regular distance support by mentor coaches from the Collaborative for Teaching and Learning (CTL) who were trained in the intervention alongside the teachers. Further, the LSC trainer made at least five visits to each teacher's classroom over the course of the project.

It is important to note that the teachers for the targeted intervention also served as literacy coaches who supported the implementation of the school-wide model in their schools. As part of their training for the project, most of the teachers participated in a literacy coach certification training offered through U of L. Through this facet of the project, they completed hallmark assessments designed to support their work as literacy coaches for the school-wide model as well as to further develop their skills as targeted intervention teachers. In addition, the intervention teachers fully participated in all training related to the school-wide model.

Whole-School Intervention. The whole-school intervention used in the Danville Striving Readers project was the CTL ALM (Awbrey, 2008). The ALM is designed to support cross-content teachers in regularly applying literacy strategies during instruction in service of content learning. It is a professional development-based program, in that it does not include a specific set of texts for teachers to implement. The model focuses on the following components: vocabulary development, reading comprehension, verbal fluency, writing to learn, writing to demonstrate learning, and academic dialogue.

All teachers in the Striving Readers schools were expected to integrate the ALM into their classroom instruction, across the curriculum, and across grade levels (6^{th} through 12^{th}). It was expected that all teachers, including auxiliary content teachers such as music and physical education, would use the ALM strategies to some extent to integrate literacy into the content areas.

All content area teachers in the Striving Readers schools received 30 hours (5 days) of training related to administering the school-wide intervention during the summer of 2006. Initial training was provided by the Professional Development Director from CTL and five mentor coaches from CTL staff. Additional assistance in the form of ongoing, job-embedded professional development was provided throughout the year on a daily basis by ALM coaches in each building and the external mentor coaches from CTL.

CTL provided professional development training, mentoring, coaching development, and direct coaching of teachers. The professional development activities to support the whole-school model included the following:

- 2 days of teacher training to full faculty in 21 project schools, with school-specific training agendas, based on observed needs of the school;
- direct-coaching training to school ALM coaches on coaching skills development, content area expertise, and support of the school-wide literacy model;
- department-specific training opportunities for each participating school, with CTL content specialists conducting each 3-hour training session;
- follow-up trainings as needed, and mentoring of ALM coaches in how to conduct formal sessions for specific departments in their schools;
- ongoing ALM coach mentoring, with several interactions each month (as individual school needs dictated), focused on modeling coaching and training, coconstructing coaching activities, observing, and providing feedback on coaching activities;
- direct training and development for school literacy leadership teams;
- facilitation in the development of schools' long-range literacy plans, with follow-up support for monitoring the successful implementation of those plans; and
- direct training for school and district administrators to support development of leadership skills, strategies, and tool application.

In addition to support provided by CTL, U of L provided direct training and coursework support for the reading intervention and foundations of literacy knowledge.

The professional development model included training and support for administrators, as well. Each year, school administrators were invited to participate in the school-wide model training with their faculties. Additionally, each year administrators attended training days where they received professional development in literacy leadership to support both the targeted intervention and the school-wide model and participated in monthly on-site mentor meetings.

Logic Models

Exhibit 1: Logic Model for the Target Intervention (See Appendix A).

Exhibit 2: Logic Model for the Whole-School Intervention (See Appendix B).

Key Evaluation Design Features

The evaluation is designed to measure the impact of the targeted intervention on student outcomes and the impact of the whole-school model on student outcomes and teacher efficacy. The impact study was guided by the following research questions:

- What is the impact of the LSC on the reading achievement, strategy use, and motivation of struggling adolescent readers?

- What changes occurred in the personal and collective efficacy of the LSC teachers/ALM coaches over the course of the project?

- What is the impact of the ALM on student achievement in reading and the content areas?

- What is the impact of the ALM on content teachers' personal and collective efficacy?

For the evaluation of the targeted intervention, data from cohorts of sixth and ninth graders were combined for analysis each year of 4 years. Every year, sixth- and ninth-grade students were randomly selected for treatment and control groups. Student outcome measures collected in the fall and spring of each year are as follows:

- Group Reading Assessment and Diagnostic Evaluation (GRADE)

- Metacognitive Awareness of Reading Strategies Inventory (MARSI)

- Motivation to Read Questionnaire (MRQ)

The evaluation of the whole-school model involved yearly measurement of student achievement in reading and writing content areas in Striving Readers schools as compared to matched schools. It also included teachers' efficacy for literacy teaching at Striving Readers schools compared to matched schools for the 4-year study period. The Kentucky Core Content Test (KCCT) was used as a student achievement measure to determine the impact of the whole-school model on students' reading and writing achievement. A Teacher Efficacy Survey was used as a teacher outcome measure.

Evaluation of the Implementation of the Targeted Intervention

Summary of the Design of the Implementation Study

The research questions that guided the implementation study of the targeted intervention are:

- What was the level of implementation of professional development/support for teachers/coaches/leaders?

- What was the level of implementation of classroom instruction?

Exhibit 3 indicates the data sources that were used to answer each implementation research question.

Exhibit 3.

Data Sources on Implementation: Targeted Intervention (Learning Strategies Curriculum)

Data Sources	Measures/Data Sources					
	Responsible Partner				Record Review	
	Developer of ALM model (CTL)	U of L trainer/LSC certified trainer	Project Director	Evaluator	PD attendance records	Surveys/ Questionnaires/ Logs/Classroom Observations
Type and amount of professional development provided to LSC teachers and level of participation.		●	●		●	●
Type and amount of coaching provided to LSC teachers and level of participation.	●	●				●
Level of participation of administrators in professional development.			●		●	
Percentage of time that LSC teachers used the targeted instructional strategies with fidelity.				●		●
Proportion of school days students received intervention instruction by a trained LSC teacher.			●			●

LSC Targeted Intervention Implementation Results

Professional Development Inputs. Table 1.3 shows the average participation of LSC teachers in professional development sessions and in coaching visits. As well, Table 1.3 shows the average number of days that school administrators attended training. This table indicates high levels of participation by both teachers and administrators in that all teachers and most administrators participated fully in the training each year of the project. If teachers missed any of the training due to illness, school responsibilities, or other factors, the LSC trainer and mentor coaches met individually with the teacher to provide missed training content.

In addition to attending training sessions on the targeted intervention, LSC teachers received on-site mentoring by a CTL mentor coach. Table 1.3 shows the average number of days LSC teachers received on-site mentoring. As the table shows, on-site mentoring of the targeted intervention decreased for all teachers across the years, as teachers were expected to need less and less implementation support as the project progressed.

Table 1.3

Means for Professional Development Inputs for Targeted Intervention by School

	PD Inputs						
	LSC Teacher Training			Administrator Training			Mentor Coaching
School Level	Mean Days Attended (Min, Max)	*n*[d]	% at Full Participation[e]	Mean Days Attended (Min, Max)	*n*	% at Full Participation[f]	Mean Site Visit Days (Min,Max)
			Year 1				
MS[a]	6.6 of 7 (6.5, 7)	10	100	1.7 of 2 (1, 2)	10	90	5.0 (4.2, 6.5)
HS[b]	6.6 of 7 (6.5, 7)	12	100	1.7 of 2 (1, 2)	9	77.8	6.5 (4.5, 10)
6-12[c]	7.0 of 7	2	100	1.8 of 2 (1.5, 2)	2	100	5.6 (5.3, 5.8)
			Year 2				
MS[a]	7.0 of 7.5 (6.5, 7.5)	10	100	1.3 of 1.5 (1, 1.5)	10	100	3.8 (1, 6)
HS[b]	7.1 of 7.5 (5.5, 7.5)	12	100	1.3 of 1.5 (1, 1.5)	9	100	4.6 (2, 8)
6-12[c]	7.5, 7.5	2	100	1.5 of 1.5	2	100	4.5 (4, 5)
			Year 3				
MS[a]	6.4 of 7 (6, 7)	10	100	1.3 of 1.5 (1, 1.5)	10	100	2.5 (.5, 12)
HS[b]	6.6 of 7 (4.5, 7)	12	100	1.3 of 1.5 (1, 1.5)	9	100	2.3 (.5, 4)
6-12[c]	6.5 of 7 (6, 7)	2	100	1.5 of 1.5	2	100	1.5 (1, 2)
			Year 4				
MS[a]	4.1 of 4.5 (2.5, 4.5)	10	100	1.4 of 1.5 (.5, 1.5)	10	100	1.3 (0, 4)
HS[b]	3.3 of 4.5 (1, 4.5)	12	100	1.4 of 1.5 (1, 1.5)	9	100	2.3 (.5, 10)
6-12[c]	4 of 4.5 (3.5, 4.5)	2	100	1.5 of 1.5	2	100	.5 (0, 1)

[a]*n* = 10 middle schools; [b]*n* = 9 high schools; [c]*n* = 2 Grades 6 – 12 schools. [d]Every school employed one Literacy Coach with the exception of three high schools, which had two Literacy Coaches each. [e]LSC teachers who missed group training sessions received make up training for all sessions from the LSC trainer and mentor coaches. [f]Participation for year 1 was complete with ≥1.5 days attended, and for years 2, 3, and 4 with ≥ 1 day attended.

It is important to note that LSC teachers received support from mentor coaches through telephone calls, email correspondence, and formal distance support. This support was for both the targeted intervention and whole-school intervention. Although documentation of this support was provided in years 2 and 3, the extent to which the support was specific to the targeted intervention or whole-school model was not designated. LSC teachers and mentor coaches engaged in 10,461 minutes of phone support calls, exchanged 2,410 emails, and participated 357 times in formal distance support during the second year of the project. In year 3, LSC teachers and mentor coaches engaged in 11,490 minutes of phone support calls, exchanged 4,320 emails, and participated 45 times in formal distance support. In year 4, LSC teachers and mentor coaches engaged in 433 phone support calls, exchanged 2,791 emails, and participated 57 times in formal distance support.

The LSC trainer also provided support through site visits, phone calls, and electronic communication. In year 1, the LSC trainer reported that coaches received an average of 3 days of site visits. For year 2, continuing coaches received an average of 3 days of visits, and new coaches received an average of 4 days of site visits. In year 3, continuing coaches received an average of 2.5 days of site visits, and new coaches again received an average of 4 days. In year 4, all coaches received an average of 2 days of site visits, according to the LSC trainer.

Many of the LSC teachers/ALM coaches participated in a literacy leadership certification program offered by U of L. The participants completed hallmark assignments as part of their certification program. By 2010, 11 teachers had finished the certification program and graduated. Two more teachers are on track to complete their certification and degree by the end of 2011.

Process for Measuring Classroom Implementation. Each LSC teacher was observed two times each year during the 4 years of the program. During the spring of 2007, all LSC teachers were observed for at least one class period on two occasions. During the 2007-2008, 2008-2009, and 2009-2010 academic years, LSC teachers were again observed twice each year, once in the fall and again in the spring. The purpose of these observations was twofold: (a) to determine treatment fidelity, and (b) to determine the extent to which LSC teachers implemented aspects of the LSC in their instruction. Observers sought and recorded evidence from the classroom environment, the observation, and an interview with the LSC teacher.

In the fall of 2006, research assistants attended a training session conducted by the LSC intervention trainer. Following that training, the research assistants and investigators worked collaboratively to create an observation protocol that included the eight instructional stages of the LSC intervention (pretest and commitments, describe, model, verbal practice, controlled practice and feedback, posttest and commitments, and generalization). They then identified activities associated with each component and constructed interview questions that would clarify the observations. The evaluators shared the observation protocol with the LSC trainer and requested feedback on the instrument. The trainer made no suggestions for changes in the protocol.

The investigators then met with the research assistants on two occasions to provide training related to taking field notes. Training consisted of lecture related to taking field notes,

watching video segments, practice taking field notes (both in classrooms and through videotape), and critique. Sample field notes were shared, critiqued, and refined. The research assistants were trained to organize their field notes using 5-minute time intervals to capture the nature of instruction throughout the entire lesson. Four codes were developed to characterize the range of instructional behaviors observed in the intervention classrooms. Those codes included: (a) LSC, (b) Other Literacy Activities, (c) Non-Literacy Activities, and (d) Behavior Management.

Four members of the evaluation team used the field notes to identify the number of minutes spent engaged in the LSC, Other Literacy Activities, Non-Literacy Activities, and Behavior Management. These four researchers sought reliability for coding the observation protocols using 10.5% of the data (*n* = 4 observations) during year 1. Inter-rater reliability was 89.8% among all four coders. Two of the coders then coded all remaining intervention observations. Overall, a total of 2,414 minutes of intervention instruction was observed and coded. In year 2, the same four team members achieved 92% percent agreement using 5 of 46 observations (10.9% of the data). Two coders then coded the remainder of the year 2 observations. For the purposes of this report, only the number of minutes teachers and students were engaged in LSC are reported. Time spent in Other Literacy Activities, Non-Literacy Activities, and Behavior Management is not disaggregated for this report.

Classroom Implementation Results. Table 1.4 shows the mean percentage of time that LSC teachers spent on the targeted intervention in the Striving Readers classrooms. In year 1 of the project, fidelity to the LSC model was higher for ninth-grade LSC teachers than for sixth-grade LSC teachers. In years 2 and 3, implementation increased for both sixth- and ninth-grade LSC teachers. In year 4, implementation for sixth-grade teachers continued to increase, but implementation for ninth-grade teachers decreased slightly. This represents a large increase in implementation fidelity for middle school teachers particularly.

Another important aspect of implementation fidelity involves the number of days that students received instruction in the targeted intervention by a trained LSC teacher. As a measure of this variable, the LSC teachers' attendance in the intervention class is also presented in Table 1.4. Intervention teachers were out of the targeted intervention classroom for a large percentage of days. LSC teachers missed, on average, 1 of every 6 days, which could affect the effectiveness of the targeted intervention.

Table 1.4

Implementation of the LSC Model in Intervention Classrooms as Measured by Percent of Class Time

	Year 1	Year 2	Year 3	Year 4
		6th grade		
LSC Instruction	58.5%	80.0%	87.2%	87.7%
LSC Teacher Attendance	90.5%	78.1%	82.2%	83.6%
Number of LSC Teachers Observed	11	12	11	11
		9th grade		
LSC Instruction	70.4%	78.5%	86.6%	82.9%
LSC Teacher Attendance	91.1%	87.5%	87.4%	85.2%
Number of LSC Teachers Observed	13	12	9	10

Note. In year 1, every LSC teacher was observed twice in the spring, with the exception of one ninth-grade teacher who was observed once. In years 2 and 3, every LSC teacher was observed once in the fall and once in the spring. In year 4, every LSC teacher was observed once in the fall and once in the spring except for one sixth-grade teacher, who was only observed in the spring. The number of LSC teachers differs from year to year due to turnover.

Literacy Coach Turnover. At the beginning of the study in 2006, 24 literacy coaches were hired at the 21 Striving Reader's school (Table 1.5). Twelve of the literacy coaches remained in the Striving Readers program for the duration of the project. Nine of the literacy coach positions turned over once. One position turned over twice, and two positions turned over three times. A total of 17 literacy coaches left the 24 positions during the study, for a turnover rate of 70.1%.

Table 1.5

Literacy Coach Turnover by School and Year

Schools	2006-2007		2007-2008		2008-2009		2009-2010	
	Summer	Midyear	Summer	Midyear	Summer	Midyear	Summer	Midyear
Middle Schools								
MS A	1st LC							
MS B	1st LC	2nd LC	3rd LC					4th LC
MS C	1st LC				2nd LC		3rd LC	
MS D	1st LC							
MS E	1st LC	2nd LC						
MS F	1st LC				2nd LC			
MS G	1st LC			2nd LC				
MS H	1st LC							
MS I	1st LC							
MS J	1st LC							
High Schools								
HS A (LC 1)	1st LC							
HS A (LC 2)	1st LC							
HS B (LC 1)	1st LC		2nd LC					
HS B (LC 2)	1st LC							
HS C	1st LC							
HS D	1st LC				2nd LC			
HS E (LC 1)	1st LC				2nd LC		3rd LC	4th LC*
HS E (LC 2)	1st LC				2nd LC			
HS F	1st LC		2nd LC					
HS G	1st LC							
HS H	1st LC							2nd LC
HS I	1st LC			2nd LC				
Grades 6-12								
Sch A	1st LC							
Sch B	1st LC							

Note. *Position was filled by coach currently at HS E (LC 2)

Implications for Impact Analysis. In effectiveness studies, it is essential to examine the extent to which the intervention was implemented with fidelity so that appropriate conclusions may be drawn from the research findings (Durlak & DuPre, 2008; Institute of Education Sciences, 2009). If student outcomes do not improve after participation in an intervention, one of two explanations may be attributed: (a) the intervention, as designed, is not effective, or (b) the intervention was not implemented as it was designed or as the developer intended. For the targeted intervention in this study, implementation of the professional development was high, and classroom model was relatively high with increasing fidelity from year to year. There was considerable teacher turnover in some schools, but this did not appear to negatively influence

classroom implementation of the LSC model. Thus, it appears that outcomes from the impact analysis may be attributed to the effectiveness of the targeted intervention in this study.

Evaluation of the Impacts of the Targeted Intervention

Study Design

Sampling Plan. The sampling plan for this evaluation was a two-stage sampling design wherein a purposively selected sample of 21 schools was selected in stage 1. Stage sampling occurred each year of the study. In stage 2, all sixth- and ninth-grade students who met eligibility criteria of scoring two grade levels below grade level (with the exception of students placed in self-contained special education classrooms full time) were randomly assigned to treatment and control groups within each of the 21 schools. Students could opt out of the intervention only with a written request by the parent or guardian. School administration strongly encouraged treatment for qualified students, however.

The evaluation combined cohorts of sixth and ninth graders from multiple years. At the beginning of each academic year, a cohort of sixth-grade students and a cohort of ninth-grade students were randomized to treatment and control groups. In this evaluation, the four cohorts of sixth-grade students were combined for analysis of impacts on sixth-grade students, and the four cohorts of ninth-grade students were combined for analysis of impacts on ninth-grade students.

*Sample Size and Pow*er. The empirical minimal detectible effects were derived at the completion of the study using Optimal Design Software developed by Spybrook, Raudenbush, Congdon, and Martinez (Optimal Design Software). The specific design used was person randomized at multisite trials. The minimal detectable effects calculated for sixth and ninth grades for this study were 0.13 and 0.11, respectively, with a power of .80.

Sample Selection Process. Every sixth- and ninth-grade student in the Striving Readers schools completed the GRADE at the beginning of the fall semester, with the exception of students placed in self-contained special education classrooms full time. Every student with a Normal Curve Equivalent (NCE) of 33 or lower was assigned to the intervention or control group. Within each school, a stratified random sampling procedure was implemented using four demographic variables: special education status, free/reduced lunch status, ethnicity, and gender. The students were systematically assigned to the intervention or control group by sorting the students by demographic group and GRADE score within each subgroup. A random number generator was used to assign the first student into either the intervention or control group. Each subsequent student was alternately assigned to intervention or control.

Counterfactual. Students who were selected for the control group received a regular elective as part of their sixth- or ninth-grade program. A wide range of electives were taken, including band, chorus, civics, and physical education. In general, it was not expected that the electives included sufficient literacy content to influence the literacy achievement of students in the control group. Reading intervention teachers did not interact with or teach students in the

control group, and intervention teachers did not share teaching or learning strategies with other teachers who may have influenced the performance of students in the control group.

Missing Data. Case-wise deletion was used for missing data, with the exception of the state reading KCCT in the base year (2006). Two schools did not have data that year, so estimates from other years were averaged and substituted.

Data Collection Plan

In the 21 Striving Readers schools, all current sixth- and ninth-grade students (with the exception of students who were placed in special education classes all day) were administered the following measures in the fall and spring of each year:

Group Reading Assessment and Diagnostic Evaluation (GRADE). Each year, all students took the GRADE assessment (Form A) during the first 2 weeks of the school year. Consistent with GRADE norming procedures, the GRADE was administered in classrooms by teachers. Prior to September 1 of the school year, schools administered make-up tests to any sixth- or ninth-grade student who missed the first administration. In the spring, students took the GRADE assessment (Form B) during the first 2 weeks of May, except in year 3, when students took the GRADE during the last 2 weeks of April. In both the fall and the spring, school literacy coaches gathered students' GRADE answer sheets and mailed or delivered them to the Collaborative Center for Literacy Development offices. Research assistants scanned the answer sheets for scoring.

Student Survey—Metacognitive Awareness of Reading Strategies Inventory (MARSI)/Motivation to Read Questionnaire (MRQ). The MARSI (Mokhtari & Reichard, 2002) is a self-report measure designed specifically to assess middle and high school students' perceived use of reading strategies during academic reading. The MARSI includes items related to three strategy domains: global, problem-solving, and support strategies. The MRQ (Wigfield & Guthrie, 1997) is designed to measure four aspects of motivation for reading (a) self-efficacy (i.e., reading efficacy, reading challenge), (b) intrinsic motivation (i.e., reading curiosity, reading involvement, importance of reading, and reading work avoidance), (c) extrinsic motivation (i.e., competition in reading, recognition for reading, and reading for grades), and (d) social motivation in reading (i.e., social reasons for reading, compliance). Because the MRQ is designed for students in grades 3 through 6, the MRQ was field tested with high school students and was modified.

Each year, students completed the MARSI/MRQ[2] during the fall and spring of the school year. Research assistants administered and collected the student surveys during the weeks of September 1 through October 30 in fall and during the weeks of May 14 through June 1 in spring.

[2] In year 1, we observed a large proportion of students who did not complete the student questionnaire (approximately 25%), possibly due to the length of the survey (82 items). An Item Response model indicated that the questionnaire could be divided without excessive loss of precision. In the fall of year 2, we randomly divided the items into two survey forms of 40 items, and our completion response was higher. In the spring of year 2 and at both administrations in years 3 and 4, we included all of the MARSI items and half of the MRQ items for a total of 60 items.

Because the sample of interest in this evaluation was struggling readers, the research assistants read the survey aloud to students as it was administered.

Summary of Analytic Approach

HLMs were used to estimate the impact of the LSC on student achievement, motivation, and reading strategies outcomes. The GRADE NCEs were used to estimate the impact of the LSC intervention on achievement. The average MARSI scores were used to estimate the impact on reading strategy use, and the MRQ averages were used to estimate the impact on motivation.

A two-level HLM model (students assigned to intervention or control group within schools) was used to determine the impact of the targeted intervention. At the student level, the spring outcome variable (achievement, strategy use, or motivation) was modeled as a function of fall outcome variables, intervention/control status and four demographic variables: gender, ethnicity, free/reduced lunch status, and special education.

Level-1 Model: Student Outcomes (achievement, reading strategies, or motivation)

$$Y_{ij} = \beta_{0j} + \beta_{1j}(Y^*_{ij}) + \beta_{2j}(T_{ij}) + \sum_{m=3}^{M} \beta_{mj}\alpha_{mij} + \varepsilon_{ij}$$

where

Y_{ij} is the spring student outcome (posttest) score for student i at school j;
β_{0j} is the mean student outcome (posttest) score for control students at school j;
Y^*_{ij} is the fall student outcome (pretest) score for student i centered at school j;
β_{1j} is the average student outcome (pretest) slope for students at school j;
T_{ij} = 1 if student i is assigned to LSC intervention at school j, and 0 if control;
β_{2j} is the mean difference of student outcome pre-post gain between intervention and control students at school j;
α_{mij} are additional covariates representing demographic characteristics of student i at school j (gender, ethnicity, free/reduced lunch, and special education status);
β_{mj} are coefficients corresponding to student demographic covariates (gender, ethnicity, free/reduced lunch, special education status), and
ε_{ij} is the random effect representing the difference between student ij's score and the predicted mean score for school j. These residual effects are assumed normally distributed with mean 0 and variance σ^2.

Level-2 Model: Student Achievement – School Level

This analysis was performed on data from sixth-grade students and ninth-grade students collected over multiple years. The covariates in this model pertain to the concurrent year the student was in the intervention or control group with the exception of the Reading KCCT score, for which the score for the base year, spring 2006, was used. In addition to the base year Reading

KCCT score, other school level covariates included enrollment, percent of white students in the school, percent of African American students, percent of students qualifying for free or reduced lunch fees and percent of students with disabilities, averaged over the 4 years of the study.

$$\beta_{0j} = \gamma_{00} + \sum_{q}^{Q} \gamma_{oq} W_{qj} + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{mj} = \gamma_{m0}$$

where

γ_{00} is the mean student outcome (posttest) score of sixth-grade control students in Kentucky Striving Readers middle schools (note: or ninth grade in high schools);

W_{qj} are school level covariates including base year Reading KCCT (spring 2006), and average school percent free/reduced lunch, percent white students, percent black students, and percent disability;

γ_{oq} are coefficients corresponding to school-level covariates;

μ_{0j} is the unique effect of school j on mean student outcome, holding W_{qj} constant (or conditioning on W_{qj}) - this effect is assumed normally distributed with mean 0 and variance τ^2;

γ_{10} is the fall student outcome (pretest) slope;

γ_{20} is the overall target intervention treatment effect on spring student outcome (posttest) scores;

γ_{m0} is the fixed m^{th} student covariate effect (gender, ethnicity, free/reduced lunch, special education status) on the spring outcome variable.

Selection of Covariates. The random assignment procedure included all student demographic variables in the HLM model, so were included regardless of significance. Interaction effects were not considered.

Description of the Targeted Intervention Samples, by Year

Characteristics of Literacy Coaches (LSC Teachers/ALM Coaches)

The literacy coaches implemented the LSC targeted and ALM whole-school interventions within the 21 schools. As shown in Table 1.6, almost all coaches were white females, and most were not certified in reading. Additionally, about half had a master's degree, and about one third had Rank I (30 hours above master's degree). Literacy coaches had an average of 12.9 years of experience.

Table 1.6

Literacy Coach Demographics

School Level	No. of Literacy Coaches[a,b,c,d,e]	Sex		Ethnicity		Reading Certification	
		Male	Female	White	Asian American	Certified	Not Certified
				Year 1			
MS	11	0	11	11	0	5	6
HS	12	1	11	12	0	1	11
6-12	2	0	2	2	0	0	2
Total	25	1	24	25	0	6	19
				Year 2			
MS	11	1	10	11	0	4	7
HS	13	2	11	12	1	1	12
6-12	2	0	2	2	0	0	2
Total	26	3	23	25	1	5	21
				Year 3			
MS	10	1	9	10	0	3	7
HS	12	3	9	11	1	1	11
6-12	2	0	2	2	0	0	2
Total	24	4	20	23	1	4	20
				Year 4			
MS	12	2	10	12	0	3	9
HS	13	2	11	12	1	1	12
6-12	2	0	2	2	0	0	2
Total	27	4	23	26	1	4	23

Note. [a]Literacy Coaches that stayed in the position for less than half a semester are not included in these statistics. [b]Twenty-four Literacy coaches were hired at the beginning of year 1, and one middle school teacher was replaced midyear. [c]Four new Literacy Coaches were replaced in the beginning of year 2 (one middle school and three high school coaches), and two were replaced midyear (one middle school and one high school coach). [d]Four new Literacy Coaches were replaced in the beginning of year 2 (two

middle school and two high school coaches), and none were replaced midyear. [e]Two new Literacy Coaches were replaced in the beginning of year 2 (one middle school and one high school coach), and three were replaced midyear (one middle school and two high school coaches).

Characteristics of LSC Classrooms

All students were expected to receive a minimum of 50 minutes of intervention instruction daily, or 250 minutes per week. Classes ranged from 45 to 90 minutes in length. For those classes less than 50 minutes an additional class period was added so students averaged at least 250 minutes of intervention instruction weekly. Classes longer than 60 minutes were instructed to use time beyond 60 minutes for other literacy activities. Middle school classes ranged from 50 to 90 minutes daily (250 to 450 minutes weekly). High school classes ranged from 50 to 84 minutes daily (250 to 420 minutes weekly).

Characteristics of Students

Table 1.7 shows the number of eligible students assigned to the intervention and control by year and by grade. The number of students with outcome data is shown, including students whose parents opted out of the program. Aside from those students who opted out of the program, all students who were randomly assigned to the treatment group were successfully placed in treatment classes. However, as depicted by the table, some students are not included in the analysis because they did not take the spring test or they transferred or withdrew from the school.

Table 1.7

Intended and Actual Number of Students in LSC Intervention and Control Groups

	Intervention					Control				
Treatment condition	Yr 1	Yr 2	Yr 3	Yr 4	Total	Yr 1	Yr 2	Yr 3	Yr 4	Total
Sixth grade										
Actual number of students in study	171[a]	154[b]	137[c]	143[d]	605[e]	131	138	120	141	530
Students without spring GRADE scores	6	4	3	8	21	9	14	6	11	40
Students that transferred or withdrew	15	21	12	9	58	26	22	15	7	70
Total number of intended students	192	179	152	160	683	166	174	141	159	640
Ninth grade										
Actual number of students in study	192[f]	183[g]	141[h]	77[i]	593[j]	165	150	144	76	535
Students without spring GRADE scores	16	10	15	6	47	33	25	17	24	99
Students that transferred or withdrew	42	19	28	15	104	48	27	19	6	100
Total number of intended students	250	212	184	98[k]	744	246	202	180	106[k]	734

[a]Eleven parent opt-outs. [b]Four parent opt-outs. [c]Three parent opt-outs. [d]Eight parent opt-outs. [e]Twenty-six 6th grade parent opt-outs.
[f]Nineteen parent opt-outs. [g]Eleven parent opt-outs. [h]Fourteen parent opt-outs. [i]Ten parent opt-outs. [j]Fifty-four 9th grade parent opt-outs.
[k]In year 4, ninth-grade students that attended Striving Readers middle schools could have taken the intervention class in sixth or seventh grade. These students were not eligible to be in the evaluation in year 4, decreasing the number of eligible high school students.

The participation rate for sixth grade for the LSC intervention in the 4-year study was 530 of the 640 intended students, or 82.8%. The intervention participation rate for ninth grade was 535 of the 734 intended students, or 72.9%. There were no cross over students; no control student was placed in an intervention class. Also, no LSC teacher had an opportunity to teach the LSC curriculum to a control student.

Demographics of students in the intervention and control conditions with outcome data were similar for both sixth and ninth grades in terms of gender, ethnicity, and socioeconomic

status (SES; Table 1.8). The sample consisted of more males than females. In terms of ethnicity, most students in the sample were white, and over half of the sample received free/reduced lunch, an indicator of low SES. Slightly more intervention students were in special education than control students.

Table 1.8

Years 1, 2, 3, and 4 Intervention and Control Student Demographics (and Proportions)

	Gender		Ethnicity		Lunch		Special Education		
Group	Male	Female	White	Minority	Reg Pay	Free/ Red	Not In	Read/ Write	Other
				6th grade					
Interv.	360 (.60)	245 (.40)	526 (.87)	79 (.13)	187 (.31)	418 (.69)	404 (.67)	126 (.21)	75 (.12)
Control	309 (.58)	221 (.42)	456 (.86)	74 (.14)	172 (.32)	358 (.68)	379 (.72)	96 (.18)	55 (.10)
Total	669 (.59)	466 (.41)	982 (.87)	513 (.13)	359 (.32)	776 (.68)	783 (.69)	222 (.20)	130 (0.11)
				9th grade					
Interv.	348 (.59)	245 (.41)	524 (.88)	69 (.12)	222 (.37)	371 (.63)	417 (.70)	110 (.19)	66 (.11)
Control	295 (.55)	240 (.45)	464 (.87)	71 (.13)	208 (.39)	327 (.61)	411 (.77)	73 (.14)	51 (.10)
Total	643 (.57)	485 (.43)	988 (.88)	140 (.12)	430 (.38)	698 (.62)	828 (.73)	183 (.16)	117 (.10)

Pearson's Chi-Square was used to test the hypothesis that students in intervention and control groups were similar for each demographic group, and no group was significantly different at the .05 level for the sixth grade. The test of equality of the proportion of boys and girls in the intervention versus control group yields X^2 (1, n = 1135) = 0.169, with p = .717. The test of

equality of the ethnic group representation (proportion of whites and minorities) in the intervention versus control group yields X^2 (1, *n* = 1135) = 0.198, with *p* = .664. The test of equality of SES group representation (proportion of students qualifying for the free/reduced lunch program) in the intervention versus control group yields X^2 (1, *n* = 1135) = 0.311, with *p* = .609. Finally, the test of equality of special education designation (proportion of students qualifying for special education for reading/writing or for another designation) in the intervention versus control group yields X^2 (2, *n* = 1135) = 2.986, with *p* = .225.

For ninth grade, the test of equality of the proportion of boys and girls in the intervention versus control group yields X^2 (1, *n* = 1128) = 1.442, with *p* = .253. The test of equality of the ethnic group representation (proportion of whites and minorities) in the intervention versus control group yields X^2 (1, n = 1128) = 0.198, with *p* = .664. The test of equality of SES group representation (proportion of students qualifying for the free/reduced lunch program) in the intervention versus control group yields X^2 (1, *n* = 1128) = 0.311, with *p* = .609. Finally, the test of equality of special education designation in the intervention versus control group yields X^2 (2, *n* = 1128) = 6.482, with *p* = .039, where the proportion of students not in special education in the intervention is .70 versus .77 in the control group.

Tests of Equivalence of Treatment and Comparison Students

The null hypothesis that sixth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the GRADE was evaluated (Table 1.9). Results showed that sixth graders in the intervention and control conditions were equivalent at the time of the pretest in terms of their reported strategy use. The null hypothesis that ninth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the GRADE was also evaluated. Results showed that ninth graders in the intervention and control conditions did not differ significantly at the time of the pretest.

Table 1.9

Equivalence of Groups on GRADE Pretest

Condition	*n*	*M*	*SD*	*t*	*df*	*p*	95% CI Lower	95% CI Upper
				6th grade				
Intervention	605	21.11	9.49	0.990	1133	0.464	-0.544	1.653
Control	530	21.66	9.32					
				9th grade				
Intervention	593	23.59	8.05	-0.074	1126	0.180	-0.994	0.922
Control	535	23.56	8.34					

Note. CI = confidence interval.

The null hypothesis that sixth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the MARSI was evaluated (Table 1.10). Results showed that sixth graders in the intervention and control conditions were equivalent at the time of the pretest in terms of their reported strategy use. The null hypothesis that ninth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the MARSI was also evaluated. Results showed that ninth graders in the intervention and control conditions did not differ significantly at the time of the pretest.

Table 1.10

Equivalence of Groups on MARSI Pretest

Condition	*n*	*M*	*SD*	*t*	*df*	*p*	95% CI Lower	95% CI Upper
				6th grade				
Intervention	439	2.97	0.65	1.711	827	0.803	-0.012	0.169
Control	390	3.05	0.66					
				9th grade				
Intervention	368	2.65	0.71	-0.882	708	0.175	-0.147	0.056
Control	342	2.60	0.66					

Note. CI = confidence interval. There are fewer students that completed the MARSI than completed the GRADE because MARSI scores are only included if the student also completed the GRADE. Also, the MARSI was administered on different days, by different people in a different context than the GRADE.

The null hypothesis that sixth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the MRQ was evaluated (Table 1.11). Results showed that sixth graders in the intervention and control conditions were equivalent at the time of the pretest in terms of their reported strategy use. The null hypothesis that ninth-grade intervention students' pretest scores did not differ significantly from control students' pretest scores on the MRQ was also evaluated. Results showed that ninth graders in the intervention and control conditions did not differ significantly at the time of the pretest.

Table 1.11

Equivalence of Groups on MRQ Pretest Years 1 through 4

Condition	*n*	*M*	*SD*	*t*	*df*	*p*	95% CI Lower	95% CI Upper
6th grade								
Intervention	439	2.78	0.45	0.183	825	0.903	-0.056	0.068
Control	388	2.79	0.46					
9th grade								
Intervention	366	2.45	0.48	-0.527	706	0.463	-0.086	0.050
Control	342	2.44	0.44					

Note. CI = confidence interval. There are fewer students that completed the MARSI than completed the GRADE because MARSI scores are only included if the student also completed the GRADE. Also, the MARSI was administered on different days, by different people in a different context than the GRADE.

Impacts on Students

Measures of Student Outcomes

Group Reading Assessment and Diagnostic Evaluation (GRADE). The GRADE is a norm-referenced, standardized test of reading achievement which yields standard NCE scores, normalized standard scores with a mean of 50 and a standard deviation of 21.06. NCEs range from 1-99. The GRADE components and subtests for sixth and ninth grades include vocabulary, sentence comprehension, passage comprehension, and listening comprehension (Williams, 2001). Word-level skills are not measured on the GRADE. Fugate and Waterman (2004) found the GRADE's reliability adequate for educational decision making. Reliability coefficients across test levels, test forms, and subject grade levels are consistently .90 or better for the total test score, including subtests of vocabulary, sentence comprehension, and passage comprehension. Alternate forms reliability ranged from 0.81 to 0.93, and test-retest reliability coefficients ranged from 0.88 to 0.93. The GRADE technical manual (Williams, 2000) shows the NCE distribution to be identical to the standard scores distribution. Further, the manual states that, although NCEs are based on percentiles, they have been converted to an equal-interval scale, making arithmetical manipulation appropriate.

Fugate and Waterman (2004) found the GRADE's reliability adequate for educational decision making. Internal reliability coefficient alphas and split-half reliabilities were consistently high (alphas above 0.90) across test levels, forms, and grade-enrollment group. Alternate forms reliability ranged from 0.81 to 0.93, and test-retest reliability coefficients ranged from 0.88 to 0.93 indicating stability of GRADE total test scores. The reliability of the GRADE as presented by the GRADE Technical Manual (Chapter 4) indicates consistency in test scores.

Metacognitive Awareness of Reading Strategies Inventory (MARSI). The MARSI is a self-report measure designed specifically to assess middle and high school students' perceived use of reading strategies during academic reading (Mokhtari & Reichard, 2002). The MARSI includes items related to three strategy domains: Global, Problem-Solving, and Support Strategies. Global Reading Strategies represent a set of reading strategies oriented toward a global analysis of text. Problem-Solving Strategies include items oriented around strategies for solving problems when the text becomes difficult to read. Support Reading Strategies involve use of outside reference materials, taking notes, and other functional or support strategies. The survey items are presented on a scale of 1 to 5, where 1 is equal to "I never or almost never do this" and 5 is equal to "I always or almost always do this." This measure has been reported to have high reliability. Mokhtari and Reichard reported a Cronbach's alpha coefficient of 0.93 for the entire scale. In the first year of this study, we found a Cronbach's alpha coefficient for fall and spring of 0.92 and 0.93 (930 items), respectively, for the MARSI.

Motivation to Read Questionnaire (MRQ). A modified MRQ (Wigfield & Guthrie, 1997) was used to measure motivation for reading. Items relate to aspects of motivation such as self-efficacy, intrinsic motivation, extrinsic motivation, and social motivation in reading. The MRQ consists of 55 items and uses a 4-point Likert response scale. The MRQ was normed for students through grade 6, so the measure was field tested and modified for grades 6 through 12. In year 1, we used the full MRQ scale. The MRQ had a Cronbach's alpha of 0.93 in the fall and spring (50 items).

Impacts on Student Reading Achievement

Sixth Grade. Table 1.12 shows the overall impact of the targeted intervention on sixth-grade students' reading achievement and the impact broken out by special education status. The HLM results indicate no significant difference in overall achievement between students in the treatment and control groups (*ES* = 0.077, *p* = .137). There also is no significant difference in achievement of non-special education students between treatment and control groups (*ES* = 0.076, *p* = .238). Finally, there is no significant difference in achievement between the special education students in treatment and control groups (*ES* = 0.099, *p* = .329).

Table 1.12

Overall Impact of the Target Intervention on Student Achievement, and by Special Education Status, Sixth Grade

	Unadjusted Means		HLM-adjusted Means		Estimated Impact	Effect Size	*p*
	Control	Tx	Control	Tx			
			All Students				
6th Grade Spring NCE	30.7 (13.86)	32.3 (13.92)	29.3	30.4	1.07	0.077	.137
6th Grade Students	530	605					
No. of Schools = 12							
			Non-Special Education Students				
6th Grade Spring NCE	33.2 (13.50)	34.2 (13.00)	32.2	33.2	1.02	0.074	.238
6th Grade Students	379	404					
No. of Schools = 12							
			Special Education Students				
6th Grade Spring NCE	24.5 (12.79)	25.4 (13.87)	25.6	26.9	1.26	0.091	.329
6th Grade Students	151	201					
No. of Schools = 12							

Note. Standard deviations are presented in parenthesis. Effect size calculated as the impact divided by the full sample control group standard deviation.

Appendix C (Exhibit Table 1) shows a summary of the full model achievement results for all intervention and control students in the sixth grade. Special education status is significant, indicating lower achievement for students in special education classes than other students. There is, however, very little explained variance in student achievement due to the effect of the school.

Appendix C (Exhibit Table 2) shows a summary of the full model achievement results for sixth-grade non-special education students. Ethnicity is significant, indicating that minority student achievement is lower than white student achievement. There is also very little explained variance in student achievement due to the effect of the school.

Appendix C (Exhibit Table 3) shows a summary of the full model achievement results for sixth-grade special education students. There are no significant student variables and little explained variance in student achievement due to the effect of the school.

Ninth Grade. Table 1.13 shows the overall impact of the targeted intervention on ninth-grade students' reading achievement, and the impact broken out by special education status. The HLM results indicate a significantly larger average achievement score for all students in the treatment group than for students in the control group (*ES* = 0.122, *p* = .032). The difference between treatment and control groups is even greater for non-special education students (*ES* = 0.204, *p* = .003). However, there is no significant difference in achievement between the special education students in the treatment and control groups (*ES* = 0.065, *p* = .549). This means the intervention may have been more beneficial for students who were not receiving special education services than for students who were receiving special education services.

Table 1.13

Impact of the Target Intervention on Student Achievement of Non-Special Education and Special Education Students, Ninth Grade

	Unadjusted Means		HLM-adjusted Means				
	Control	Tx	Control	Tx	Estimated Impact	Effect Size	*p*
All Students							
9th grade Spring NCE	32.3 (13.83)	33.7 (14.87)	30.2	31.9	1.69	0.122	.032
9th grade students	535	593					
No. of schools = 11							
Non-Special Education Students							
9th grade Spring NCE	33.4 (13.12)	36.3 (13.69)	32.6	35.3	2.68	0.194	.003
9th grade students	411	417					
Special Education Students							
9th grade Spring NCE	28.7 (15.50)	27.5 (15.75)	28.1	27.1	-1.01	-0.073	.549
9th grade students	124	176					
No. of schools = 11							

Note. Standard deviations are presented in parenthesis. Effect size calculated as the impact divided by the full sample control group standard deviation.

Appendix C (Exhibit Table 4) shows a summary of the full achievement model results for ninth grade. Special education status is significant, indicating lower achievement for students in special education classes. There is very little explained variance in student achievement due to the effect of the school.

Appendix C (Exhibit Table 5) shows a summary of the full model achievement results for ninth grade who are not in special education. There are no significant student variables, and little explained variance in student achievement due to the effect of the school.

Appendix C (Exhibit Table 6) shows a summary of the full model achievement results for ninth grade who are in special education. There are no significant student variables, and there is little explained variance in student achievement due to the effect of the school.

Impacts on Students' Reading Strategy Use

Sixth Grade. Table 1.14 shows the impact of the LSC intervention on sixth-grade students' overall strategy use. The HLM results indicate a marginally significant difference in reading strategy use for students receiving the treatment than for students in the control group (ES = 0.129, p = .057).

Table 1.14

Overall Impact of the Target Intervention on Reading Strategy Use

	Unadjusted Means		HLM-adjusted Means				
	Control	Tx	Control	Tx	Estimated Impact	Effect Size	*p*
6th grade spring MARSI score	2.86 (0.668)	2.92 (0.711)	2.88	2.97	0.086	0.129	.057
6th grade students No. of schools = 12	390	439					
9th grade spring MARSI score	2.64 (0.745)	2.73 (0.777)	2.78	2.85	0.068	0.091	.186
9th grade students	342	368					
No. of schools = 11							

Note. Standard deviations are presented in parenthesis. Effect size calculated as estimated impact divided by control group standard deviation.

Appendix C (Exhibit Table 7) shows a summary of the full model reading strategy results for all intervention and control students in the sixth grade. Gender is a significant variable, indicating lower strategy use for males than females. Also, SES is significant, indicating that students

receiving free or reduced lunches use strategies more than students of higher SES. There is very little explained variance in student achievement due to the effect of the school.

Ninth Grade. Table 1.14 shows the impact of the targeted intervention on ninth-grade students' overall reading strategy use. The HLM results indicate there is no significant difference in reading strategy use between students in the treatment and control groups (*ES* = 0.091, *p* = .186).

Appendix C (Exhibit Table 8) shows a summary of the full model reading strategy results for all treatment and control students in the ninth grade. Gender is a significant variable, indicating lower strategy use for males than females. Ethnicity is significant, indicating higher strategy use for minority students. Also, SES is significant, where students receiving free or reduced lunches report using strategies less than students of higher SES. There is very little explained variance in student achievement due to the effect of the school.

Impacts on Student Motivation

Sixth Grade. Table 1.15 shows the overall impact of the targeted intervention on sixth grade students' reading motivation as measured by the MRQ. The HLM results indicate a significant difference in reading motivation for students in the treatment and control groups (*ES* = 0.159, *p* = .016).

Table 1.15

Overall Impact of the Target Intervention on Student Motivation

	Unadjusted Means		HLM-adjusted Means				
	Control	Tx	Control	Tx	Estimated Impact	Effect Size	*p*
6th grade spring MRQ score	2.65 (0.466)	2.71 (0.490)	2.65	2.73	0.075	0.159	.016
6th grade students	390	439					
No. of schools = 12							
9th grade spring MRQ score	2.38 (0.517)	2.50 (0.534)	2.42	2.54	0.119	0.230	.001
9th grade students	342	368					
No. of schools = 11							

Note. Standard deviations are presented in parenthesis. Effect size calculated as estimated impact divided by control group standard deviation.

Appendix C (Exhibit Table 9) shows a summary of the full model motivation results for all intervention and control students in the sixth grade. There are no significant student variables in this model, and little explained variance in student achievement due to the effect of the school, with a small intraclass correlation.

Ninth Grade. Table 1.15 shows the impact of the LSC targeted intervention on students' reading motivation as measured by the MRQ. The HLM yields a significant difference between the motivation for intervention students and students in the control group (*ES* = 0.230, *p* = .001).

Appendix C (Exhibit Table 10) shows a summary of the full model motivation results for all treatment and control students in the ninth grade. Gender is a significant variable, indicating lower motivation for males than females. Ethnicity is also significant, indicating a higher motivation for minority students. There is very little explained variance in student achievement due to the effect of the school.

Evaluation of the Implementation of the Whole-School Intervention

The research questions that guided the implementation study of the whole-school intervention are:

- What was the level of implementation of professional development support/participation for teachers?
- What was the level of implementation of professional development support/participation for ALM coaches?
- What was the level of implementation of professional development support/participation for administrators?

Exhibit 4 indicates the data sources that were used to answer these questions.

Exhibit 4.

Years 1 - 4 Data Sources on Implementation: School-Wide Intervention (CTL Adolescent Literacy Model)

Data Sources	Measures/Data Sources					
	Responsible Partner				Record Review	
	Developer of ALM model (CTL)	U of L trainer/Coordinator	Project Director	Evaluator	PD attendance records	Surveys/ Questionnaires/ Logs/Classroom Observations
Type and amount of professional development provided to teachers and level of participation.	●				●	
Type and amount of professional development provided to administrators and level of participation.	●		●		●	
Type and amount of professional development provided to ALM coaches and level of participation.	●	●			●	●
Type and amount of coaching provided to ALM coaches and level of participation.	●				●	●
Percentage of class time teachers used the whole-school instructional practices.				●		

Whole-School Professional Development Inputs

Table 2.1 shows the participation of content teachers in the ALM whole-school professional development inputs, and Table 2.2 shows the participation of the ALM coaches and administrators. In years 1 through 4, the percentage of content teachers who attended at least 1 day of the whole-school summer training was calculated. There was a decrease in content teachers' participation from year 1 to year 2, but attendance remained stable in years 3 and 4. In year 3, nine schools had more teachers participate in training than the number of certified teachers in the building and this occurred in eight schools in year 4. At the onset of the project, it was expected that at least 80% of content teachers would participate in the whole-school

professional development training. Table 2.1 shows the proportion of schools that achieved full participation in the professional development each year of the project.

Table 2.1

ALM Implementation of Professional Development for Content Teachers

School Level	ALM PD for content teachers: N Attending at Least One Day[a]	% Attending[a]	% at Full Participation
	Year 1		
MS	329	86.1	70
HS	409	83.8	66.7
6-12	42	100	100
	Year 2		
MS	330	84.5	80
HS	448	80.9	55.6
6-12	39	78.0	50
	Year 3		
MS	318	100.6	70
HS	439	89.1	66.7
6-12	40	117.6	100
	Year 4		
MS	289	91.5	70
HS	412	83.7	66.7
6-12	58	128.9	100

Note. In Year 1, teachers participated in 5 days of professional development. In Years 2, 3 and 4, teachers participated in 2 days of professional development.

[a]In year 2, one school had more teachers participate in training than there were certified teachers on staff. In year 3, nine schools had more teachers participate in training than there were certified teachers on staff. In year 4, eight schools had more teachers participate in training than there were certified teachers on staff [b]In all years, ≥80% of certified staff attending was considered complete participation in the training.

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School administrators were expected to attend administrator training sessions on the ALM school-wide model each year of the project. Table 2.2 reflects a relatively high participation rate among administrators in these training sessions. Administrators were also expected to attend the school-wide trainings with their content teachers.

In years 1 through 4, ALM coaches were expected to attend training sessions to learn about how to support the ALM whole-school model. Table 2.2 indicates that all literacy coaches participated in the professional development fully. They were assisted in this by CTL mentor coaches who individually provided missed content to coaches who were absent from any part of the training.

In addition to these training sessions, mentor coaches from CTL provided on-site and distance support to ALM coaches. The numbers of days of on-site support provided for each year of the project are reported in Table 2.2. Mentor coaches also provided support for ALM coaches as needed, through phone calls, emails, and electronic distance support. This support was for both the targeted intervention and whole-school intervention, and although documentation of this support was provided for years 2 through 4, the extent to which the support was specific to the targeted intervention or whole-school model was not designated in year 1. Overall, ALM coaches and mentor coaches engaged in 10,461 minutes of phone support calls, exchanged 2,410 emails, and participated 357 times in formal distance support in year 2. In year 3, LSC teachers and mentor coaches engaged in 11,490 minutes of phone support calls, exchanged 4,320 emails, and participated 45 times in formal distance support. In year 4, LSC teachers and mentor coaches engaged in 433 phone support calls, exchanged 2,791 emails, and participated 57 times in formal distance support.

Many literacy coaches completed hallmark assignments as part of their certification program through U of L. In year 1, 19 literacy coaches participated, in years 2 and 3, 16 participated, and in year 4, 15 participated. By 2010, 11 teachers had finished the certification program and graduated. Two more teachers are on track to complete their certification and degree by the end of 2011.

Table 2.2

Means for ALM Implementation of Professional Development for Administrators and ALM Coaches

	ALM PD for Administrators[a]			ALM PD for ALM Coaches[b]			Mentor Coaching
	Mean Days Attended (Min,Max)	*n*	% at Full Participation[c]	Mean Days Attended (Min,Max)	*n*	% at Full Participation	Mean Site Visit Days (Min,Max)
			Year 1				
MS	1.7 (1,2)	10	90	11.1 (8,12)	10	100	5.4 (4.2,7.5)
HS	1.7 (.5,2)	12	77.8	10.6 (7,12)	9	100	6.4 (2.5,12)
6-12	1.8 (1.5,2)	2	100	12.0	2	100	6.4 (5.3,7.5)
			Year 2				
MS	1.3 (1,1.5)	10	100	9.0 (8.5,9.5)	10	100	5.6 (3,8)
HS	1.3 (1,1.5)	12	100	9.1 (7.5,9.5)	9	100	5.1 (3,8)
6-12	1.5	2	100	9.5	2	100	6.0 (5,7)
			Year 3				
MS	1.3 (1,1.5)	10	100	8.4 (8,9)	10	100	5.9 (3,11)
HS	1.3 (1,1.5)	12	100	7.8 (6.5,9)	9	100	5.3 (3.5,8)
6-12	1.5	2	100	8.5 (8,9)	2	100	5 (3,7)
			Year 4				
MS	1.4 (.5,1.5)	10	100	6.1 (4,6.5)	10	100	4.4 (3,6)
HS	1.4 (1,1.5)	12	100	5.3 (3,6.5)	9	100	6.2 (3,10)
6-12	1.5	2	100	6.0 (5.5,6.5)	2	100	6

[a]Administrators had specific training days. In year 1, there were 2 days of PD. In years 2, 3 and 4 there were 1.5 days of PD. Administrators were encouraged to also attend the ALM PD intended for content teachers. In year 1, 21 administrators from 12 schools attended at least 1 day. In year 2, 16 administrators from 12 schools attended at least 1 day. In year 3, 21 administrators from 17 schools attended at least 1 day. In year 4, 21 administrators from 21 schools attended at least 1 day.

[b]In year 1, ALM coaches had 12 days of PD; year 2, 9.5 days of PD; year 3, 9 days of PD; and year 4, 6.5 days of PD. ALM coaches that missed group training sessions received make up training from the mentor coaches.

[c]Participation for year 1 was complete with ≥1.5 days attended, and years 2, 3 and 4 were complete with ≥ 1 day attended.

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Classroom Observations. To judge content teachers' rate of use of ALM strategies in their classrooms, evaluators observed selected content teachers twice each year in each year of the project. During the 2006-2007 school year, all E/LA teachers in grades 6 and 9 were observed twice in the spring (*n* = 78 observations). During the 2007-2008 academic year, all sixth- and ninth-grade Language Arts teachers were again observed twice, once in the fall and once in the spring (*n* = 101 observations). Additionally, two middle schools and two high schools were randomly selected for additional observations in math, science and social studies classrooms (*n* = 49 observations). Those content teachers were also observed twice, once in the fall and again in the spring. During the 2008-2009 and the 2009-2010 academic year, a random sample of content teachers were observed twice, once in the fall and once in the spring (*n* = 112 observations). With each observation, an interview was conducted with the teacher to provide further clarity for the observer.

Observers were trained through a multiphased process that involved both the model developers and lead researchers. In the summer of 2006, research assistants attended a training session, conducted by CTL trainers, along with the content area teachers in the Striving Readers schools. Following that training, the research assistants and lead researchers worked collaboratively to create an observation protocol. First, they listed the six instructional domains present in the school-wide intervention (fluency, comprehension, writing to use what you know, writing to learn, academic dialogue, vocabulary development). Second, they identified activities associated with each component. This section of the observation protocol provided evidence as to whether any of the six instructional domains were present during content area instruction. Interview questions were constructed to supplement observations. The investigators then constructed the observation protocol and sent it to the Professional Development Director at CTL for feedback. Codes were developed to characterize the range of instructional behaviors observed in the intervention classrooms.

The investigators met with the research assistants to provide training related to taking field notes. Training consisted of lecture related to taking field notes, watching video segments, practice taking field notes, and critique. Research assistants were trained to organize their field notes in 5-minute time intervals, capturing as much detail about instruction and classroom dialogue as was possible. Sample field notes were shared, critiqued, and refined.

In November of 2006, research assistants went out in pairs and practiced taking field notes in three content area classrooms. In December of 2006, the group reconvened and research assistants practiced coding the data and discussing the codes after each observation was coded. Each 5-minute segment was coded using codes to represent (a) the ALM domains (fluency, comprehension, writing to use what you know/writing to learn, vocabulary development, and academic dialogue), (b) Other Literacy Activities, (c) Non-Literacy Activities, or (d) Behavior Management Activities. Agreement was discussed but not compiled/computed at this meeting.

After the observations were conducted in year 1, four members of the evaluation team sought inter-rater reliability for coding the observation protocols. First, two coprincipal

investigators coded and discussed one protocol. They used that coding event to establish initial rules for coding. Second, they coded five protocols independently. They discussed those five coded protocols and refined the coding rules further. Third, they recoded the initial five protocols using the new rules. Next, they coded an additional five protocols using the new rules. Inter-rater agreement on all 10 protocols (13% of the data) was 92%. Agreement on the last five protocols was 82%. After inter-rater agreement was established, raters discussed and came to 100% consensus on all codes.

The investigators used three of the coded protocols and three additional protocols to train two advanced doctoral students in literacy to use the coding rules. The investigators coded eight additional protocols (four each) and both doctoral students coded all eight protocols. Inter-rater agreement between the two doctoral students and each of the coprincipal investigators was 83.1% and 89.8% respectively. Overall inter-rater agreement across all raters was 85.5%.

Classroom Implementation Results. Table 2.3 shows the mean percentages of content class time that content-area teachers implemented the ALM whole-school intervention techniques. In year 1, the sixth- and ninth-grade E/LA teachers spent approximately one quarter of their class time using the whole-school intervention techniques. In year 2, the table indicates that use of the whole-school intervention techniques decreased among ninth-grade teachers and increased slightly among sixth-grade teachers. It is important to note that the composition of content area teachers changed in year 2 to include other content area teachers, but most (26 teachers) were E/LA teachers. In year 3, both sixth- and ninth-grade teachers slightly increased the percent of time using whole-school techniques. However, the composition of content area teachers observed had again changed to include a smaller number of E/LA teachers (8 sixth grade, and 6 ninth grade). In year 4, the ninth-grade teachers increased the percent of time using whole-school techniques. It is interesting that, for all years of the program, middle school teachers exhibited higher levels of implementation than high school teachers, overall. The ALM school-wide intervention trainer indicated that at least 30% of content-area teachers' class time should be spent on the school-wide techniques, and this level of implementation was achieved by sixth-grade teachers in years 2, 3, and 4.

Table 2.3

Implementation of the ALM Model in Content Classrooms as Measured by Percent of Class Time

	Year 1[a]	Year 2[b]	Year 3[c]	Year 4[d]
		6th grade		
Observed ALM	25.7%	30.1%	32.2%	34.1%
Number of teachers observed	25	39	30	27
Number of observations	42	77	58	52
		9th grade		
Observed ALM	24.3%	13.3%	16.1%	23.5%
Number of teachers observed	24	38	27	28
Number of observations	36	73	54	54

Note. In year 1, teachers were observed in the spring semester. In years 2 and 3, teachers were observed once in the fall and once in the spring.

[a]All teachers observed were English/Language Arts teachers in year 1.

[b]Twenty-six of the teachers observed in the sixth grade and 26 of the teachers observed in the ninth grade were English/Language Arts teachers in year 2.

[c]Eight of the teachers observed in the sixth grade and six of the teachers observed in the ninth grade were English/Language Arts teachers in year 3.

[d]Five of the teachers observed in the sixth grade and seven of the teachers observed in the ninth grade were English/Language Arts teachers in year 4.

Implications for the Impact Analysis. In effectiveness studies, it is essential to examine the extent to which the intervention was implemented with fidelity so that appropriate conclusions may be drawn from the research findings (Durlak & DuPre, 2008; Institute of Education Sciences, 2009). If student outcomes do not improve after participation in an intervention, one of two explanations may be attributed: (a) the intervention, as designed, is not effective, or (b) the intervention was not implemented as it was designed or as the developer intended. Participation in the professional development inputs was very high for literacy coaches and relatively high for content teachers across all years of the project. Implementation of the classroom model was higher for middle school teachers than for high school teachers. Although the ideal level of classroom implementation of the whole-school model has not been empirically determined, it might be expected that if the whole-school model is effective, then middle schools will yield greater impacts than high schools.

Evaluation of the Impacts of the Whole-School Intervention

The research questions that guided the evaluation study of the whole-school ALM intervention are:

- What is the impact of the ALM on teachers' personal and collective efficacy?

- What is the impact of the ALM on student achievement in reading and writing?

Description of the Teacher Samples

Impacts of the whole-school intervention were evaluated by comparing teacher outcomes in Striving Readers and matched comparison schools. These matched pairs of schools were identified by the Kentucky Department of Education (KDE) based on ethnicity, number of students, percent free and reduced lunch, and accountability index. Of the 21 matched schools identified by the KDE, 12 schools participated in the Teacher Efficacy Survey in year 1, 9 schools in year 2, 8 schools in year 3, and 4 schools in year 4.

Demographic data on teachers was gathered from the Teacher Efficacy Survey (Table 2.4). Teacher demographics at the Striving Readers and matched schools are similar with respect to gender, ethnicity, and education level. The corresponding pie charts (Figure 1.1) show content areas were represented with similar proportions of teachers in the Striving Readers and matched schools across all 4 years. Striving Readers schools had a larger proportion of middle school teachers, and a smaller proportion of high school teachers complete the questionnaire as compared to the matched schools (Figure 1.2). Striving Readers school teachers completing the questionnaire had slightly less experience, with over half with 7 or fewer years teaching experience (Figure 1.3).

Table 2.4

Teacher Demographics for Striving Readers and Matched Schools, Years 2006-2010

		Gender		Ethnicity			Highest Degree				
	No. of Surveys	F	M	Wht.	Blk.	Othr	BA/ BS	MA	Spec.	Doc.	No. Rsp.
Striving Readers Schools											
No.	1295	851	444	1237	31	27	276	719	262	15	23
(Prop.)		(.66)	(.34)	(.96)	(.02)	(.02)	(.18)	(.52)	(.26)	(.02)	(.02)
Matched Schools											
No.	534	350	184	496	22	16	97	279	137	8	13
(Prop.)		(.65)	(.35)	(.93)	(.04)	(.03)	(.21)	(.56)	(.20)	(.01)	(.02)

Figure 1.1. Striving Readers and Matched Schools Teachers' Primary Content Responsibility.

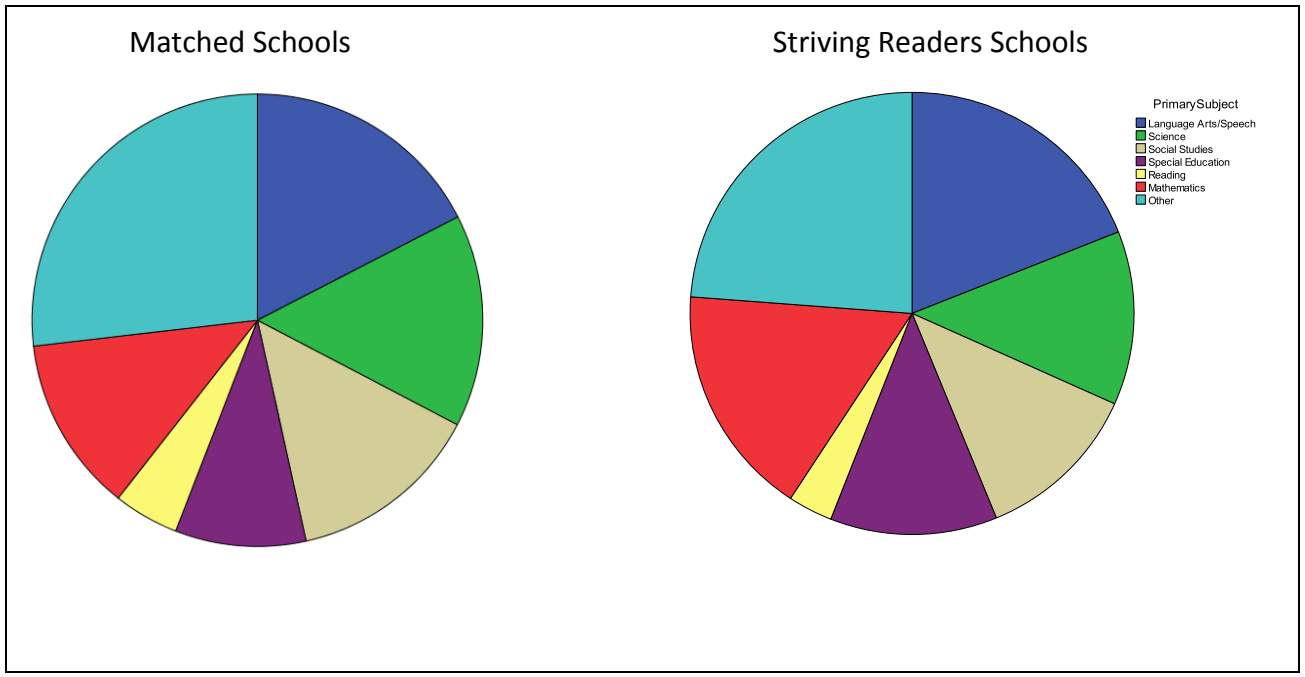


Figure 1.2. Striving Readers and Matched Schools Teachers' School Level.

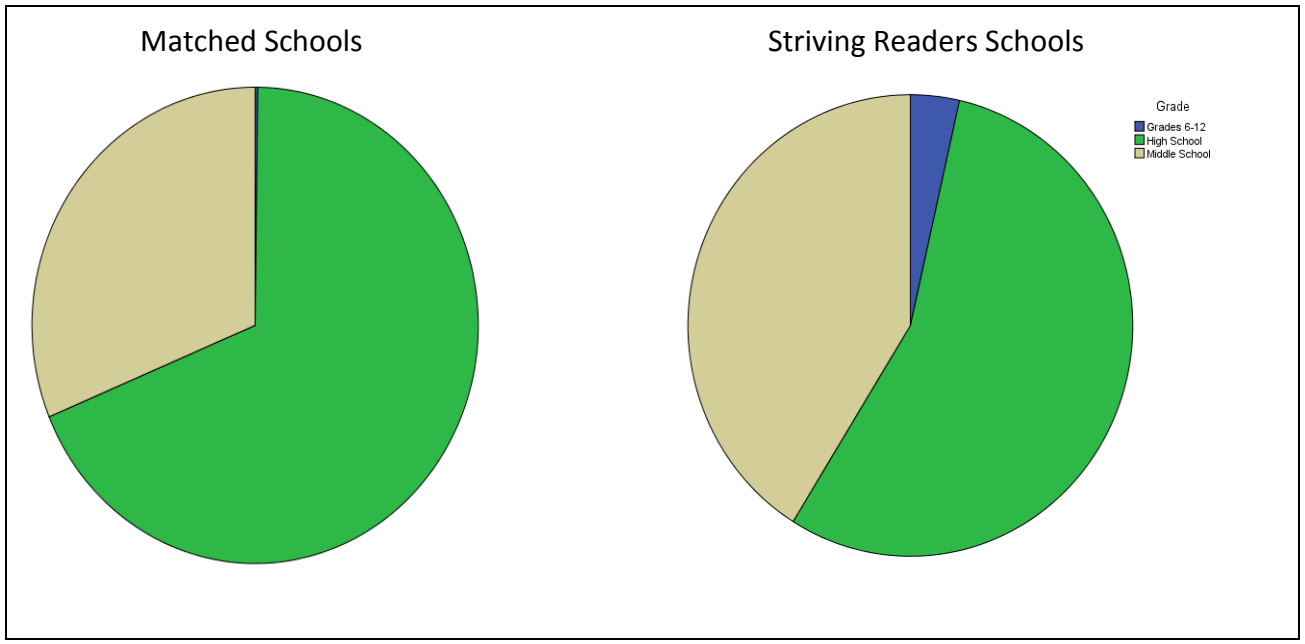
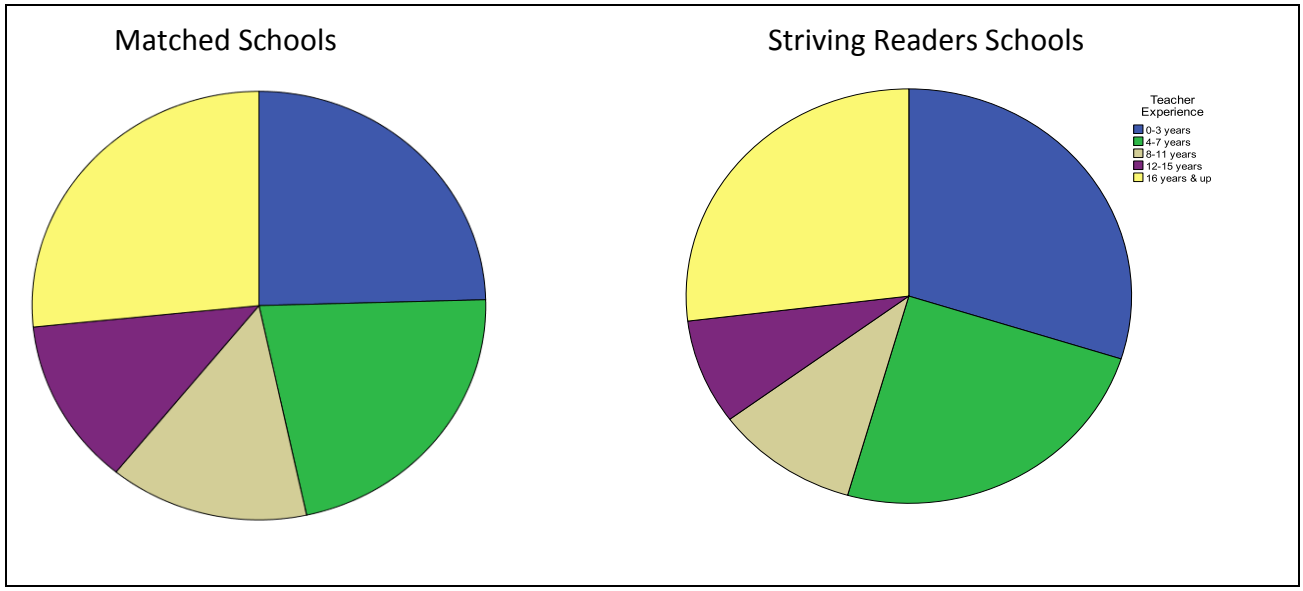


Figure 1.3. Striving Readers and Matched Schools Years of Teacher Experience.



Teacher Efficacy Measure

The Teacher Efficacy Survey was used to determine the impact of the whole-school professional development model on teachers' personal and collective efficacy for literacy teaching.

Teacher Efficacy Survey. Teachers' sense of efficacy for teaching has been associated with effective classroom practices (Ashton & Webb, 1986; Gibson & Dembo, 1984) and higher student achievement (Ross, 1992). At the start of the project and each subsequent year, surveys of teacher efficacy were used to determine the effects of the project on teachers' sense of efficacy for literacy teaching. A teacher efficacy survey comprised of 60 items to measure Personal Teaching Efficacy (PTE) and Collective Teacher Efficacy (CTE) was administered to literacy coaches. PTE items were drawn from teacher efficacy instruments developed by Woolfolk and Hoy (1990), Hoy and Woolfolk (1993), and Gibson and Dembo (1984). PTE items include statements, such as, "Some students are not going to make a lot of progress this year in reading, no matter what I do." CTE items were developed by Goddard, Hoy, and Hoy (2000) and include statements, such as, "If a child does not want to read in their content area, most teachers in my school give up." Some questions from the original surveys were altered to reflect more of a reading emphasis (e.g., "When a student does better than usual in reading, it is often because I exerted a little extra effort."), and some additional questions were added by the evaluation team that focused specifically on processes related to teaching content area literacy, such as, "I know how to teach vocabulary effectively." All items used a 6-point Likert-type format, ranging from 1 is equal to Strongly Agree to 6 is equal to Strongly Disagree.

All of the original instruments from which the present survey was adapted have demonstrated high reliability and validity. Gibson and Dembo (1984) reported Cronbach's alpha coefficient of 0.75 on the PTE subscales. Goddard et al. (2000) reported Cronbach's alpha

coefficient of 0.96 for the CTE subscale. In the present study the reliability of each subscale, with the revisions described above, was evaluated for content teacher survey results. The PTE subscale was calculated each year and shown to be reliable, with lowest results in the summer of 2006 of (α = 0.878, *n* = 624). Likewise, the CTE subscale was reliable, with lowest results also shown in the summer of 2006 of (α = 0.801, *n* = 650).

Impacts on Teacher Efficacy

The school-wide intervention teachers' efficacy was measured using the Teacher Efficacy Survey. Data were gathered prior to training in the summer of 2006 and again in the summers of 2007 through 2010. Table 2.5 displays the means, standard deviations and sample sizes of Striving Readers and matched comparison content area teachers' self-reported personal and collective efficacy. Each year more teachers from Striving Readers schools participated in the survey than from matched schools, and the number of matched school teachers declined every year. In 2006, 30% of the survey participants were from matched schools. However, by 2010, fewer than 15% of the teachers participating were from matched schools.

Table 2.5

Means and Standard Deviations on Personal and Collective Efficacy Subscales of the Teacher Efficacy Survey for Striving Readers and Matched Schools Across Time

	Personal Efficacy		Collective Efficacy	
Summer	Striving Readers	Matched	Striving Readers	Matched
2006				
n	737	319	735	316
M	3.82	3.87	4.02	4.18
SD	(.58)	(.53)	(.67)	(.68)
2007				
n	724	208	718	208
M	3.98	3.96	4.22	4.15
SD	(.51)	(.52)	(.63)	(.65)
2008				
n	632	202	627	206
M	3.98	3.91	4.22	4.07
SD	(.52)	(.62)	(.62)	(.69)
2009				
n	734	251	729	251
M	4.14	4.03	4.41	4.26
SD	(.52)	(.55)	(.58)	(.69)
2010				
n	696	121	695	121
M	4.04	4.05	4.32	4.25
SD	(.55)	(.55)	(.63)	(.65)

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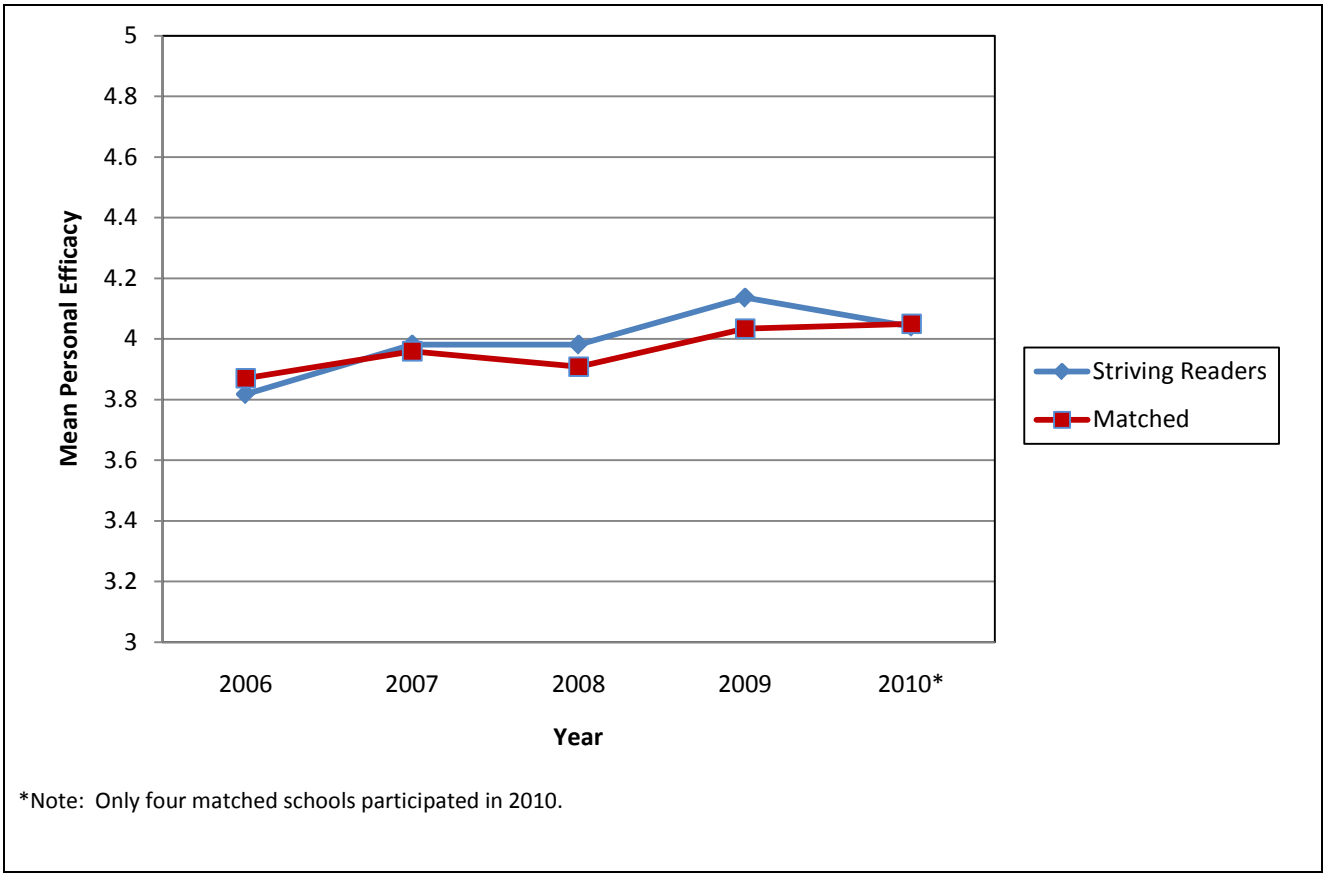
The personal efficacy averages over time are illustrated in Figure 2.1, and the collective efficacy averages are illustrated in Figure 2.2. Figure 2.1 shows that Striving Readers teachers had slightly lower personal efficacy in the summer of 2006 than the teachers at the matched schools. However, by the summer of 2008, the Striving Readers teachers had slightly higher personal efficacy than the matched school teachers. Striving Readers teachers and matched school teachers' increased in personal efficacy in 2009, and the difference between the two groups increased. By 2010, personal efficacy for teachers in Striving Readers schools dropped to the level of the matched schools.

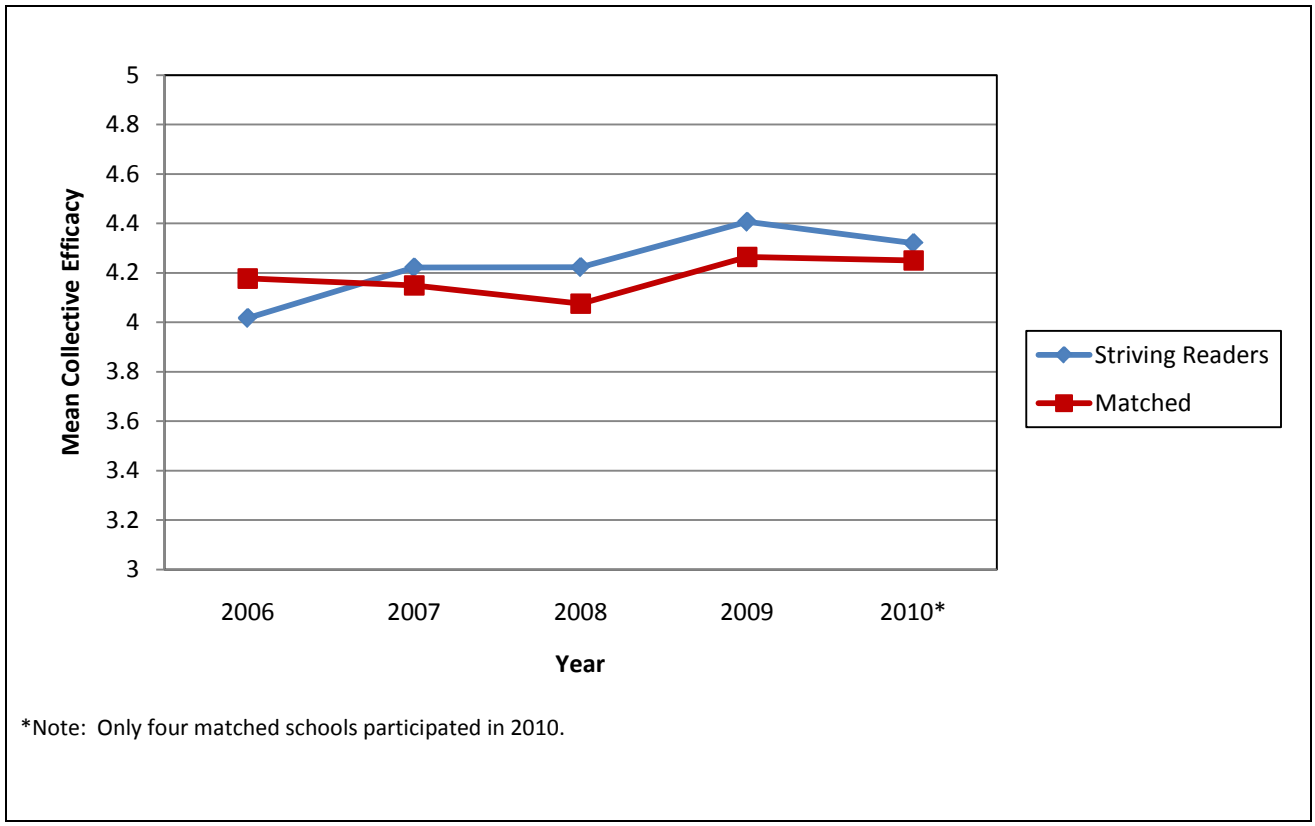
Figure 2.1. Means of Teachers' Self-Reported Personal Efficacy as a Function of Time and Treatment Condition.



*Note: Only four matched schools participated in 2010.

A somewhat similar trend can be seen in Figure 2.2, showing that teachers in the Striving Readers schools began with lower collective efficacy than the teachers at matched schools and by the summer of 2008 had higher collective efficacy. However, a fairly steep decline in collective efficacy of teachers at matched schools between 2007 and 2008 is evident. This decline was not shown as sharply in the personal efficacy data. Collective efficacy for teachers in Striving Readers and matched schools increased in 2009. In 2010, the collective efficacy of teacher in Striving Readers schools dropped to the level of the matched schools, which was also shown for personal efficacy.

Figure 2.2. Means of Teachers' Self-Reported Collective Efficacy as a Function of Time and Treatment Condition.



Changes in Teacher Efficacy for Literacy Coaches (LSC Teachers/ALM Coaches)

The literacy coaches' self efficacy was measured using the Teacher Efficacy Survey. Pretest data were gathered prior to training in the summer of 2006, or at the time new literacy coaches were hired to fill vacancies. Literacy coaches' efficacy was measured each subsequent summer. Table 2.6 displays the means and standard deviations for literacy coaches on the Personal Efficacy and Collective Efficacy Subscales by year of exposure to the Striving Readers program. This table, along with Figure 2.3, illustrates that literacy coaches decreased in their sense of personal efficacy after their first year in the program. After participating in Striving Readers for a second year, literacy coaches' personal efficacy for literacy teaching rebounded and surpassed their initial efficacy level. Personal efficacy remained steady after a third year in the program, and increased after a fourth year. Conversely, literacy coaches' sense of collective efficacy increased after one year of participation in the Striving Readers program, remained steady after a second year, and increased at the end of a third and fourth year.

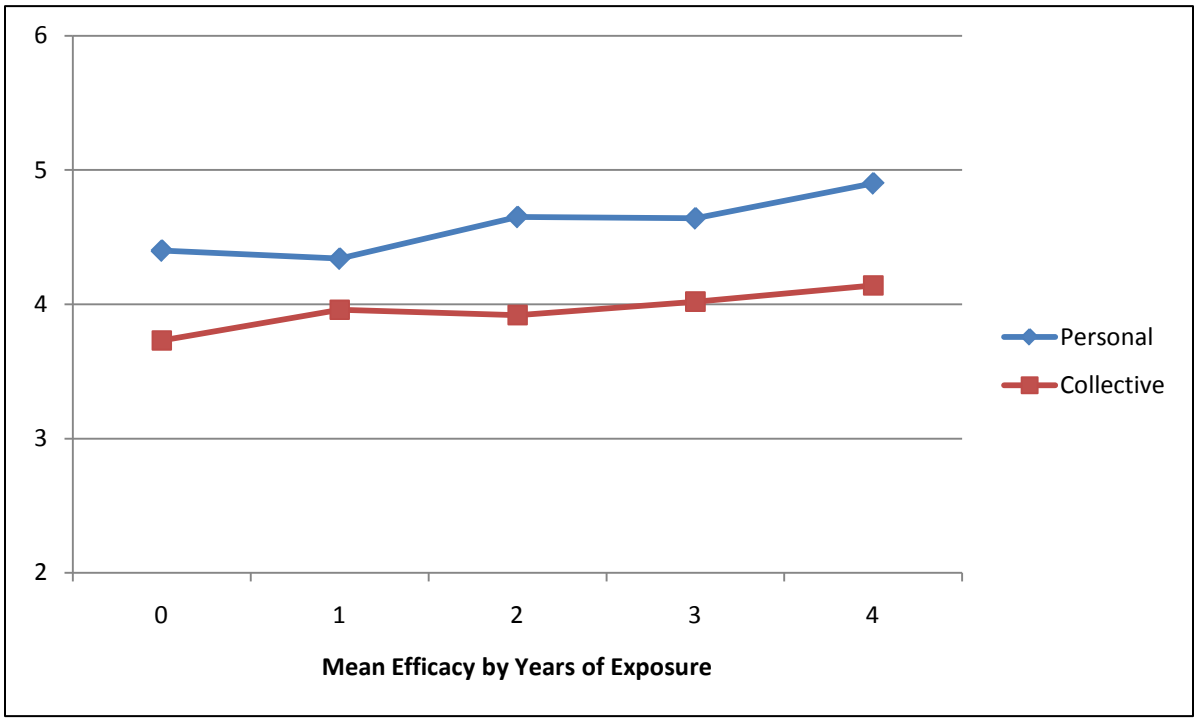
Table 2.6

Literacy Coach Efficacy by Exposure to the Striving Readers Program

	n[a]	Minimum	Maximum	*M*	*SD*
			Personal efficacy		
At time of hire	23	3.1	5.3	4.40	.635
After first year	17	3.0	5.3	4.34	.695
After second year	26	3.7	5.3	4.65	.474
After third year	18	2.3	5.5	4.64	.717
After fourth year	13	4.4	5.3	4.90	.314
			Collective efficacy		
At time of hire	23	2.7	4.7	3.73	.529
After first year	17	2.4	5.1	3.96	.790
After second year	26	2.4	5.4	3.92	.756
After third year	18	2.4	5.2	4.02	.678
After fourth year	13	3.1	5.2	4.14	.595

[a]Literacy coaches were given survey at the time of hire and each subsequent summer in the program. Due to turnover and uncompleted questionnaires, the number of completed questionnaires varies by year.

Figure 2.3. Literacy Coach Efficacy by Exposure to Striving Readers Program.



Measures of Student Outcomes

The KCCT is a criterion-based exam given to all Kentucky students each spring and is an important component of the Kentucky Testing System (KDE, 2011). The KCCT assesses student achievement in the core content areas, including reading, writing, mathematics, science, and social studies. A composite score by content area is derived annually for every school in Kentucky. These scores are used to evaluate the impact of the ALM whole-school intervention. It is important to note that the criteria for scoring the KCCT results changed in 2007, and this change resulted in higher scores than did the previous scoring criteria. The timing of this change coincides with the first year of the ALM implementation.

ALM implementation began in the fall of 2006. Because most KCCT tests are given in the spring, the 2006 spring KCCT scores are preintervention scores and the 2006-07 academic year is the first year of implementation. High school writing KCCT exams, however, are given in the fall of each year and are published in the following spring. So, a high school writing test taken in the fall of 2006 is a preintervention score but will be published as a 2007 score. Consequently, the intervention year will be shown as 2007 through 2008 for the high school writing scores.

Summary of Analytic Approach

A short interrupted time-series quasi-experiment design (SITS) has observations of values, such as school test results, collected at specific time intervals. At some point in the time-series, an

intervention would have been introduced that may effectively "interrupt" the direction of the time series. The change, or "jump" at the introduction of the intervention, and the change in slope is measured to determine the impact of the intervention. A "Short Interrupted Time-Series with Multiple Cases Each Measured Repeatedly" (SITSMCMR) is the quasi-experimental design used to measure the impact of the whole-school ALM intervention (Braver & Brahm, 2005). This method included multiple measures of Striving Reader school KCCT scores 4 years prior to and 4 years after the ALM intervention. In addition, the model includes KCCT scores for matched school for the corresponding years.

At the beginning of the project comparison schools were identified by the KDE based on ethnicity, number of students, percent free and reduced lunch, and accountability index. Data are available for 9 of 12 matched middle schools and 10 of 11 matched high schools.

Impact Model for Short Interrupted Time Series with Multiple Cases each Measured Repeatedly (SITSMCR) with Comparison Schools

$$Y_{jk} = \beta_0 + \alpha_{0k} + \beta_1(Trt_k) + \beta_2(Time\_BMM_{jk}) + \beta_3(spline_{jk}) + \beta_4(Trt_k * spline_{jk}) + \beta_5(Trt_k * spline_{jk} * Time\_BMM_{jk}) + \varepsilon_{jk}$$

Where:

$\beta_0 + \alpha_{0k}$ = Baseline mean projection for matched schools,

β_1 = Difference in baseline mean projection, Striving Readers versus matched schools,

β_2 = Postinterruption slope, matched schools,

β_3 = Interruption year slope ("jump"), matched schools,

β_4 = Interruption year impact; difference between Striving Readers predicted and observed difference and matched school predicted and observed difference in interruption year 1 ("jump")

β_5 = Impact on slope; difference between Striving Readers and matched school post-interruption slopes

ε_{jk} = error for j=4 preinterruption time periods, and k=4 postinterruption time periods,

and

Trt_k = 1 for Striving Reader schools, 0 for matched schools

$Time\_BMM_{jk}$ = 0 for preinterruption time period (spring 2003, '04, '05, '06), and
=0 for spring 2007, 1 for spring 2008, 2 for spring 2009, and 3 for spring 2010

$spline_{jk}$ = 0 for preinterruption time period (spring 2003, '04, '05, '06), and
=1 for postinterruption time period (spring 2007, 2008, 2009, and 2010)

Impacts on Student Achievement

The SITSMCMR model is used to measure the impact of the ALM on the student achievement at the Striving Readers schools. Inherent in the model is the assumption that the Striving Readers

schools would perform similarly to the matched schools had there not been an intervention. The behavior of the matched schools is shown by three estimates of the model. The first estimate is of the intercept or the baseline mean projection, which is a measure of how the matched schools would be expected to perform during the postintervention years. The second measure estimates the effect of the matched school postinterruption slope (estimate of the slope from spring of 2007 through spring of 2010). The final measure estimates the matched school slope during the first year of implementation; from spring of 2006 to the spring of 2007.

There are three corresponding SITSMCMR measures to determine the impact of the ALM on the Striving Readers schools. The first measure estimates the effect of the treatment group on the baseline mean projection, or difference between Striving Readers baseline mean projection and the matched school projection. The second measure estimates the impact of the ALM during the interruption year, or the first year ALM was implemented, by measuring the difference between the "jump" in Striving Reader school scores between spring of 2006 and spring of 2007 and the change in matched school scores for the same year. The final measure estimates the impact on the slope after the ALM was implemented by estimating the difference between Striving Readers and matched school slopes from the spring of 2007 through 2010.

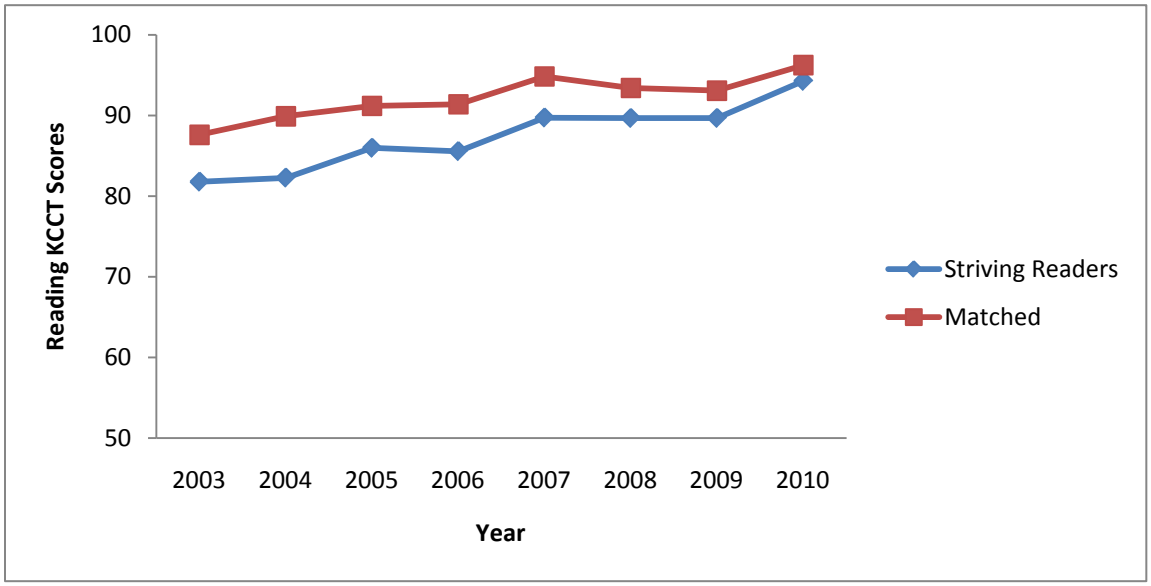
Graphs depicting each school-by-school treatment group (Striving Readers or matched) are in Appendix D.

Reading Achievement

Middle school. The SITSMCMR approach first considers the trend in achievement for matched schools. The results of middle school SITSMCMR analysis of reading achievement are shown in Figure 2.4 and Table 2.7. As can be seen in both the figure and the table, the matched schools had a significant increase between 2006 and 2007. This "jump" for the matched schools was due to a change in the scoring criteria of the reading KCCT.

Comparing the matched school with the Striving Readers school KCCT scores, there is a significant difference in baseline projections. The figure shows the Striving Readers school reading achievement is significantly lower prior to the intervention, which challenges the assumption of the SITSMCMR model. There are no significant differences between the Striving Readers and matched school model results postintervention.

Figure 2.4. Middle School Reading KCCT Scores, Striving Readers and Matched Schools Averaged by Year (Spring).



*The increase in reading scores (2006-07) was due to a change in the scoring criteria.

Table 2.7

Middle School Reading Achievement SITSMCMR Results

Difference of Impacts

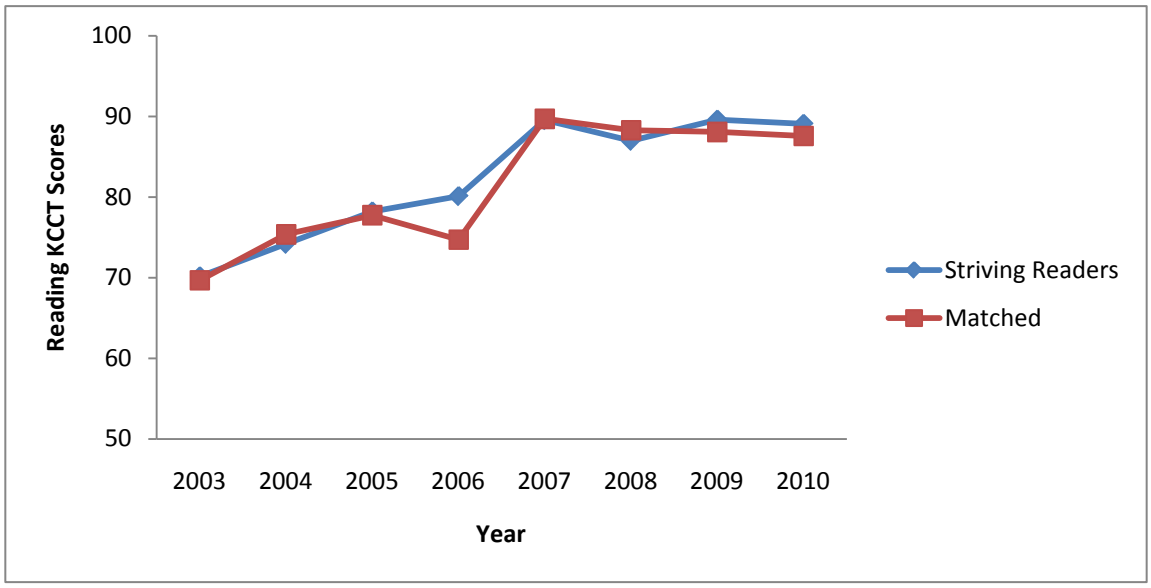
Effect	Estimate	SE	df	t	Pr > |t|
$\beta_0 + \alpha_{0k}$; Intercept	90.0077	1.4792	16	60.85	<.0001
β_1; trtgrp	-6.3661	2.1088	119	-3.02	0.0031*
β_2; Time_BMM	0.3931	0.6542	119	0.6	0.5491
β_3; Spline	3.3804	1.9351	119	2.65	0.0092*
β_4; trtgrp*Spline	0.3959	2.7495	119	0.67	0.5025
β_5; trtgrp*Time_B*Spline	0.9721	0.9251	119	1.05	0.2955

*Significant at the .01 level

High school. The results of high school SITSMCMR analysis of reading achievement are shown in Figure 2.5 and Table 2.10. As can be seen in both the figure and the table, the matched schools had a significant increase between 2006 and 2007. Again, this "jump" for the matched schools was due to a change in the scoring criteria of the reading KCCT.

Comparing the matched school with the Striving Reader school KCCT scores, there is no significant difference in baseline projections. The figure shows the Striving Reader school reading achievement is very similar to the matched school achievement prior to the intervention. There are no significant differences between the Striving Reader and matched school model results postintervention.

Figure 2.5. High School Reading KCCT Scores, Striving Readers and Matched Schools Averaged by Year (Spring).



*The sharp increase in scores in reading (2006-2007) was due to a change in the scoring criteria.

Table 2.8

High School Reading Achievement SITSMCMR Results

Difference of Impacts

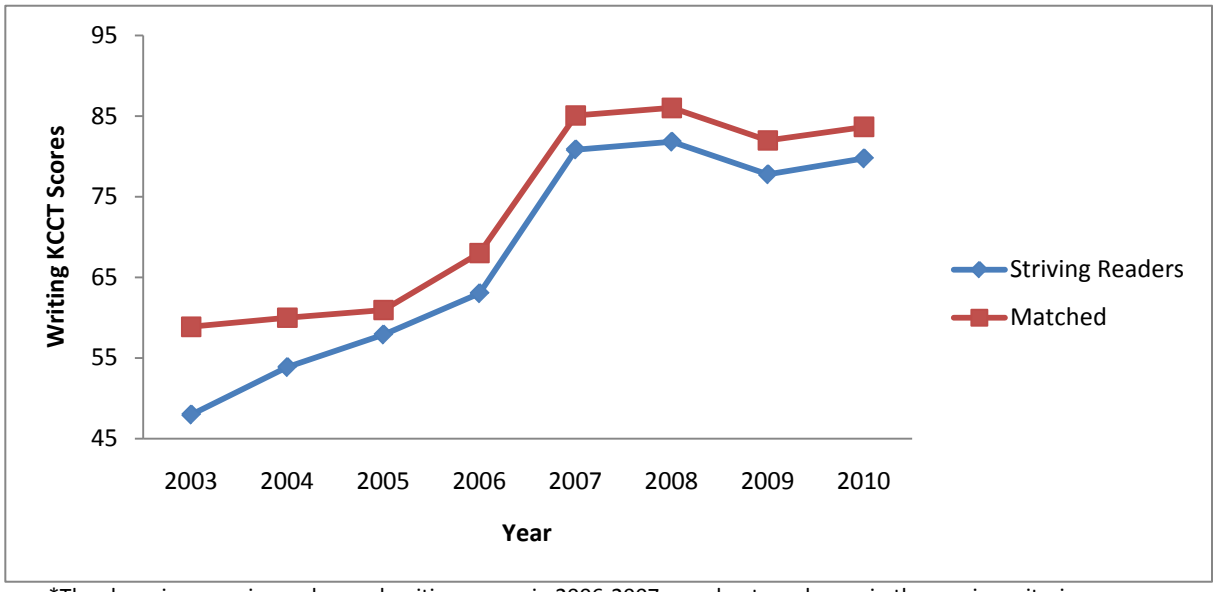
Effect	Estimate	SE	df	t	Pr > |t|
$\beta_0 + \alpha_{0k}$; Intercept	74.3687	2.1127	18	35.2	<.0001
β_1; trtgrp	1.2842	2.9878	136	0.43	0.668
β_2; Time_BMM	-0.657	0.7937	136	-0.83	0.4092
β_3; Spline	15.6663	2.3477	136	6.67	<.0001*
β_4; trtgrp*Spline	-2.8448	3.3201	136	-0.84	0.4006
β_5; trtgrp*Time_B*Spline	0.782	1.1224	136	0.7	0.4872

Writing Achievement

Middle school. The results of middle school SITSMCMR analysis of writing achievement are shown in Figure 2.6 and Table 2.9. As can be seen in both the figure and the table, the matched schools had a significant increase between 2006 and 2007. This "jump" for the matched schools was due to a change in the scoring criteria of the reading KCCT.

Comparing the matched school with the Striving Reader school KCCT scores, there is no significant difference in baseline projections. However, Figure 2.6 shows that the Striving Readers school averages form a positive, linear trend whereas matched schools do not. The disagreement of middle school Striving Reader and matched school scores prior to the intervention again challenge the assumption of the SITSMCMR analysis. There are no significant differences between the Striving Reader and matched school model results postintervention.

Figure 2.6. Middle School Writing KCCT Scores, Striving Readers and Matched Schools Averaged by Year (Spring).



*The sharp increase in on-demand writing scores in 2006-2007 was due to a change in the scoring criteria.

Table 2.9

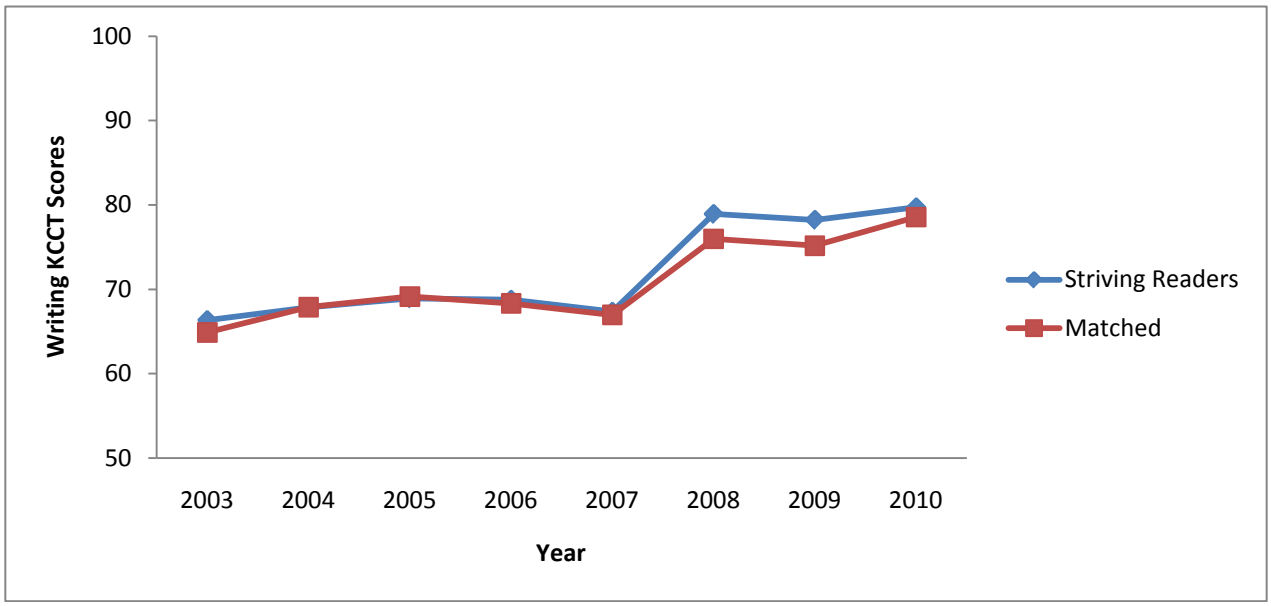
Middle School Writing Achievement SITSMCMR

Difference of Impacts					
Effect	Estimate	SE	df	t	Pr > |t|
$\beta_0 + \alpha_{0k}$; Intercept	61.9441	2.6745	16	23.16	<.0001
β_1; trtgrp	-6.1424	3.8184	119	-1.61	0.1103
β_2; Time_BMM	-0.8276	1.3002	119	-0.64	0.5256
β_3; Spline	24.2915	3.8459	119	8.28	<.0001*
β_4; trtgrp*Spline	1.7717	5.4641	119	0.46	0.6456
β_5; trtgrp*Time_B*Spline	0.09182	1.8387	119	0.05	0.9603

High school. The results of high school SITSMCMR analysis of writing achievement are shown in Figure 2.5 and Table 2.12. Recalling that the high school writing KCCT is given in the fall, the lag will show the first year of intervention and scoring changes in 2007 through 2008. As can be seen in both the figure and the table, the matched schools had a significant increase between 2007 and 2008, which is again due to a change in the scoring criteria of the writing KCCT.

Comparing the matched school with the Striving Reader school KCCT scores, there is no significant difference in baseline projections. The figure shows the Striving Reader school reading achievement is very similar to the matched school achievement prior to the intervention. There are no significant differences between the Striving Reader and matched school model results postintervention.

Figure 2.7. High School Writing KCCT Scores, Striving Readers and Matched Schools Averaged by Year (Spring).



*The sharp increase in scores in on-demand writing (2007-2008) was due to a change in the scoring criteria.

Table 2.10

High School Writing Achievement SITSMCMR Results

Difference of Impacts					
Effect	Estimate	SE	df	t	Pr > |t|
$\beta_0 + \alpha_{0k}$; Intercept	67.4394	2.2923	18	29.42	<.0001
β_1; trtgrp	0.414	3.2418	136	0.13	0.8986
β_2; Time_BMM	1.2966	1.0825	136	1.2	0.2331
β_3; Spline	7.8319	1.5562	136	5.03	<.0001*
β_4; trtgrp*Spline	2.8779	2.2008	136	1.31	0.1932
β_5; trtgrp*Time_B*Spline	-0.9022	1.5309	136	-0.59	0.5566

Cantrell, Almasi, Carter, & Rintamaa (2011)

Summary and Conclusions

This study examined the implementation and impacts of the Danville, KY Striving Readers project on teachers and students in 21 rural middle and high schools. It evaluated the impact of a targeted intervention on students' achievement, strategy use, and motivation, and it investigated the impact of a whole-school literacy model on teachers' efficacy and student achievement. In addition, this report addresses the extent the program was implemented at the professional development and classroom levels.

Over the course of this Striving Readers project, the professional development model was implemented as planned. Participants were provided extended professional development and training through workshops, on-site mentoring, and a literacy certification program for school literacy coaches. Literacy coaches, administrators, and content area teachers achieved high levels of participation in the professional development inputs, overall, for both the targeted intervention and whole-school model.

However, there was more variation in the levels of classroom implementation of the targeted and whole-school interventions. For the targeted intervention, classroom implementation was relatively low in year 1 but improved to high levels in the final years of the project. For the school-wide model, implementation by middle school content teachers was consistently higher than implementation by high school teachers, with middle school teachers implementing at adequate levels consistently.

In terms of project impacts, the Striving Readers project has yielded positive effects for students and teachers. The targeted intervention, the LSC, had a significant impact on ninth-grade students' reading achievement, sixth-grade students' reading strategy use, and sixth- and ninth-grade students' reading motivation. Although analyses of student achievement results did not reveal impacts of the whole-school model on students' reading and writing achievement, the project was successful in influencing teachers' efficacy for literacy teaching in Striving Readers schools over the course of the project. The literacy coaches who implemented the LSC in supplemental classrooms and supported the implementation of the whole-school model in their buildings demonstrated increasingly higher efficacy after the initial year of implementation. Similarly, content area teachers who participated in Striving Readers schools increased their levels of personal and collective efficacy across the years of the project.

Achievement results for the evaluation of the supplemental LSC course suggest the intervention is promising for improving the reading performance of students who are in their first year of high school. Analyses indicate that this intervention had a positive impact on ninth-grade students' reading achievement overall. A closer look at ninth-grade students' achievement revealed that the significant impacts of the LSC were evident for students who were not served by special education. Impacts were not significant for ninth-grade students who were served by special education. This suggests that the LSC is most effective for students who do not have

disabilities and that it may be less effective in improving the achievement of students who do have disabilities.

Although similar achievement results were not noted for sixth-grade students in this evaluation, the LSC did have a significant impact on sixth-grade students' reading strategy use at the < .10 level. Students in the LSC class reported using cognitive reading strategies to a greater extent than students in the control group, which suggests that the LSC strengthens students' knowledge of reading strategy use at this phase of schooling. It is interesting that this impact did not transfer to improved reading achievement for sixth-grade students because students' use of cognitive reading strategies is associated with reading achievement (Alexander & Murphy, 1999; Baker & Brown, 1984; Paris, Lipson, & Wixon, 1983; Pressley & Afflerbach, 1995; Pressley, 2000). Similarly, it is interesting that the LSC did not have an impact on ninth-grade students reported use of strategies given that the intervention did have a positive impact on students' reading achievement.

A strong and consistent finding of this study, for both sixth- and ninth-grade students, is the significant impact of the LSC class on students' reading motivation, overall. Recommendations for improving adolescents' literacy performance tend to include some focus on reading motivation (Biancarosa & Snow, 2004; Alvermann, 2001; Kamil et al., 2008), so it is important to note the effectiveness of the supplemental LSC class in for influencing middle and high school students' reading motivation in positive ways. Research suggests that more motivated readers read more and reach higher levels of achievement (Organisation for Economic Co-operation and Development, 2009), but the increase in reading motivation did not necessarily result in improved reading achievement in this evaluation, at least for sixth grade. However, it is possible that sixth-grade students' increased motivation will pay off in terms of improved reading achievement over time.

The design of this study provides a number of new insights regarding the LSC. First, the study shows promising results for examining the impact of the LSC as a set of coherent strategies rather than studying the impact of each component individually, as has been done in previous research (Bulgren, Hock, Schumaker, & Deshler, 1995; Clark, Deshler, Schumaker, Alley, & Warner, 1984; Lee & Von Colln, 2003; Lenz & Hughes, 1990; Nagel, 1982; Schumaker & Deshler, 1992; Woodruff, Schumaker, & Deshler, 2002). Second, findings from this study suggest that the LSC has positive benefits related to reading achievement, strategy use, and motivation, particularly for students who do not participate in special education. Finally, this study provides empirical evidence about the impact of the LSC using a randomized pretest-posttest control group design with larger numbers of students than had been available in previous studies.

In addition to evaluating the LSC, this study evaluated the impact of ALM, a whole-school literacy model designed to help teachers integrate literacy strategies in the content areas. Interrupted time series analyses of KCCT achievement data did not suggest impacts of the whole-school model on students' reading and writing achievement. These results were not surprising, given how difficult it is to link professional development models for teachers directly to student achievement outcomes. However, the whole-school literacy model did have positive impacts on

content teachers' sense of efficacy for literacy teaching. Teachers' self-efficacy for teaching has been associated with effective classroom practices and higher student achievement (Ashton & Webb, 1986; Gibson & Dembo, 1984; Ross, 1992), so it is likely that this increase in efficacy for teachers resulted in benefits for students not captured by our measures.

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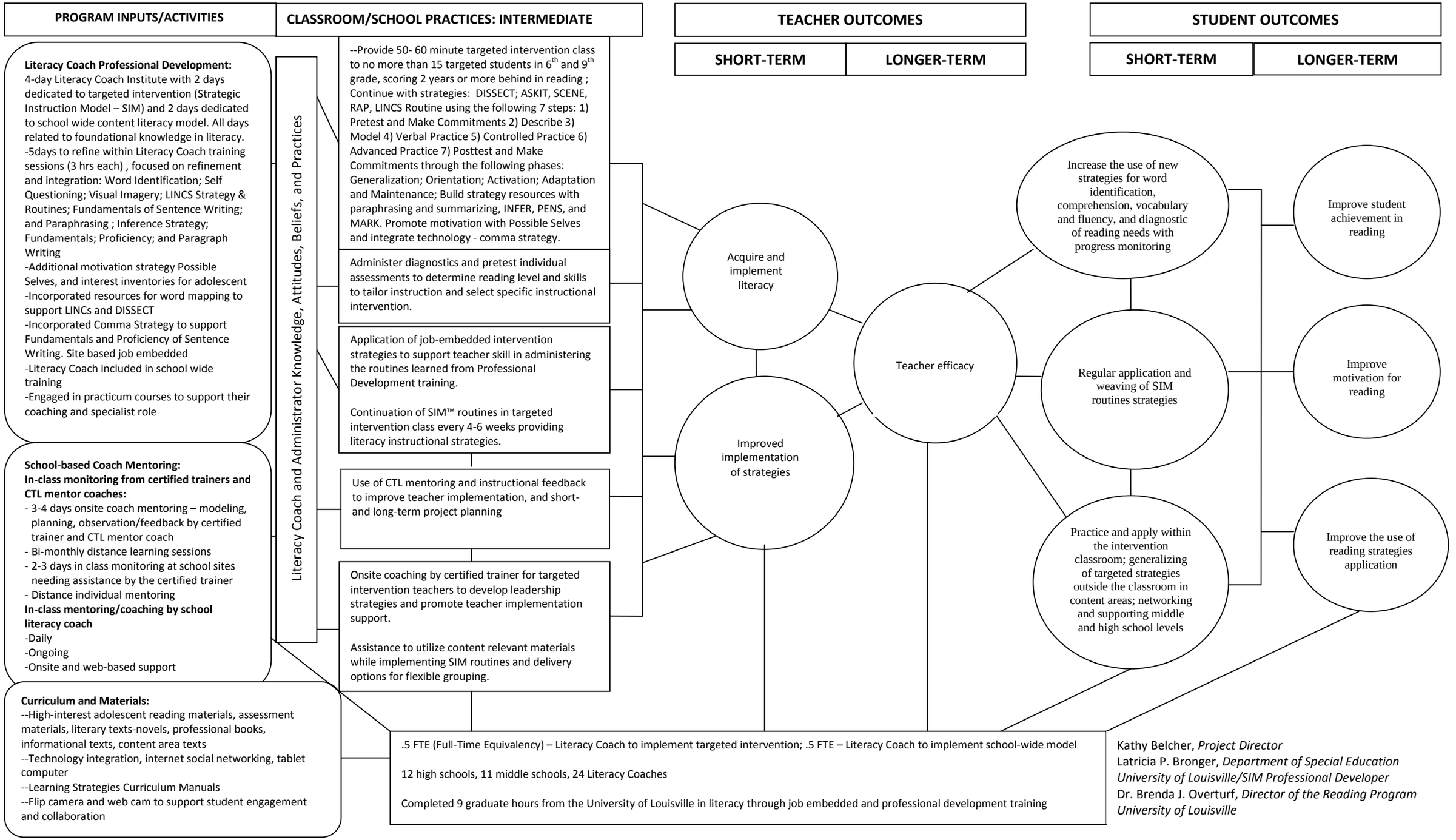
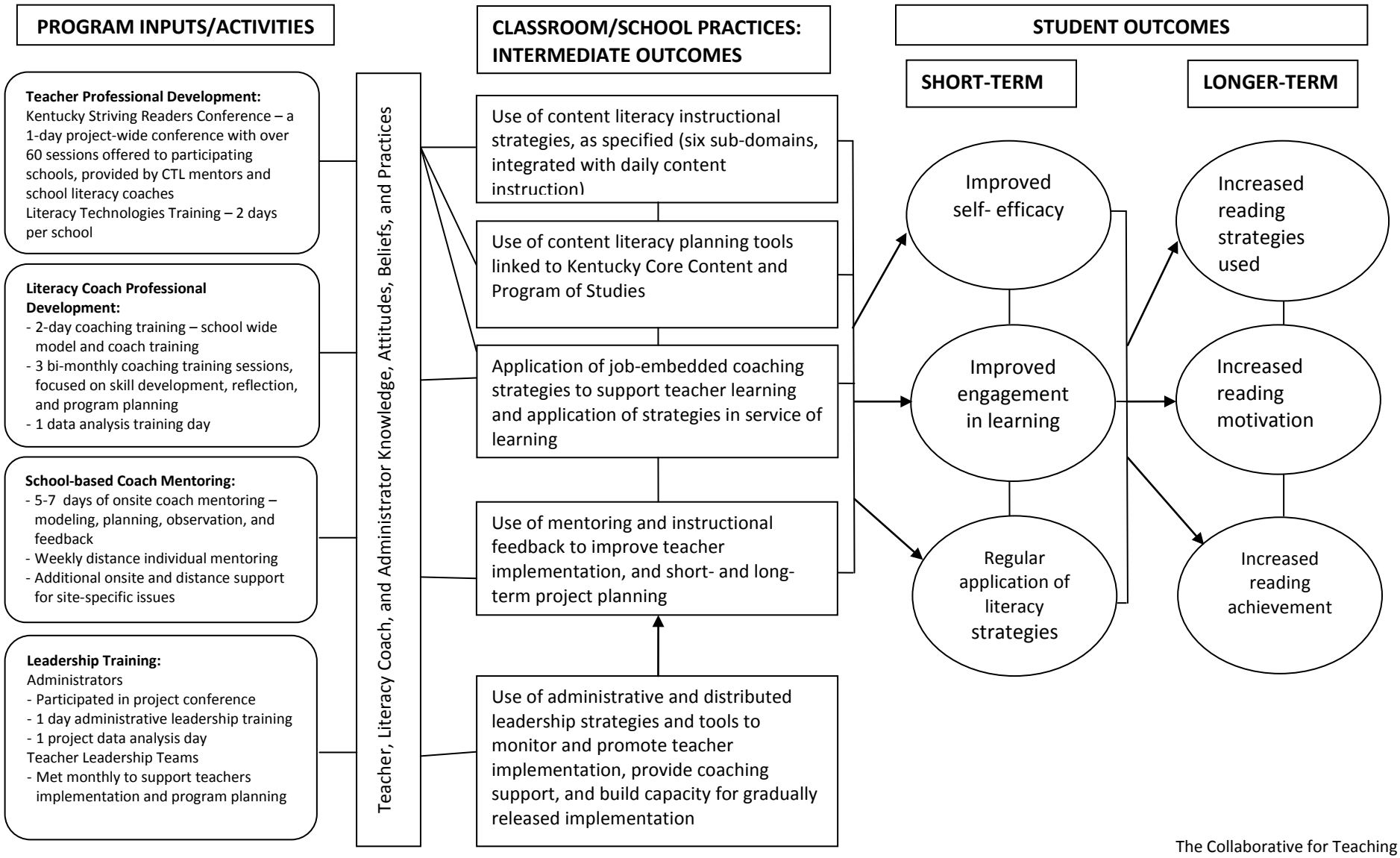
Appendix A: Logic Model for the Targeted Intervention for Kentucky Content Literacy Consortium – Implementation Year 4 (2009-2010)



Kathy Belcher, *Project Director*
Latricia P. Bronger, *Department of Special Education University of Louisville/SIM Professional Developer*
Dr. Brenda J. Overturf, *Director of the Reading Program University of Louisville*

Appendix B: Logic Model for the Collaborative for Teaching and Learning Adolescent Literacy Model – Implementation Year 4 (2009-2010)



The Collaborative for Teaching and Learning
2008

Appendix C
Summary of HLM Model Results for Student Achievement

Exhibit Table 1
6th Grade Student Achievement, NCE Score:-Summary of Model Results

Fixed Effects					
Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	25.612	25.7484	6	0.99	0.3583
School: KCCT reading scores, base year (spring 2006)	0.00283	0.0843	1116	0.03	0.9732
School: Percent white students	-0.1301	0.1975	1116	-0.66	0.5103
School: Percent black students	-0.3111	0.2891	1116	-1.08	0.2821
School: Percent free/reduced	-0.6492	0.0785	1116	-0.83	0.4086
School: Percent with disabilities	0.3325	0.2936	1116	1.13	0.2576
School: Average enrollment	-0.0003	0.0036	1116	-0.08	0.9346
Student: Fall GRADE score	0.6232	0.0416	1116	14.98	<.0001
Student: Intervention class	1.0669	0.7162	1116	1.49	0.1366
Student: Gender, male	-0.1270	0.7336	1116	-0.17	0.8625
Student: Ethnicity, minority	-1.4492	1.1607	1116	-1.25	0.2122
Student: SES, free/reduced lunch	-1.3270	0.7930	1116	-1.67	0.0945
Student: Special Education	-4.2625	0.8483	1116	-5.02	<.0001

Random Effects		
Variance Component	Estimate	ICC
Level 2 – School	1.416	.001
Level 1 – Student	144.09	

Random Effects (From Unconditional Model[a])		
Variance Components	Variance	ICC
Level 2 –School	2.126	.011
Level 1 – Student	191.23	(24.7% level 1 variance explained by covariates)

a) The unconditional model is a two-level model with students (level-1) nested in schools (level-2) and only an intercept term on the right-hand side of the model.

Exhibit Table 2
6th Grade Student Achievement, NCE Score: Summary of Model Results – Non-Special Education Students

Fixed Effects

Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	66.4292	30.0631	6	2.21	0.0692
School: KCCT reading scores, base year (spring 2006)	0.02050	0.09611	765	0.21	0.8312
School: Percent white students	-0.4768	0.2450	765	-1.95	0.0520
School: Percent black students	-0.7747	0.3494	765	-2.22	0.0269
School: Percent free/reduced	-0.06176	0.08324	765	-0.74	0.4584
School: Percent with disabilities	-0.09163	0.3100	765	-0.30	0.7677
School: Average enrollment	-0.00073	0.003969	765	-0.18	0.8537
Student: Fall GRADE score	0.6309	0.05344	765	11.81	<.0001
Student: Intervention class	1.0210	0.8642	765	1.18	0.2378
Student: Gender, male	0.1182	0.8828	765	0.13	0.8935
Student: Ethnicity, minority	-3.0984	1.4533	765	-2.13	0.0333
Student: SES, free/reduced lunch	-0.7517	0.9457	765	-0.79	0.4269

Random Effects

Variance Component	Estimate	ICC
Level 2 – School	0.789	0.005
Level 1 – Student	145.50	

Exhibit Table 3
6th Grade Student Achievement, NCE Score: Summary of Model Results – Special Education Students

Fixed Effects

Effect	Estimate	SE	df	t value	Pr>|t|
Intercept	-12.6552	34.5139	5	-0.37	0.7289
School: KCCT reading scores, base year (spring 2006)	0.04754	0.1088	335	0.44	0.6624
School: Percent white students	0.1903	0.2633	335	0.72	0.4702
School: Percent black students	0.1457	0.4317	335	0.34	0.7360
School: Percent free/reduced	-0.07664	0.09809	335	-0.78	0.4352
School: Percent with disabilities	0.8502	0.3672	335	2.32	0.0212
School: Average enrollment	0.000719	0.004401	335	0.16	0.8702
Student: Fall GRADE score	0.5933	0.06657	335	8.91	<.0001
Student: Intervention class	1.2622	1.2907	335	0.98	0.3288
Student: Gender, male	-1.1440	1.3529	335	-0.85	0.3984
Student: Ethnicity, minority	-1.7941	1.9867	335	-0.90	0.3671
Student: SES, free/reduced lunch	2.5714	1.4459	335	1.78	0.0762

Random Effects

Variance Component	Estimate	ICC
Level 2 – School	0	0
Level 1 – Student	140.50	

Exhibit Table 4

9th Grade Student Achievement, NCE Score:-Summary of Model Results

Fixed Effects					
Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	34.3669	48.4645	5	0.71	0.5099
School: KCCT reading scores, base year (spring 2006)	0.0545	0.383	1109	0.14	0.8870
School: Percent white students	-0.3265	0.567	1109	-0.58	0.5653
School: Percent black students	-0.6074	0.503	1109	-1.21	0.2273
School: Percent free/reduced	0.0476	0.249	1109	0.19	0.8488
School: Percent with disabilities	1.0117	1.625	1109	0.62	0.5338
School: Average enrollment	-0.0074	0.017	1109	-0.43	0.6676
Student: Fall NCE scores	0.6283	0.049	1109	12.62	<.0001
Student: Intervention class	1.6852	0.785	1109	2.15	0.0321
Student: Gender, male	-0.1419	0.8032	1109	-0.18	0.8598
Student: Ethnicity, minority	-2.0685	1.375	1109	-1.50	0.1328
Student: SES, free/reduced lunch	-0.4319	0.8407	1109	-0.51	0.6075
Student: Special Education	-4.4435	0.932	1109	-4.76	<.0001

Random Effects		
Variance Components	Variance	ICC
Level 2 – School	3.094	.018
Level 1 – Student	171.34	

Random Effects (From Unconditional Model[a])		
Variance Components	Variance	ICC
Level 2 –School	0	0
Level 1 – Student	207.37	(17.4% level 1 variance explained by covariates)

a) The unconditional model is a two-level model with students (level-1) nested in schools (level-2) and only an intercept term on the right-hand side of the model.

Exhibit Table 5
9th Grade Student Achievement, NCE Score: Summary of Model Results – Non-Special Education Students

Fixed Effects

Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	6.2524	49.5195	5	0.13	0.9044
School: KCCT reading scores, base year (spring 2006)	0.08367	0.3593	810	0.23	0.8159
School: Percent white students	0.03744	0.5761	810	0.06	0.9482
School: Percent black students	-0.07687	0.5459	810	-0.14	0.8880
School: Percent free/reduced	-0.01057	0.2301	810	-0.05	0.9634
School: Percent with disabilities	0.7299	1.5299	810	0.48	0.6334
School: Average enrollment	-0.00570	0.01609	810	-0.35	0.7233
Student: Fall GRADE score	0.5876	0.05971	810	9.84	<.0001
Student: Intervention class	2.6839	0.8852	810	3.03	0.0025
Student: Gender, male	0.3322	0.9058	810	0.37	0.7139
Student: Ethnicity, minority	-2.2698	1.5783	810	-1.44	0.1508
Student: SES, free/reduced lunch	-0.1293	0.9298	810	-0.14	0.8895

Random Effects

Variance Component	Estimate	ICC
Level 2 – School	1.416	.010
Level 1 – Student	144.09	

Exhibit Table 6
9th Grade Student Achievement, NCE Score: Summary of Model Results – Special Education Students

Fixed Effects

Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	70.6668	84.1211	4	0.84	0.4482
School: KCCT reading scores, base year (spring 2006)	-0.2418	0.7027	284	-0.34	0.7311
School: Percent white students	-0.6600	1.0006	284	-0.66	0.5101
School: Percent black students	-1.2580	0.8620	284	-1.46	0.1456
School: Percent free/reduced	0.3271	0.4607	284	0.71	0.4782
School: Percent with disabilities	2.1923	2.9246	284	0.75	0.4541
School: Average enrollment	-0.01583	0.03114	284	-0.51	0.6115
Student: Fall GRADE score	0.7163	0.09546	284	7.50	<.0001
Student: Intervention class	-1.0123	1.6891	284	-0.60	0.5494
Student: Gender, male	1.2653	1.7708	284	0.71	0.4755
Student: Ethnicity, minority	-2.0521	2.8193	284	-0.73	0.4673
Student: SES, free/reduced lunch	-1.4142	1.9120	284	-0.74	0.4601

Random Effects

Variance Component	Estimate	ICC
Level 2 – School	9.0567	0.043
Level 1 – Student	200.41	

Exhibit Table 7
6th Grade Student Reading Strategy Use; MARSI Scores: - Summary of Model Results

Fixed Effects					
Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	4.1069	1.428	7	2.87	0.0238
School: KCCT reading scores, base year (spring 2006)	0.0073	0.004	809	1.72	0.0866
School: Percent white students	-0.0217	0.0121	809	-1.79	0.0743
School: Percent black students	-0.0381	0.018	809	-2.14	0.0323
School: Percent free/reduced lunch	-0.0016	0.004	809	-0.44	0.6589
School: Percent with disabilities	-0.0231	0.014	809	-1.61	0.1075
School: Average enrollment	-0.0002	0.0001	809	-0.97	0.3337
Student: Fall Marsi score	0.3526	0.034	809	10.25	<.0001
Student: Intervention class	0.0857	0.044	809	1.91	0.0565
Student: Gender, male	-0.0954	0.045	809	-2.08	0.0379
Student: Ethnicity, minority	0.1058	0.071	809	1.48	0.1382
Student: SES, free/reduced lunch	0.0984	0.048	809	2.02	0.0439
Student: Special Education	0.0382	0.052	809	0.75	0.4552

Random Effects		
Variance Components	Estimate	ICC
Level 2 – School	0.0000	0.000
Level 1 – Student	0.414	

Exhibit Table 8
9th Grade Student Reading Strategy Use; MARSI Scores: - Summary of Model Results

Fixed Effects					
Effect	Estimate	Standard Error	df	t value	Pr>|t|
Intercept	2.8309	2.994	5	0.95	0.3878
School: KCCT reading scores, base year (spring 2006)	-0.0196	0.024	691	-0.8	0.4159
School: Percent white students	-0.0049	0.035	691	-0.14	0.8897
School: Percent black students	-0.0164	0.031	691	-0.52	0.6009
School: Percent free/reduced lunch	0.0220	0.016	691	1.14	0.1584
School: Percent with disabilities	-0.0196	0.024	691	-0.81	0.4159
School: Average enrollment	-0.003	0.001	691	-0.29	0.7749
Student: Fall MARSI score	0.4287	0.038	691	11.20	<.0001
Student: Intervention student	0.0682	0.051	691	1.32	0.1860
Student: Gender, male	-0.1704	0.053	691	-3.20	0.0015
Student: Ethnicity, minority	0.2664	0.084	691	3.13	0.0018
Student: SES, free/reduced lunch	-0.1138	0.054	691	-2.08	0.0378
Student: Special Education	-0.0112	0.062	691	-0.18	0.8557

Random Effects		
Variance Components	Estimate	ICC
Level 2 – School	0.010	0.022
Level 1 – Student	0.462	

Exhibit Table 9
6th Grade Student Motivation; MRQ Scores: - Summary of Model Results

Fixed Effects					
Effect	Estimate	SE	df	t value	Pr>|t|
Intercept	3.1504	1.305	7	2.41	0.0466
School: KCCT reading scores, base year (spring 2006)	0.0051	0.004	807	1.25	0.2107
School: Percent white students	-0.017	0.010	807	-1.64	0.1009
School: Percent black students	-0.0253	0.015	807	-1.68	0.0938
School: Percent free/reduced lunch	0.0036	0.004	807	0.95	0.3421
School: Percent with disabilities	-0.0232	0.014	807	-1.60	0.1092
School: Average enrollment	8.913	0.0001	807	0.05	0.9607
Student: Fall MRQ scores	0.3571	0.034	807	10.41	<.0001
Student: Intervention class	0.0746	0.030	807	2.42	0.0156
Student: Gender, male	-0.0391	0.031	807	-1.23	0.2181
Student: Ethnicity, minority	0.0530	0.049	807	1.08	0.2827
Student: SES, free/reduced lunch	0.0333	0.0336	807	0.99	0.3221
Student: Special Education	-0.0127	0.035	807	-0.36	0.7207

Random Effects		
Variance Components	Estimate	ICC
Level 2 –School	0.004	0.019
Level 1 – Student	0.195	

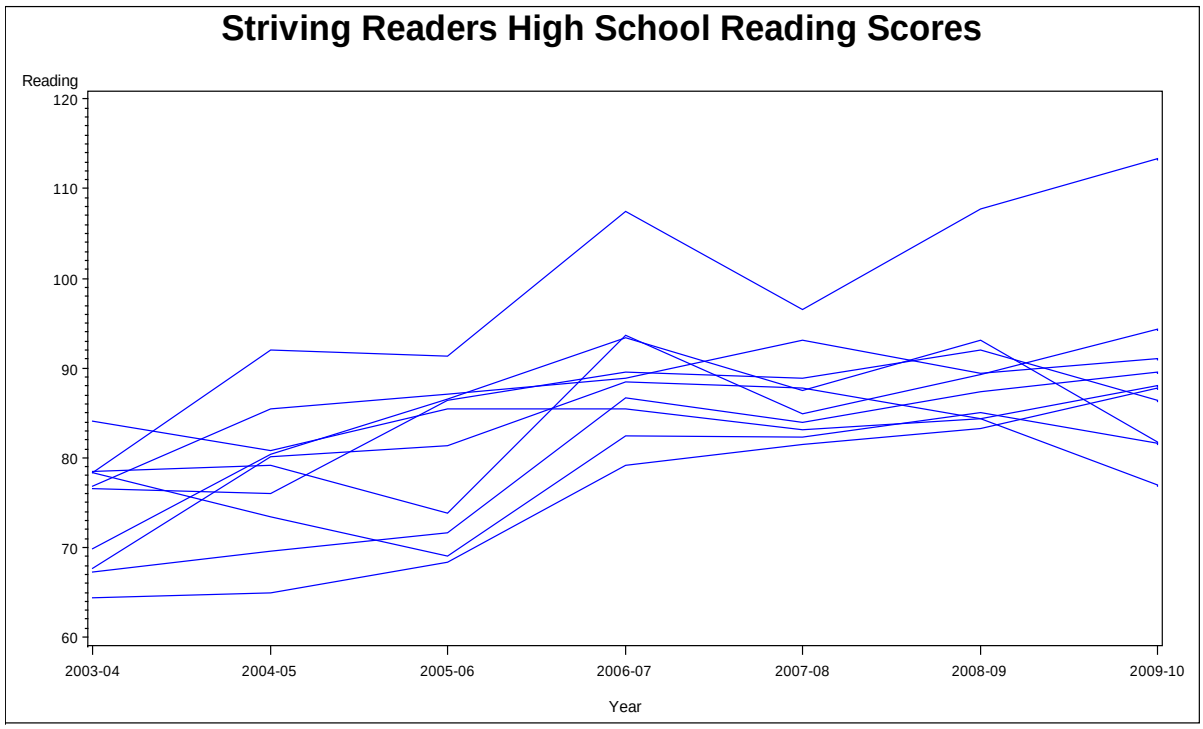
Exhibit Table 10
9th Grade Student Motivation; MRQ Scores: - Summary of Model Results

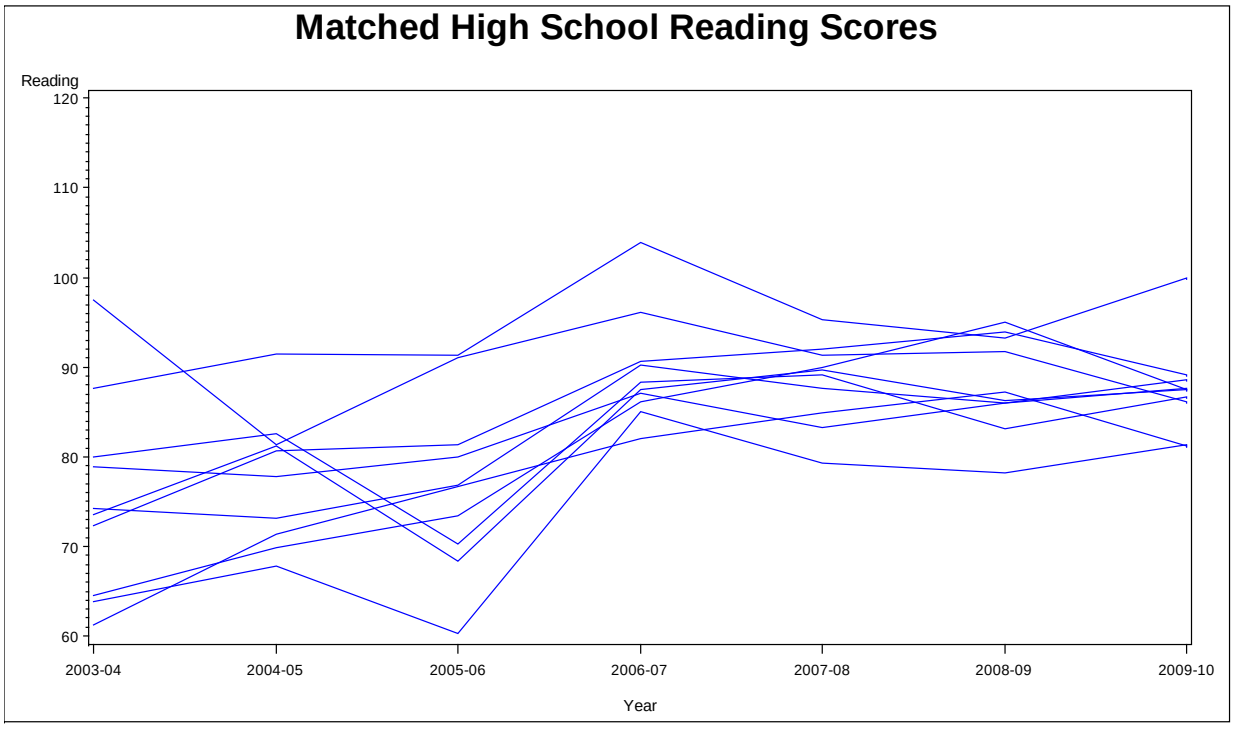
Fixed Effects					
Effect	Estimate	SE	df	t value	Pr>|t|
Intercept	2.0876	1.465	5	1.42	0.2137
School: KCCT reading scores, base year (spring 2006)	-0.0155	0.046	689	-0.33	0.7401
School: Percent white students	-0.0078	0.017	689	-0.46	0.6486
School: Percent black students	-0.0041	0.016	689	-0.25	0.8035
School: Percent free/reduced lunch	0.0111	0.007	689	1.60	0.1110
School: Percent with disabilities	-0.0155	0.047	689	-0.33	0.7401
School: Average enrollment	0.0002	0.0004	689	0.40	0.6880
Student: Fall MRQ scores	0.1502	0.038	689	13.34	<.0001
Student: Intervention class	0.1193	0.034	689	3.45	0.0006
Student: Gender, male	-0.1193	0.035	689	-3.35	0.0008
Student: Ethnicity, minority	0.1346	0.057	689	2.36	0.0187
Student: SES, free/reduced lunch	-0.0677	0.036	689	-1.85	0.0642
Student: Special Education	-0.0713	0.041	689	-1.71	0.0869

Random Effects		
Variance Components	Estimate	ICC
Level 2 – School	0.000	0.000
Level 1 – Student	0.209	

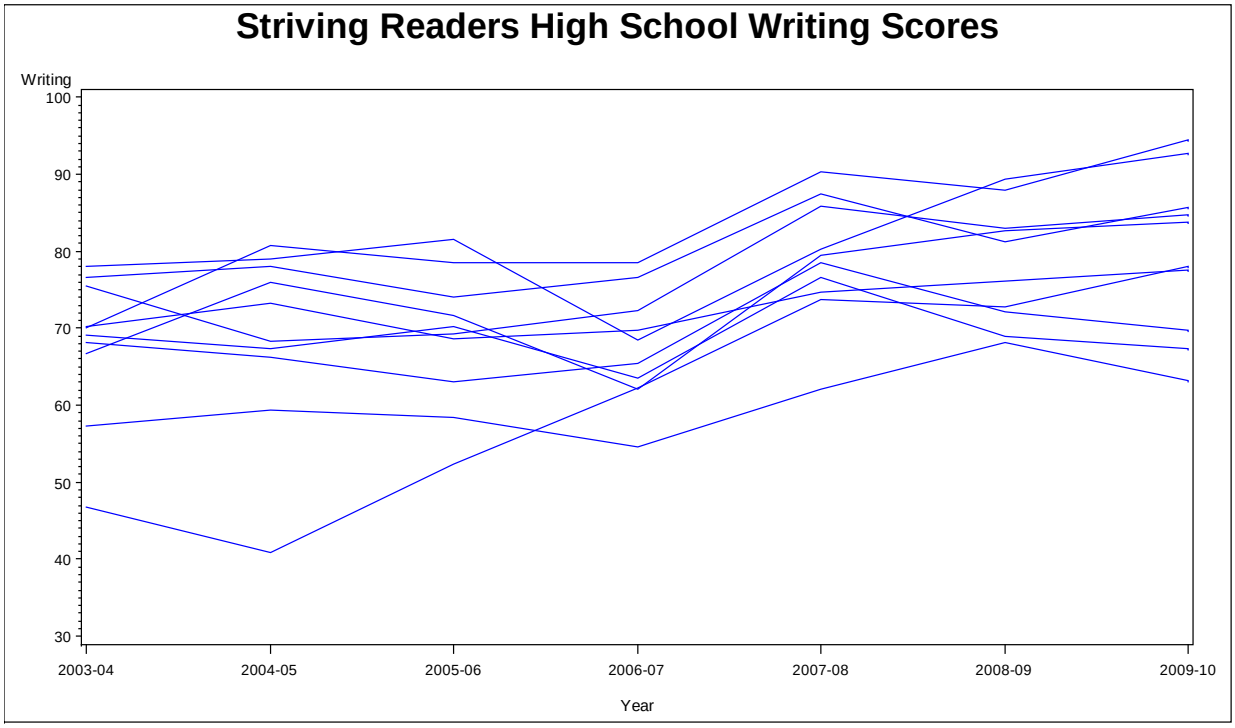
APPENDIX D
School KCCT Scores for Striving Readers and Matched Schools

Figure D 1





Cantrell, Almasi, Carter, & Rintamaa (2011)


Striving Readers High School Writing Scores
Writing
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50
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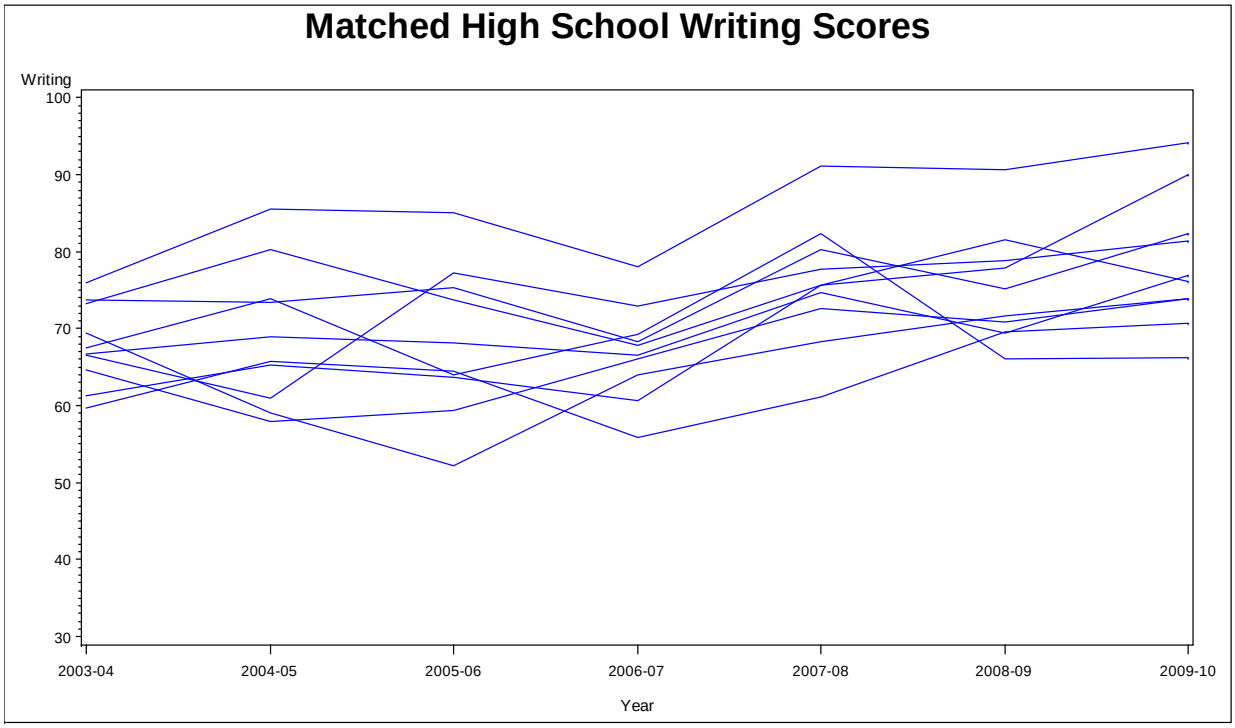
30
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
Year


Matched High School Writing Scores
Writing
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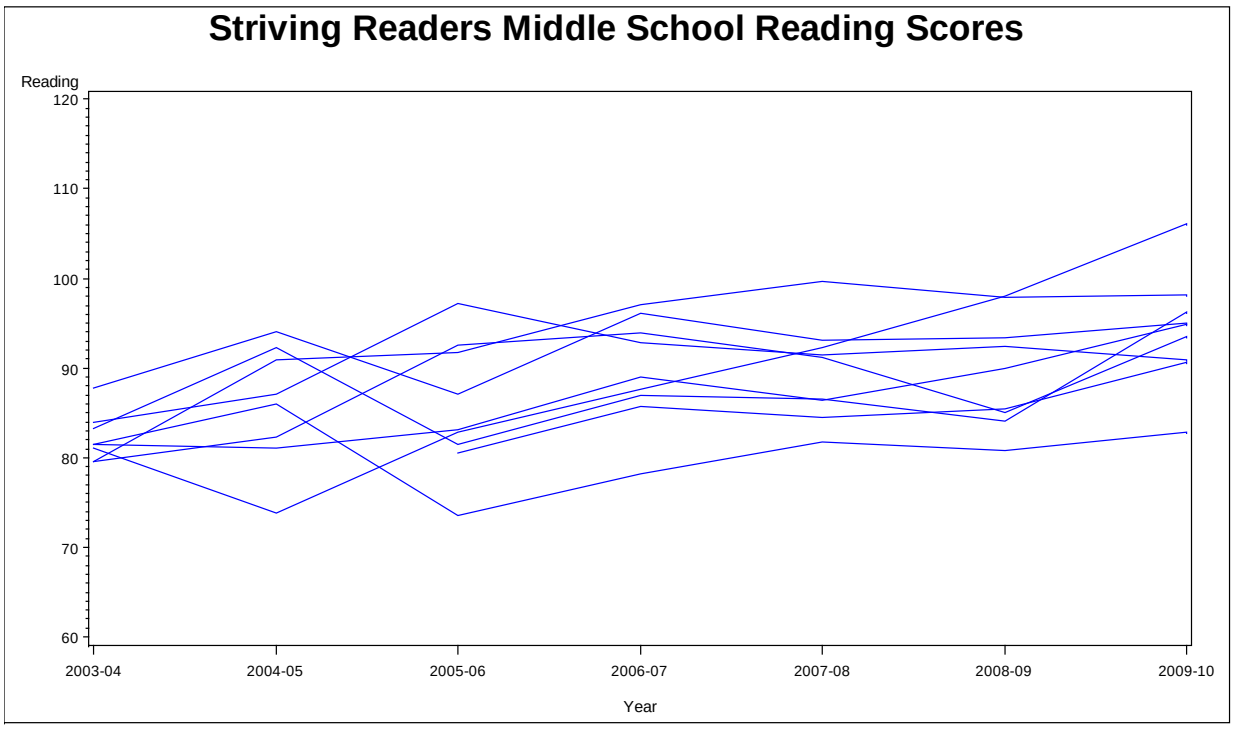
Year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2005-06
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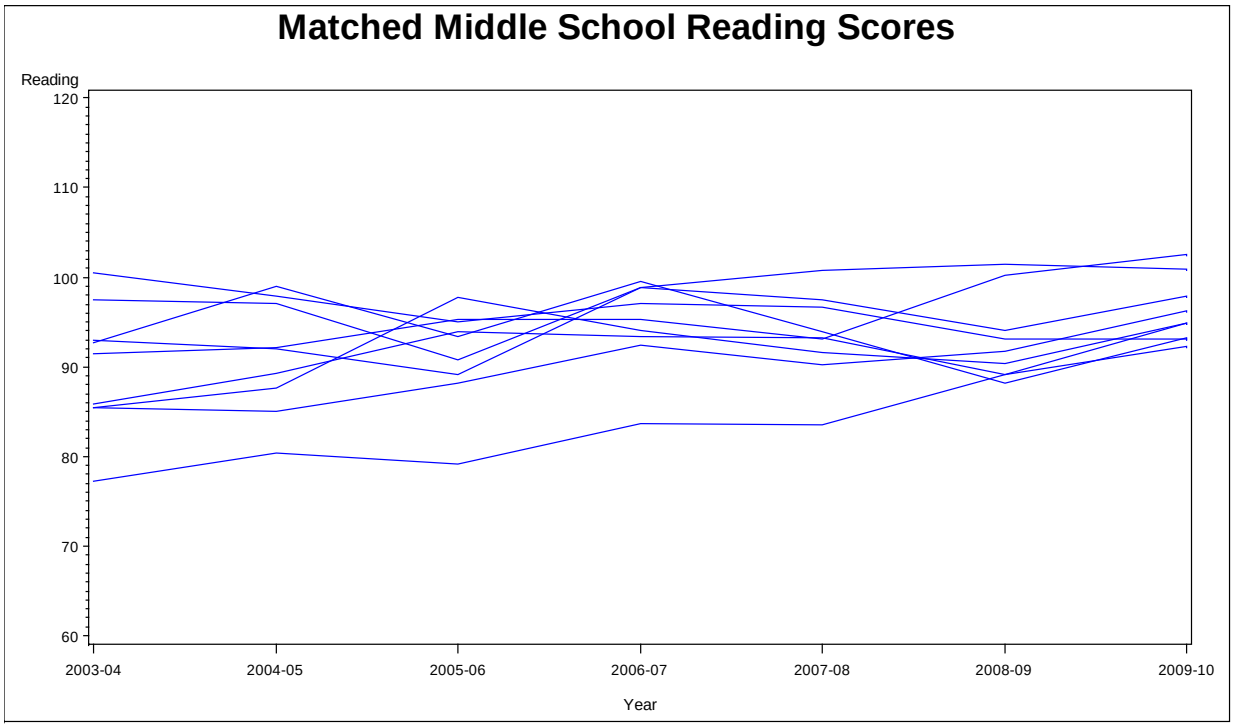
2009-10
Year


Matched Middle School Reading Scores
Reading
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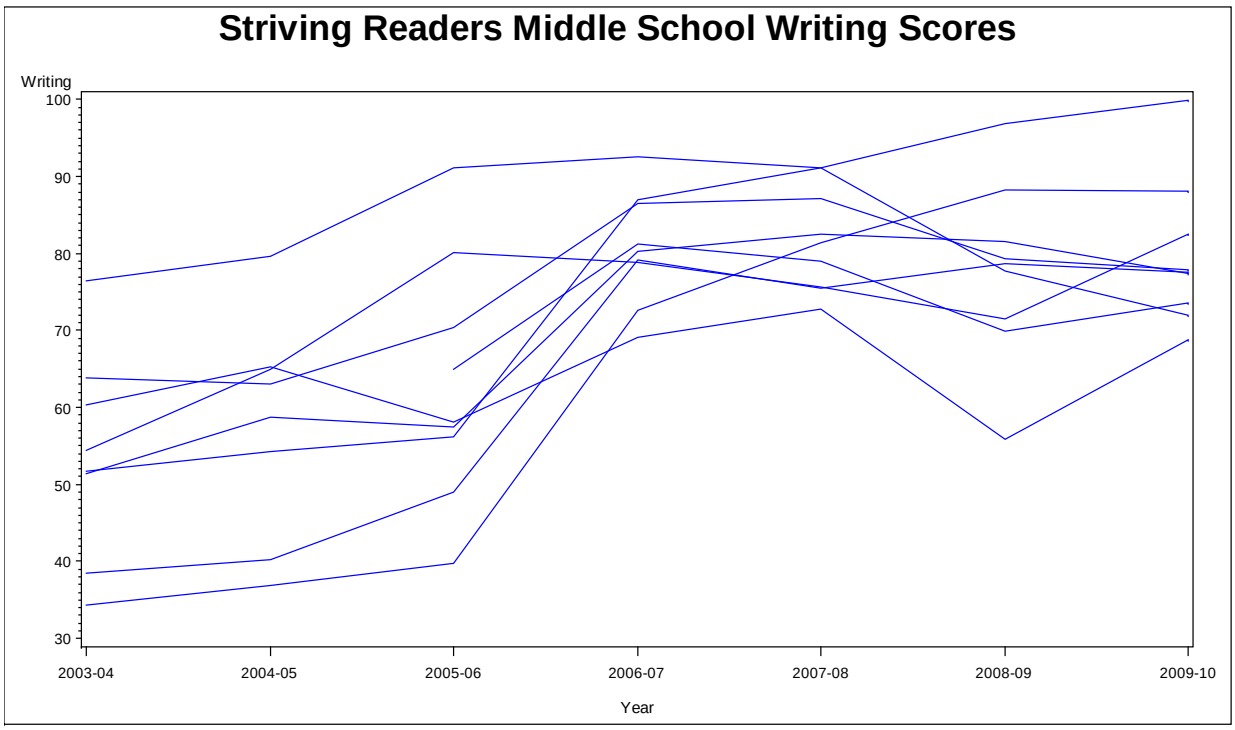
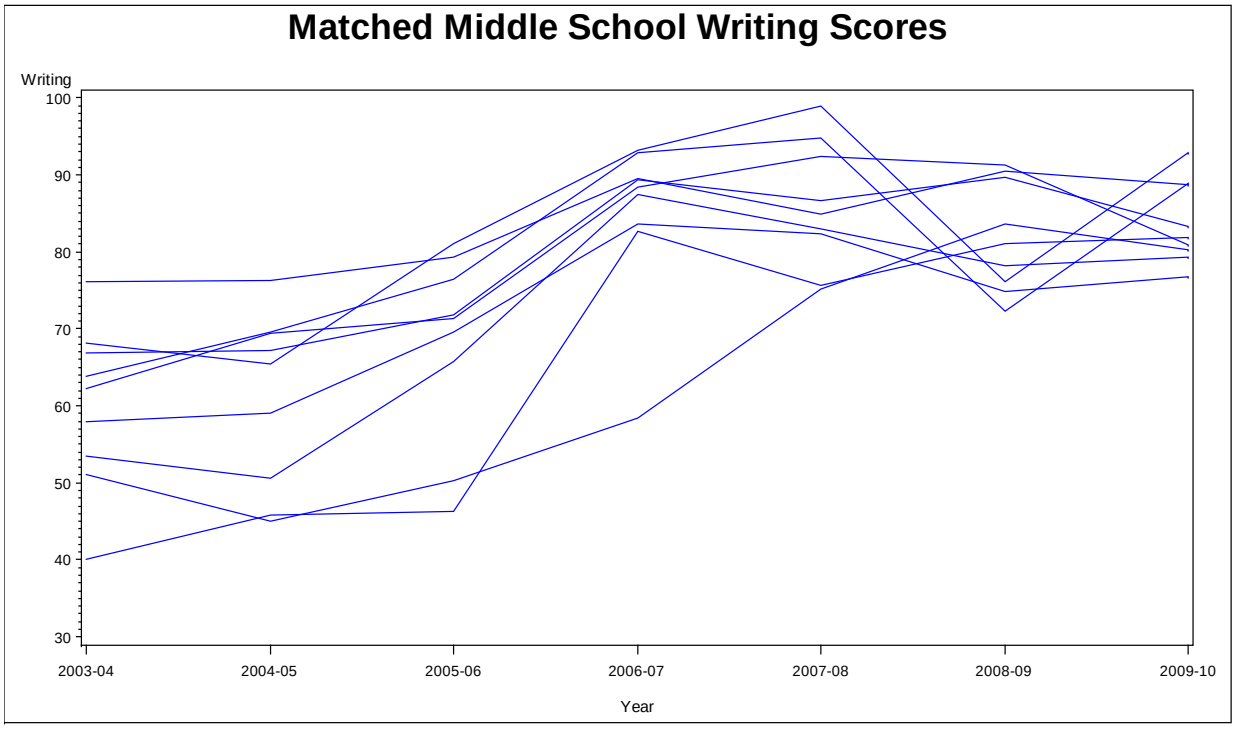
Year





Cantrell, Almasi, Carter, & Rintamaa (2011)

Appendix E
Measures

COLLABORATIVE CENTER FOR LITERACY DEVELOPMENT

Student Reading Strategies Inventory

Listed below are statements about what people do when they read academic or school-related materials such as textbooks or library books. There are no right or wrong answers. Please answer as honestly and truthfully as you can and provide an answer for each question.

Your answers on this survey are completely confidential.
Information about this survey will be released in summary form only.

1 = I never or almost never do this
2 = I do this only occasionally
3 = I sometimes do this (about 50% of the time)
4 = I usually do this
5 = I always or almost always do this

1. I have a purpose in mind when I read.
2. I take notes while reading to help me understand what I read.
3. I think about what I know to help me understand what I read.
4. I preview the text to see what it's about before reading it.
5. When text becomes difficult, I read aloud to help me understand what I read.
6. I summarize what I read to reflect on important information in the text.
7. I think about whether the content of the text fits my reading purpose.
8. I read slowly but carefully to be sure I understand what I'm reading.
9. I discuss what I read with others to check my understanding.
10. I skim the text first by noting characteristics like length and organization.
11. I try to get back on track when I lose concentration.

Cantrell, Almasi, Carter, & Rintamaa (2011)

12. I underline or circle information in the text to help me remember it.

13. I adjust my reading speed according to what I'm reading.

1 = I never or almost never do this
2 = I do this only occasionally
3 = I sometimes do this (about 50% of the time)
4 = I usually do this
5 = I always or almost always do this

14. I decide what to read closely and what to ignore.

15. I use reference materials such as dictionaries to help me understand what I read.

16. When text becomes difficult, I pay closer attention to what I'm reading.

17. I use tables, figures, and pictures in text to increase my understanding.

18. I stop from time to time and think about what I'm reading.

19. I use context clues to help me better understand what I'm reading.

20. I paraphrase (restate ideas in my own words) to better understand what I read.

21. I try to picture or visualize information to help remember what I read.

22. I use typographical aids like boldface, and italics to identify key information.

23. I critically analyze and evaluate the information presented in the text.

24. I go back and forth in the text to find relationships among ideas in it.

25. I check my understanding when I come across conflicting information.

26. I try to guess what the material is about when I read.

27. When text becomes difficult, I reread to increase my understanding.

28. I ask myself questions I like to have answered in the text.

29. I check to see if my guesses about the text are right or wrong.

30. I try to guess the meaning of unknown words or phrases.

Please mark your responses to these statements on the scantron sheet:

31. I would rate my overall reading ability as:
1) excellent 2) average 3) not so good

32. I would rate my overall academic performance in school as:
1) excellent 2) average 3) not so good

Motivation for Reading Questionnaire for Adolescents*, (Cantrell, Almasi, & Rintamaa © 2006) p.3.

COLLABORATIVE CENTER FOR LITERACY DEVELOPMENT

Striving Readers Motivation for Reading Questionnaire for Adolescents*

1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

33. I visit the library often with friends or family.
34. I like hard, challenging books.
35. I know that I will do well reading in my classes next year.
36. If the teacher discusses something interesting I might read more about it.
37. I like it when the questions in books make me think.
38. I read about my hobbies to learn more about them.
39. I am a good reader.
40. I enjoy reading magazines.
41. I often read to other people.
42. I like being the only one who knows an answer in something we read.
43. I read to learn new information about topics that interest me.
44. My friends sometimes tell me I am a good reader.
45. I learn more from reading than most students in the class.
46. I like to read about new things.
47. I like hearing the teacher say I read well.
48. I sometimes read to my parents.
49. My friends and I like to trade things to read.

1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

Cantrell, Almasi, Carter, & Rintamaa (2011)

50. I don't like reading something when the words are too difficult.
51. I make pictures in my mind when I read.
52. I always read exactly as the teacher wants.
53. I usually learn difficult things by reading.
54. I don't like vocabulary questions.
55. Complicated texts are no fun to read.
56. I am happy when someone recognizes my reading.
57. I feel like I make friends with people in good books.
58. My parents often tell me what a good job I am doing with reading.
59. Finishing every reading assignment is very important to me.
60. I talk to my friends about what I am reading.
61. If I am reading an interesting topic I sometimes lose track of time.
62. I like to get compliments for my reading.
63. Grades are a good way to see how well you read.
64. I like to help my friends with the reading we do for school.
65. I read to improve my grades.
66. I enjoy a long, involved story or fiction book.
67. I like to tell my family about what I am reading.
68. I try to get more answers right than friends.
69. If the project is interesting, I can read difficult material.

1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

70. I enjoy reading books about people in different countries.
71. I enjoy searching for information on the internet.

Cantrell, Almasi, Carter, & Rintamaa (2011)

72. I always try to finish my reading on time.
73. If a book is interesting, I don't care how hard it is to read.
74. I like to finish my reading before other students.
75. In comparison to my other school work I am best at reading.
76. I am willing to work hard to read better than my friends.
77. I don't like it when there are too many new ideas in the text.
78. It is very important to me to be a good reader.
79. In comparison to other activities I do, it is very important to me to be a good reader.
80. I am a very good reader.
81. I put forth my best effort on this survey.
82. This survey was easy for me.

Thank you for taking time for to fill out this survey!

*based on the Motivation for Reading Questionnaire contained in:

Baker, L., & Wigfield, A. (1999). Dimensions of children's motivation for reading and their relations to reading activity and reading achievement. *Reading Research Quarterly, 34*, 452-477.

Wigfield, A., & Guthrie, J. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology, 89*, 420-432.

COLLABORATIVE CENTER FOR LITERACY DEVELOPMENT

Striving Readers Teacher Survey*

Name *(please print)* _____ **Date**_____

School _____

E-mail address (school)_____

Directions: ***Please completely fill in each circle.***
Thank you for completing this questionnaire. To ensure your privacy, information from this survey will be released in summary form only.

PART I. Teacher Background

1. What subject(s) do you currently teach? (include all)
   ○ Language Arts/Speech ○ Science ○ Social Studies
   ○ Special Ed ○ Reading ○ Mathematics

   ○ Administrator (*If you are an Administrator, please fill in circle and skip to Part II*)
   ○ Other _____

2. What subject(s) is your primary teaching responsibility?
   ○ Language Arts/Speech ○ Science ○ Social Studies ○ Mathematics
   ○ Special Ed ○ Reading ○ Other _____

3. What is your gender: ○ male ○ female

4. Ethnicity (optional): ○ Caucasian ○ African American ○ Hispanic ○ Asian American
   ○ Native Americans ○ Other

5. How many years of teaching experience do you have?
   ○ 0 – 3 years ○ 4 - 7 years ○ 8 – 11 years ○ 12 – 15 years ○ 16 years and up

6. What grade level(s) do you teach in school? (include all)
   ○ 6th ○ 7th ○ 8th ○ 9th ○ 10th ○ 11th ○ 12th ○ Other_____

7. What is the highest degree you have earned?
   ○ Bachelor's ○ Master's ○ Specialist/Rank I ○ Doctorate

8. How many years ago did you receive your highest academic degree?
   ○ 0 – 3 years ○ 4 - 7 years ○ 8 – 11 years ○ 12 – 15 years ○ 16 years and up

9. How many years have you been teaching in your present school?
   ○ 0 – 3 years ○ 4 - 7 years ○ 8 – 11 years ○ 12 – 15 years ○ 16 years and up

10. Are you presently teaching under emergency certification? ○ yes ○ no

11. Have you had other types of literacy-focused professional development? ○ yes ○ no

12. When were you first hired as a teacher at your school? Month_____Year _____

13. What is your area of certification? (include all)_
   ○ Language Arts ○ Science ○ Social Studies
   ○ Special/Speech Ed ○ Reading ○ Mathematics

PART II. Teacher Beliefs

This survey focuses on **reading**, which may be defined as constructing meaning from a variety of texts, including books, charts, graphs, technology, etc.

Please use the scale below to answer the questions that follow. Please provide a response to every question. If none of the alternatives provided for a question corresponds exactly to your position or opinion, select the alternative that comes closest to the answer you would like to give. **If you teach more than one subject area, please think about the subject that is your primary responsibility when answering the questions**.

1=Strongly Agree
2=Moderately Agree
3=Agree slightly more than disagree
4=Disagree slightly more than agree
5=Moderately Disagree
6=Strongly Disagree

		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
31.	Factors beyond my control have	○	○	○	○	○	○

		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
	a greater influence on my students' ability to read than I do.	1	2	3	4	5	6
32.	I am good at helping all the students in my classes make significant improvement in their reading comprehension.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
33.	Some students are not going to make a lot of progress this year in reading, no matter what I do.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
34.	I am certain that I am making a difference in the lives of my students when it comes to reading.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
35.	There is little I can do to ensure that all my students make significant progress in reading this year.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
36.	I can deal with almost any reading problem.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
37.	The amount a student can read is primarily related to family background.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
38.	If students are not willing to read, I can do little about it.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
39.	If parents would do more for their children's reading, I could do more.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
10.	If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of reading difficulty.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
1.	If I really try hard, I can get through to even the most difficult or unmotivated students.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
2.	When it comes right down to it, I really cannot do much about a student's reading because most of a student's performance depends upon his or her home environment.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
3.	When a student does better than usual in reading, it is often because I exerted a little extra effort.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
4.	I know how to teach vocabulary effectively. Vocabulary refers to the understanding of word meanings.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
5.	Even when I try very hard, I do not teach reading as well as I do most subjects.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
6.	When my students' reading improves, it is most often due to my having found a more effective teaching approach.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
7.	I know the steps necessary to teach reading in my content area effectively.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
8.	I am convinced that I am able to successfully teach all relevant subject content to even the most difficult students.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
9.	I effectively use grouping to engage students in reading in my content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
0.	I am not very effective in monitoring students' reading ability.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
1.	If students are underachieving in reading, it is most likely due to my ineffective teaching.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
2.	I generally deal with students' reading problems ineffectively.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
3.	Even when I try very hard, I do not teach writing as well as I teach most subjects.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
4.	My good teaching can overcome the inadequacy of a student's reading.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
	I should not be held responsible	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
5.	for the low reading achievement of some students.						
6.	When a low-achieving student progresses in reading, it is usually due to my extra attention.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
7.	I understand reading concepts well enough to be effective in teaching it along with content area material.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
8.	Increased effort in teaching reading will produce little change in some students' achievement in my class.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
9.	I am generally responsible for the reading achievement of students in my class.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
0.	Students' achievement in a subject is directly related to my effectiveness in teaching that content area AND my ability to teach reading.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
1.	If parents comment that their child is showing more interest in a subject at school, it is probably due to my performance.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
2.	I know how to teach my students to decode unknown words they read in my content area. Decoding refers to the method or strategy a student uses to "figure out" a word.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
3.	I wonder if I have the necessary skills to teach reading.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
4.	My effectiveness in teaching reading has little influence on students with low motivation.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
5.	Given a choice, I would not invite someone in to evaluate my teaching of reading within my content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
6.	When a student has difficulty understanding his/her reading, I am usually at a loss as to how to help the student understand it better.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
7.	I do not know what to do to get students excited about reading in my content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
8.	I am certain that I know how to enhance students' reading fluency in my content area. (Fluency refers to the ability to read text accurately and quickly and with expression).	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
9.	Even if I teach the content area well, I cannot help some kids to read better.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
0.	I believe my students' prior experiences will directly affect their ability to understand what they are reading in my content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
1.	I believe I teach students to question the viewpoint of text	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

	appropriately when they read.						
2.	If a child does not learn something the first time I will try another way.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
3.	Most teachers in my school are skilled in various methods of teaching reading.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
4.	Most teachers in my school are well prepared to teach the subjects they are assigned to teach.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
5.	Most teachers in my school really believe every child can learn to read in their content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
6.	If a child does not want to read in their content area, most teachers in my school give up.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
7.	Most teachers in my school do not have the skills needed to produce meaningful student learning.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
8.	Most teachers in my school have what it takes to get the children to read in their content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
9.	Most teachers in my school are able to get through to struggling readers.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
0.	Most teachers in my school are confident they will be able to motivate their struggling readers.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
1.	The lack of instructional materials and supplies makes teaching very difficult.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
2.	Most teachers in my school do not have the skills to deal with student disciplinary problems.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
3.	Most teachers in my school think there are some students that no one can reach.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

4.	The quality of school facilities in my school really facilitates the teaching and learning process for reading in the content area.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
5.	Home life provides so many advantages to students in my school that they are bound to learn.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
6.	The students in my school come to school ready to learn.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
		Strongly Agree	Moderately Agree	Agree slightly more than Disagree	Disagree slightly more than Agree	Moderately Disagree	Strongly Disagree
7.	Drug and alcohol abuse in my school's community make learning difficult for students.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
8.	The opportunities in my school's community help ensure that the students in my school will learn.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
9.	Students in my school just are not motivated to learn.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
0.	Learning is more difficult at my school because students are worried about their safety.	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

Thank you for completing this survey!

* Adapted from:

Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81-91.

Hoy, W. K., & Woolfolk, A. E. (1993). Teachers' sense of efficacy and the organizational health of schools. *The Elementary School Journal, 93*, 356-372.

Appendix F

Grantee Administered Implementation Questionnaire Results

Kathy Belcher, Project Director, Danville Independent Schools

Surveys of literacy coach and administrators' perceptions of the Striving Readers program during the previous year were administered to the participants within the intervention schools. Surveys were administered in Year 3 from May to June 2009 through an online survey system. Each literacy coach and administrator within the intervention schools was emailed a request to participate by the Project Director. These surveys were used to examine the perceived impact of the program, implementation of the program, additional needs not addressed within the program, and the likelihood for the schools to participate in all or parts of the program in the future. Survey items addressed the school-wide literacy and the intervention models within the participating schools. The Literacy Coach Implementation Questionnaire consisted of 13 items and the Administrator Implementation Questionnaire consisted of 17 items. Both surveys utilized open-ended and closed-ended items. The majority of the items included a list of response options with instructions to check all that apply, check only one response option, or to rate each response on a one to four scale. A few items instructed the participants to provide open-ended responses and some of the closed-ended response items allowed participants to provide comments or asked participants to explain their responses. Only closed-ended response options were included in these results.

Table F1

Administrator and Literacy Coach Implementation Questionnaire Results

Item	Responses	
	Administrator	Literacy Coach
Implementation		
At this time, what percentage of your staff is implementing the school-wide literacy strategies in your school this year on a regular basis (i.e. daily/weekly)?	Twenty-five percent (3.6%) Fifty percent (10.7%) Seventy-five percent (64.3%) One hundred percent (21.4%)	Twenty-five percent (4.2%) Fifty percent (29.2%) Seventy-five percent (58.3%) One hundred percent (8.3%)
In which content area do you see the greatest implementation in your school?	Language Arts (42.9%) Science (25%) Math (21.4%) Social Studies (10.7%) Arts and Humanities (0%) Health/PE (0%)	Language Arts (25%) Science (33.3%) Math (12.5%) Social Studies (20.8%) Arts and Humanities (8.3%) Health/PE (0%)
In which content area do you see the least implementation in your school?	Language Arts (14.8%) Science (0%) Math (18.5%) Social Studies (3.7%) Arts and Humanities (18.5%) Health/PE (44.4%)	Language Arts (16.7%) Science (4.2%) Math (25%) Social Studies (8.3%) Arts and Humanities (8.3%) Health/PE (37.5%)
Concerning the implementation levels of the content literacy strategies at your school, please rate the following content areas on a scale from 1-4 (left to right) with 4 being high implementation in your school and 1 being the area with the lowest level of implementation.	Language Arts (M = 3.07) Science (M = 2.93) Math (M = 2.75) Social Studies (M = 2.89) Arts and Humanities (M = 2.46) Health/PE (M = 1.93)	Language Arts (M = 2.91) Science (M = 3.04) Math (M = 2.33) Social Studies (M = 2.83) Arts and Humanities (M = 2.52) Health/PE (M = 1.86)
How would you rate the quality of the literacy coaching taking place in your school?	Poor (0%) Adequate (21.4%) Above Average (28.6%) Excellent (50%)	

Item	Responses

	Administrator	Literacy Coach
How would you rate the quality of instruction provided in the targeted intervention?	Poor (0%) Adequate (7.1%) Above Average (32.1%) Excellent (60.7%)	
On a rating scale of 1-4 with 1 being 'not supportive' and 4 being 'very supportive', please rate the support of your school administrator in implementing the initiatives in the Striving Readers Project.		One (0%) Two (25%) Three (16.7%) Four (58.3%)
<u>Learning Outcomes</u>		
To what extent do you believe the school-wide content literacy approaches are supporting improved student learning?	Not (0%) Little (0%) Somewhat (42.9%) Substantially (57.1%)	
Do you see evidence that the school-wide model is helping to improve student achievement?		Yes (95.8%) No (4.2%)
To what extent is the targeted intervention making a positive impact on student learning?	Not (0%) Little (7.1%) Somewhat (39.3%) Substantially (53.6%)	
Do you see the targeted intervention class making an impact on improving reading?		Yes (91.7%) No (8.3%)
On a rating scale from 1-4 with 1 being 'not effective' and 4 being 'very effective', please rate the overall effectiveness of the school-wide model in helping to increase student achievement?		One (0%) Two (16.7%) Three (50%) Four (33.3%)

Item	Responses	
	Administrator	Literacy Coach

How often do you use the Content Literacy Building Walkthrough Tool and/or Classroom Observation Tool to assess the progress of content literacy integration in your school?	Seldom (25%) Somewhat (14.3%) Often (once per quarter; 28.6%) Regularly (monthly; 32.1%)
How often do you reassess your school's growth using the CTL Adolescent Literacy Performance Guide (lykert scale)?	Monthly (7.1%) Quarterly (10.7%) Once a semester (32.1%) Annually (50%)
How often do you meet with your Literacy Coach to discuss general and specific content literacy and coaching needs in your school?	Once per year (0%) Monthly (89.3%) Quarterly (10.7%) Never (0%)

Perceived Needs and Sustainability

What is needed to improve the school-wide content literacy model in your school? (Check all that are needed)	Continued PD for CLM (39.3%) Continued Coaching for CLM (64.3%) Classroom materials for the CLM (39.3%) Technology used to teach instructional strategies (60.7%) More intentional implementation on the part of the teaching staff (67.9%)
If funds were available, would your school want to continue the Striving Readers' initiatives for the 2010-2011 school year?	Yes (87.5%) No (12.5%)

Item	Responses	
	Administrator	Literacy Coach
If funds are available to	Targeted Intervention class	Targeted Intervention class

continue the Striving Readers initiatives for the year 2010-2011 and your school decided to continue the efforts set by the Striving Readers grant, list the areas you would want to see continued.	(71.4%) School wide CLM (82.1%) Intervention teacher half time (57.1%) School wide Content Literacy Coach half time (67.9%) Two day school wide PD summer institutes (32.1%) Four day literacy coach PD summer institutes (25%) Monthly Literacy Coach PD/support (32.1%) Three administrator's meetings (14.3%) Other (3.6%)	(58.3%) School wide CLM (75%) Intervention teacher half time (58.3%) School wide Content Literacy Coach half time (66.7%) Two day school wide PD summer institutes (54.2%) Four day literacy coach PD summer institutes (37.5%) Monthly Literacy Coach PD/support (50%) Three administrator's meetings (20.8%) Other (8.3%)
What is needed to improve the targeted intervention model in your school? (Check all that are needed)	Continued PD for the Intervention teachers (25%) Continued coaching for the Intervention teachers (39.3%) More classroom materials for the targeted intervention (25%) Technology used to teach instructional strategies (57.1%) More intentional implementation on the part of the Intervention teacher (17.9%) Other (10.7%)	

Item	Responses	
	Administrator	Literacy Coach

What steps has your school taken to ensure the efforts made for the school-wide content literacy model and the targeted intervention will be sustained after the Striving Readers grant is completed.

My school principal is leading my staff and district to include using school-wide content literacy strategies and provide a targeted intervention as a major part of the school and district comprehensive plans. (41.7%)

I believe my principal acknowledges there is positive evidence that the school-wide and targeted intervention models are needed for improvement of student achievement but have not set into place sustainability. (54.2%)

My school principal sees evidence of improvement of student achievement, but only feels the school-wide content literacy model needs to be sustained. (4.2%)

My school principal sees evidence of improvement of student achievement, but feels only the need to support sustaining the targeted intervention model. (0%)

In my opinion, my school principal does not see evidence that the school-wide content literacy model nor the targeted intervention is overall effective and therefore probably will not support continuing efforts outlined in the Striving Readers initiatives. (8.3%)