

Summary of 2006 Striving Readers Projects: Profile of Danville School District's Striving Readers Project and Evaluation

Grantee: Danville School District

Project Director: Kathy Belcher

Local Evaluator: CCLD

Principal Investigator: Susan Cantrell

Project Website: <http://www.danville.k12.ky.us/district/programs/KCLCWebPage/index.htm>

Setting

Ten middle schools, nine high schools and two 6-12 schools in seven rural school districts in central, northwest, and eastern Kentucky are participating in the Striving Readers project. All schools are eligible for Title I services, and about half of the students (49 percent) served by these schools are identified as eligible for free or reduced priced lunch. Across the 21 schools, 21 percent to 91 percent of students scored below proficient on state reading tests in 2005. These schools serve predominantly white students (91 percent), while 5 percent of the students are identified as African American.

Intervention Models

Targeted Intervention

Classroom Model as Planned:

The Learning Strategies Curriculum (LSC), developed by the University of Kansas Center for Research on Learning as one component of the Strategic Interventions Model (SIM), is a curriculum aimed at strategies for word identification, comprehension, vocabulary, and fluency among struggling adolescent readers. The model includes reading materials with content written specifically for and designed to be of high interest to adolescents by including connections to their everyday experiences. Springboard novels, picture books, and articles are also used to support standards integration and build background for comprehension strategies. Frequent grade level and instructional level curriculum based measures are used for reading and writing. Informal reading diagnostics from the Ekwall/Shanker Reading Inventory fourth edition are also used.¹

Each classroom has a tablet PC to serve as a method of delivery system to whole or small group. Some classrooms use tablet for Visual Imagery Strategy. Some classrooms use a listening center where students can access models of fluency, record themselves while reading, monitor their own fluency levels, and listen to audio books based on individual needs. Some classrooms use blogging or software supports for pre-requisite skills needed prior to strategy instruction.

¹ For more information on LSC, please see the Learning Strategies Curriculum Intervention Profile by Abt Associates, available at <http://www2.ed.gov/programs/strivingreaders/performance.html>.

Professional Development Model as Planned: Teachers who are new to LSC are initially offered 5 half-day workshops with 9 half-day follow-up sessions, totaling 42 hours of training per teacher, all provided by the model developer. Each new teacher is also offered a monthly classroom visit by a CTL mentor coach, as well as ongoing support via email and telephone from the mental coach. In subsequent years, new and returning teachers are offered a 2-day initial workshop and 10-11 half-day follow-up sessions. Additionally, teachers are offered coaching support, including 3 - 4 days of on-site coaching by a mental coach and the developer, and bimonthly distance learning sessions.

Context for Implementation: The Learning Strategies Curriculum is being implemented as a supplement to the district's regular English language arts curriculum in the schools, replacing an elective course. The targeted intervention serves sixth- and ninth-grade students who scored at least two grade levels below their current grade level on the GRADE reading assessment at the beginning of the school year. Special education students are excluded if they are categorized as functionally mentally disabled or are enrolled in special education for all core classes. Struggling readers can receive the intervention for one year. In Year 1, 442 students in grades 6 and 9 were served by the intervention. In the second year, new cohorts of 6th and 9th graders were served, totaling 387 students. The targeted intervention will be implemented for a total of four years.

Whole School Intervention

Classroom Model as Planned: The Adolescent Literacy Model (ALM) was developed by the Collaborative for Teaching and Learning at the University of Kentucky to help all core subject and auxiliary teachers improve student content learning by applying literacy strategies during instruction. These strategies include vocabulary development, reading comprehension, verbal fluency, writing to learn, writing to demonstrate learning, and academic dialogue.

Professional Development Model as Planned: Teachers new to the Adolescent Literacy Model are offered 5 days of training at the Teacher Institute provided by the model developer. This training totals 30 hours per teacher. New teachers are also offered mentoring opportunities from the school literacy coaches. In the second year, new teachers receive the same level of professional development. Training for returning teachers includes 1 day of common trainings, 1 day of school-specific sub-domain trainings, 2 days of school institutes and 2 half-day department-specific trainings per discipline per school and as needed. These trainings are offered by the model developers and total 24 hours per teacher. Teachers also are offered coaching support through monthly visits from mentor coaches and additional support as-needed.

Context for Implementation: All students in participating schools are receiving instruction in the whole school intervention. In Years 1 and 2, over 13,000 students in grades 6-12 were served by the 21 intervention schools. The whole school intervention will be implemented for a total of four years.

Evaluation Design

Targeted Intervention

Research Question:

1. What is the impact of the Learning Strategies Curriculum on the reading achievement, reading motivation, and reading strategy use of struggling readers?

Research Design and Methods: Within-schools, struggling readers are randomly assigned to either receive the supplemental LSC class or to the control group. The impacts of LSC on student outcomes will be estimated using multilevel models to account for nesting of students within schools.

Control Condition: Students randomized to the control group continue to receive their regular elective courses in place of the LSC class.

Sample Size: Across the three years of implementation, 462 grade 6 students were randomized to the treatment group and 389 to the control group across 12 middle schools. In the 11 high schools, 516 grade 9 students were randomized to the treatment group and 459 to the control group.

The Year 3 evaluation report, which includes findings from the first three years of implementation, includes a sample of students large enough to detect an impact (in standard deviation units) of the intervention on student outcomes after one year of LSC equivalent to:

- .16 and .17 on the standardized test (GRADE) of reading achievement for grade 6 and 9, respectively,²
- .21 on the measure of reading strategies (MARS) for both grades 6 and 9, and
- .21 and .20 on the measure of reading motivation (MRQ) for grade 6 and 9, respectively.

Because Danville will continue to offer the intervention to new groups of students for four school years, the Year 4 report will have larger sample sizes and be able to detect smaller impacts.

Key Measures of Student Reading Outcomes (Source):

Group Reading Assessment Diagnostic Evaluation (GRADE) (External Test Publisher)

Metacognitive Awareness of Reading Strategies Inventory (MARS)

Motivation to Read Questionnaire (MRQ)

² Abt Associates staff calculated the MDE by multiplying the standard error of the impact estimate by 2.8. This calculation produces the MDE for a two-tailed test with 80% power, and with an alpha level of .05, and accounts for clustering and for the inclusion of the covariates in the model.

Whole School Intervention

Research Questions:

1. To what extent does the Collaborative Model for Content Literacy impact students' reading achievement, reading strategy use, reading motivation, and content area achievement?
2. To what extent does the profession development model used by the Collaborative Model for Content Literacy improve teacher sense of literacy teaching self efficacy?

Research Design and Methods: An interrupted time series analysis with a comparison group will be used to compare pre-program student achievement scores with post-program student achievement scores. Future evaluation reports will include findings on the impact of the whole school intervention on student achievement. The interrupted time series evaluation design is made more rigorous with the inclusion of more than two years of post-implementation data and comparison schools.

Comparison Group: The sample will also include collection of school-level aggregate test scores from 21 comparison schools that did not implement the intervention. Comparison schools are matched to intervention schools on ethnicity, region, and proportion of at-risk students.

Sample Size: The whole school intervention is being delivered to all students in the 21 treatment schools (10 middle schools, 9 high schools and 2 schools with grades 6-12). All students in the schools will be included in the sample for the evaluation, totaling approximately 13,000 students in a single year. There are also 21 comparison schools that will be included in the evaluation of the whole school model.

Key Measures of Student Reading Outcomes (Source):

Group Reading Assessment Diagnostic Evaluation (GRADE) (External Test Publisher)

Year 3 Evaluation Findings

Targeted Intervention

Fidelity of Implementation of the Targeted Intervention Model: In terms of fidelity of implementation of the *professional development model* in all three years (2006-07, 2007-08, and 2008-09), 100% of teachers implemented the intervention at a high level.

In terms of fidelity of implementation of the *classroom model* ratings of the fidelity of implementation of the program model were based on classroom observations and teacher interviews. In Year 1 of implementation, grade 6 teachers spent 59% of their time, on average, in LSC activities and achieved 91% teacher attendance. Grade 9 teachers spent 70% of their time, on average, in LSC activities, and also achieved 91% teacher attendance. In the second year of implementation, both grade 6 and grade 9 teachers spent about 80% of their time, on average, in LSC activities. Grade 6 teachers achieved 78% teacher attendance while grade 9 teachers achieved 88% teacher attendance. In Year 3, teachers in both grades 6 and 9 spent an average of 87% of their time in LSC activities. The grade 6 teachers achieved 82% teacher attendance and the grade 9 teachers achieved 87% teacher attendance.

Impact of the Targeted Intervention on Student Reading Outcomes: There was a significant impact of the targeted intervention on reading achievement of students in grade 9 who received one year of treatment, with effect size of .15. There were no significant impacts of the targeted intervention on the reading achievement of students in grade 6 who received one year of the treatment, with effect sizes of .08.

There were significant impacts of the targeted intervention on reading strategies of students in grade 6 who received one year of treatment, with effect size of .22. There were no significant impacts of the targeted intervention on reading strategies of students in grade 9 who received one year of treatment, with effect sizes of .09.

There were significant impacts of the targeted intervention on the reading motivation of students in grades 6 and 9 who received one year of treatment, with effect sizes of .23 and .22, respectively.

Summary of the Strengths and Weaknesses of the Impact Evaluation of the Targeted Intervention:

Strengths

- Eligibility for random assignment was determined systematically, using a predetermined cutoff score on a test of reading achievement (GRADE).
- Random assignment was faithfully executed, with no evidence of students receiving the intervention after being randomized to the control condition.
- There is no evidence that there are other factors (e.g., other reading programs or district policies) that were implemented in ways that would undermine the evaluators' ability to attribute impacts to The Learning Strategies Curriculum.
- Assessment of outcome measures:
 - The reading test used as an outcome measure (GRADE) assesses vocabulary, comprehension, and oral language, and was developed by an external test publisher. There is no reason to believe that students assigned to the treatment group have more experience taking the test than do the control group students, or that the test measures skills specific to the intervention, both of which could undermine confidence in the impact estimates.
 - The surveys used to collect the outcome measures the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and the Motivation to read Questionnaire (MRQ) are published measures developed by researchers outside the evaluation team. There is no reason to believe that students assigned to the treatment group have more experience taking the test than do the control group students, or that the test measures skills specific to the intervention, both of which could undermine confidence in the impact estimates.

- While some students were unable to participate in follow-up data collection, the level of attrition did not differ substantially across the treatment and control groups. This suggests that the integrity of the original randomized design was preserved, and that the treatment and control groups continue to be equivalent on all measured and unmeasured characteristics at follow-up.
 - Some students (15.2% of grade 6 students and 23.5% of grade 9 students) were unable to participate in follow-up data collection on the GRADE; the levels of attrition did not differ substantially across the treatment and control groups (differential attrition rate was 7.5% in grade 6 and 6.8% in grade 9). This amount of attrition is within the acceptable range established by WWC standards.³
 - Some students (39.1% of grade 6 students and 53.3% of grade 9 students) were unable to participate in follow-up data collection on the MARSI and MRQ; the levels of attrition did not differ substantially across the treatment and control groups (differential attrition rate was 4.7% in grade 6 and 1.3% in grade 9). This amount of attrition is within the acceptable range established by WWC standards.
- No differences in pre-study reading achievement or other demographics were noted between the treatment and control students included the analysis at follow-up.
- When estimating impacts, appropriate analytic steps were taken to account for the clustering of students within schools. A pre-study measure of reading achievement is included in the models to increase the precision of the impact estimates.

Weaknesses

- None.

Whole School Intervention

Fidelity of Implementation of the Whole School Intervention Model: In terms of fidelity of implementation of the *professional development model* in Year 1 (2006-07), 70% of teachers in the middle schools, 67% of teachers in the high schools and 100% of teachers in the 6-12 schools achieved adequate levels of participation. In the second year of implementation, these levels were 80% in middle schools, 56% in high schools and 50% in the 6-12 schools. In Year 3, these levels were 70% in middle schools, 67% in high schools and 100% in the 6-12 schools

The *classroom model* was observed as being implemented 26% of the time in grade 6 classrooms and 24% of the time in grade 9 classrooms in Year 1. In Year 2, the classroom model was implemented 30% of the time in grade 6 classrooms and 13% of the time in grade 9 classrooms. In Year 3, the classroom model was implemented 26% of the time in grade 6 classrooms, and 24% of the time in grade 9 classrooms.

³ For more information, please see Appendix A-Assessing Attrition Bias, of the WWC Procedures and Standards Handbook, available at: <http://ies.ed.gov/ncee/wwc/help/docviewer/Doc.aspx?docId=19&tocId=7>.

Impact of the Whole School Intervention on Student Reading Outcomes: The impact of the whole school intervention on student reading outcomes will be reported in the Year 4 evaluation report. The evaluator chose to wait until the Year 4 report to estimate the impact of the whole school model because the evaluation design will be strengthened by another year of data.