

2009 SREE Conference Abstract

Title:

The Enhanced Reading Opportunities Study: Findings from the Second Year of Implementation

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Abstract

Background/context: According to the National Assessment of Educational Progress (NAEP), just over 70 percent of students nationally arrive in high school with reading skills that are below “proficient” – defined as demonstrating competency over challenging subject matter. Nearly half of these students do not exhibit even partial mastery of the knowledge and skills that are fundamental to proficient work at grade level.

Recent research indicates that struggling adolescent readers grapple with a constellation of reading difficulties that range from severe problems with basic literacy skills to troubles gaining a nuanced understanding of text. Biancarosa and Snow (2004) indicate that about “70 percent of older readers require some form of remediation.”¹ However, these students’ problem is less often with knowing how to read words on a page and rather more often with understanding what they read: they have difficulties with comprehension (Curtis and Chmelka, 1994). Their struggles with comprehension can stem from a lack of reading fluency, a lack of strategies for how to make sense of what they read, or a lack of experience employing such strategies across multiple types of texts (Schoenbach, Greenleaf, Cziko, and Hurwitz, 1999).

These problems are especially acute as students navigate the transition into high school, facing new challenges that can easily push them off the path toward graduation and preparation for postsecondary education and work. Ninth-grade requirements represent a leap for entering freshmen, who face an increase in the amount of reading required in their courses, thicker and more intimidating textbooks, and new vocabulary that can be overwhelming. Struggling readers, who may have interest in academic subjects, but lack confidence in being able to improve their reading, may increasingly avoid challenging reading materials and try to avoid situations in which their poor reading skills will be exposed (Guthrie, 2002; Guthrie and Alvermann, 1999; Wigfield, 2004).

Striving adolescent readers raise a critical challenge for high school reform initiatives that aim to improve low-performing high schools (Quint, 2006). Limitations in literacy skills are a major source of course failure, dropping out, and poor performance in postsecondary education, yet most high schools provide no formal instructional supports for literacy development. However, many English/language arts and social studies teachers do not see literacy development as their role (Shanahan 2004). Thus, secondary school instructional planning often reflects a belief that teaching reading is the domain of elementary schools (Roe, Stoodt and Burns, 1998).

Purpose/objective/research question/focus of study: Unfortunately, little is known about school-based interventions that address the needs of struggling adolescent readers. To help fill these gaps in knowledge and to provide evidence-based guidance to practitioners, the U.S. Department of Education initiated the Enhanced Reading Opportunities (ERO) Study — a demonstration and random assignment evaluation of supplemental literacy programs targeted to ninth grade students with limited literacy skills.²

The demonstration involves 34 high schools from 10 school districts that are implementing one of two supplemental literacy programs: Reading Apprenticeship Academic Literacy (RAAL), designed by WestEd, or Xtreme Reading, designed by the University of Kansas Center for

¹Biancarosa and Snow (2004) focus on students in grades 4 through 12.

²The ERO study is known more formally as “An Evaluation of the Impact of Supplemental Literacy Interventions in Freshman Academies.”

Research on Learning. The programs are supplemental as they consist of a year-long course that replaces a ninth-grade elective class and not a core academic class. They aim to help striving adolescent readers develop and apply the strategies and routines used by proficient readers and to motivate them to read more. The literacy programs were implemented in school years 2005-2006 and 2006-2007, resulting in two cohorts of ninth-grade participants. The U.S. Department of Education's Office of Elementary and Secondary Education (OESE)³ provided direct support for implementation to the participating schools and districts, while the Institute of Education Sciences has been funding and overseeing the design and execution of the evaluation effort. MDRC, a nonprofit, nonpartisan social policy research organization, is conducting the evaluation in partnership with the American Institutes for Research and Survey Research Management.

The study's first report described the first year of implementation of the ERO programs and presented impact findings for the first cohort of ninth-grade students (2005-06).⁴ The key impact finding was that overall, the ERO programs improved students' reading comprehension test scores by 0.09 standard deviation (p -value = 0.019).⁵ Although not statistically significant, the estimated impact of each literacy intervention (Xtreme Reading, RAAL) was also 0.09 standard deviation.

This conference paper will present findings from the second report for the ERO study, which examined implementation and impacts for the second year of program operation. The following questions were examined for the second cohort of participating ninth-grade students:

- What are the short-term impacts of the two supplemental literacy interventions, together and separately, on ninth-grade students' reading skills and behaviors?
- For which subgroups of students are the ERO interventions most or least effective?
- What factors promote or impede successful implementation of the ERO interventions?

Setting: The supplemental literacy programs were implemented in 34 high schools located in 10 school districts across the country. The districts were selected through a special grant competition organized by the U.S. Department of Education's Office of Vocational and Adult Education (OVAE). Overall, ERO programs were implemented in schools located predominantly in large and midsize cities, with some of the schools in each of these categories being listed as "urban fringe." As specified by the OVAE grant requirements, all schools enrolled more than 1,000 students in grades 9 through 12, averaging 1,685 students total and 570 ninth-grade students per school. On average across the 34 high schools, the twelfth-grade class is 59 percent of the size of the ninth-grade class three years earlier, suggesting that roughly 41 percent of students have left the schools between the ninth and twelfth grades. This measure, "promoting power," serves as a proxy for the likely longitudinal graduation rate.⁶ Thirty-eight percent of the students in the participating schools were eligible for Title I services and that 47 percent of the students were approved for free or reduced-price lunch.

³The support originally came from the Office of Vocational and Adult Education (OVAE) and transferred later to OESE.

⁴See Kemple, Corrin, Nelson, Salinger, Drummond, and Herrmann (2008).

⁵Although they are not statistically significant, the magnitudes of the impact estimates for each literacy intervention were the same as those for the full study sample.

⁶Balfanz and Legters (2004) developed this measure of "promoting power" to approximate a school's graduation rate. It is calculated as the ratio of the number of twelfth-grade students in a given school year to the number of ninth-grade students from three years prior.

Population/Participants/Subjects: The target population for the study is comprised of ninth-grade students reading two to five years below grade level. In the second year of the study, the participating high schools identified 2,679 students whose pretest scores indicated that they were reading at this level (on average, 79 students per school). Prior to entering the study, students in the study sample were reading at a 4.9 grade level (an average of almost four years below grade level) and the 14th percentile nationally. On average, the study sample is over 78 percent Hispanic or black; 49 percent reported that a language other than English is spoken in their homes; and 29 percent are overage for grade (15 years old or older at the start of ninth grade, suggesting that they were retained in at some point in their schooling).

Intervention/Program/Practice: The ERO study is a test of supplemental literacy interventions that are designed as full-year courses and targeted to ninth-grade students whose reading skills are two or more years below grade level as they enter high school. The two programs — Reading Apprenticeship Academic Literacy (RAAL) and Xtreme Reading — were selected for the study from a pool of 17 applicants by a national panel of experts on adolescent literacy.

The programs were required to focus on instruction in the following areas: (1) student motivation and engagement; (2) reading fluency, or the ability to read quickly, accurately, and with appropriate expression; (3) vocabulary, or word knowledge; (4) comprehension, or making meaning from text; (5) phonics and phonemic awareness; and (6) writing. The overarching goals of both programs are to help ninth-grade students adopt the strategies and routines used by proficient readers, improve their comprehension skills, and be motivated to read more and to enjoy reading. Both programs are supplemental: they consist of a year-long course that replaces a ninth-grade elective class (rather than a core academic class), and they are offered in addition to students' regular English language arts classes.

Experienced, full-time English/language arts or social studies teachers volunteered and were approved by the U.S. Department of Education, the districts, and the schools to teach the programs for two years. One teacher per high school was trained and responsible to teach four sections of the ERO class exclusively. Each section accommodated 10 to 15 students. Classes were designed to meet for a minimum of 225 minutes per week. The developers for each ERO program provided training and technical assistance to ERO teachers: a three-day summer training institute, and off-site booster training sessions and on-site coaching visits during the school year.

Research Design: The ERO evaluation utilizes a two-level random assignment research design. First, within each district, eligible high schools were randomly assigned prior to the first year of program implementation to use one of the two supplemental literacy programs: 17 high schools were assigned to use RAAL, and 17 schools were assigned to use Xtreme Reading. Each school implemented the same program in both the 2005-2006 and 2006-2007 school years.

Second, eligible students within each of the high schools were randomly assigned to either enroll in the ERO class (ERO group) or to take one of their school's regularly offered elective classes (non-ERO group). In the second year of the study, participating high schools identified 2,679 ninth-grade students whose baseline test scores indicated that they were reading two to five years below grade level: 1,529 students (57 percent) randomly assigned to the ERO group and 1,150 (43 percent) randomly assigned to the non-ERO group. There is no systematic difference between the background characteristics of the ERO students and the non-ERO students.

Data Collection and Analysis: The analysis examines impacts on students' reading achievement and reading behaviors. Students' reading achievement was measured using the Group Reading Assessment and Diagnostic Examination (GRADE) assessment.⁷ The reading comprehension and vocabulary subtests of the GRADE were analyzed, with reading comprehension as the study's primary outcome of interest.⁸ The GRADE was administered prior to random assignment ("baseline") and at the end of their ninth-grade year ("follow-up").

Information on students' reading behaviors was collected using a follow-up student survey. Responses to the survey were used to derive measures of three reading behaviors: the number of times during the prior month that a student read different types of text in school or for homework; the number of times during the prior month that a student read different types of text outside of school; and students' reported use of the reading strategies and techniques that the ERO programs try to teach.

Information was also collected to learn about program implementation. To learn about program fidelity to developers' specifications, the study included observations of the supplemental literacy classes during the first and second semester of the school year. Other implementation data collected included information about student course schedules and attendance in the ERO courses.

The impact analysis is based on the 2,171 students who have follow-up GRADE test scores. The impact analysis uses ordinary least squares regression to estimate the difference in outcomes between the ERO and the non-ERO group, adjusted for the blocking of random assignment by school. To improve the precision of the impact estimates, the analysis also controls for random differences between the ERO and the non-ERO group in their GRADE reading comprehension score at baseline and whether they are overage for grade (an indicator of grade retention).

Findings/Results: The key implementation findings from the second year of the study are that:

- *Implementation fidelity:* The implementation fidelity of the ERO programs was more highly rated in the second year of the study than in the first year. In comparison to the first year, a greater number of schools in the second year were deemed to have programs that were well aligned with program developers' specifications (26 schools in the second year compared to 16 schools in the first year), and fewer schools were considered to be poorly aligned (one school in the second year compared to 10 schools in the first year).
- *Program start-up:* Schools started offering their ERO classes sooner in the second year of implementation than in the first year (an average of 2.3 weeks after the start of the school year in the second year compared to 6 weeks in the first year).
- *Teachers' experience with the program:* Twenty-seven of the 34 ERO teachers from the first year of the study returned for the second year.

Thus, in most of the study schools, the second cohort of participating students was exposed to a full year of program operation and to teachers in their second year of implementing the programs. Yet, despite the observed improvements in program implementation, the impact of the ERO programs in the second year of the study were similar to those found in the first year (see Table 1):

⁷American Guidance Service (2001a, 2001b).

⁸Impacts on both subtests are presented in standard score units; students with a standard score of 100 points are considered to be reading at grade level.

- In the second year of the study, the ERO programs produced a positive and statistically significant impact on students' reading comprehension of 0.80 standard score points (which corresponds to an effect size of 0.08 standard deviation, p -value = 0.042).⁹

Figure 1 places this impact in the context of the actual and expected change in the ERO students' reading comprehension test scores on the GRADE from the beginning of ninth grade to the end of ninth grade. The bottom section of the bar shows that at the start of their ninth-grade year, students in the ERO group achieved an average standard score of 84.6, corresponding to a grade equivalent of 4.9 (the last month of fourth grade) and an average reading level at the 14th percentile for ninth-grade students nationally. At the end of their ninth-grade year, the ERO group achieved an average standard score of 90.1, corresponding to a grade equivalent of 6.1 and an average reading level at the 25th percentile nationally. This means that the ERO group experienced a growth of 5.5 points in their reading comprehension skills in ninth grade. Had they not had the opportunity to attend the ERO classes, the ERO group would have grown 4.7 standard score points (as represented by the growth of the non-ERO group). Thus, the estimated impact of the ERO programs is 0.8 standard score points, which is a 17 percent improvement over and above the growth that the ERO group would have experienced without the ERO classes.

Table 1 shows the estimated impact of each program. RAAL had a statistically significant, positive impact on reading comprehension test scores (effect size of 0.14 standard deviation). Xtreme Reading produced a positive impact (but not statistically significant) on the same measure (effect size of 0.02 standard deviation). The difference between these impacts is not statistically significant; thus, one cannot conclude that one program produced a different impact than the other.¹⁰

Conclusions: While the ERO programs improved students' reading comprehension, the magnitude of their impact is modest. The ERO group's reading comprehension scores still lagged 10 points below the national average at the end of ninth grade. In fact, 77 percent of students who participated in the ERO classes scored two or more years below grade level at the end of ninth grade, meaning that they would still be eligible for the ERO programs were the programs again available to them.

It is important to remember, however, that the ERO interventions are modest in scope: they are "pull out" literacy classes for adolescents already far below grade level. Given the ERO study's findings that a supplemental approach may not be enough, high schools may need to implement *school-wide* literacy reforms that embed literacy instruction in *all* content area classes (not just reading or ELA classes). School-wide reforms carry the potential for larger impacts; however, they are also more difficult to implement as they involve changing the instructional culture of a school.

Finally, while the ERO programs have a modest impact on reading comprehension, they may have stronger impacts on students' longer-term outcomes. The final report from this study will examine the impact of the programs on educational outcomes of both cohorts of students as they progress through high school (e.g., students' performance in core classes and on high-stakes state assessments, their grade-to-grade promotion rates, and whether they are on track to graduate from high school).

⁹The overall impact of the programs in the second year (0.08 standard deviation) is not statistically different from the impact of the programs in the first year of implementation (0.09 standard deviation).

¹⁰The ERO programs – whether together or individually – did not have an impact on reading vocabulary or reading behaviors. Nor were impacts larger for some subgroups of students or schools than others.

Appendix A. References

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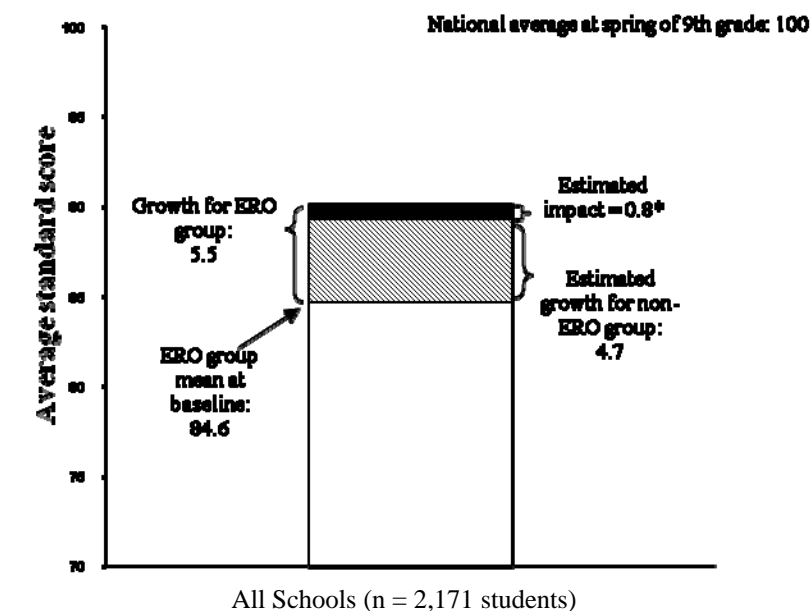
Appendix B. Tables and Figures

**Table 1. The Enhanced Reading Opportunities Study
Impacts on Reading Achievement, Cohort 2 Follow-Up Respondent Sample**

Outcome	ERO Group	Non- ERO Group	Estimated Impact	Estimated Impact Effect Size	P-Value for Estimated Impact
<u>All schools</u>					
Reading comprehension					
Average standard score	90.1	89.3	0.8 *	0.08 *	0.042
<i>Corresponding grade equivalent</i>	6.1	6.0			
<i>Corresponding percentile</i>	25	23			
Reading vocabulary					
Average standard score	93.5	93.5	0.0	0.00	0.986
<i>Corresponding grade equivalent</i>	7.8	7.8			
<i>Corresponding percentile</i>	32	32			
Sample size	1,264	907			
<u>Reading Apprenticeship schools</u>					
Reading comprehension					
Average standard score	90.2	88.9	1.4 *	0.14 *	0.015
<i>Corresponding grade equivalent</i>	6.1	5.9			
<i>Corresponding percentile</i>	25	23			
Reading vocabulary					
Average standard score	93.4	93.8	-0.4	-0.04	0.428
<i>Corresponding grade equivalent</i>	7.7	7.8			
<i>Corresponding percentile</i>	32	33			
Sample size	645	470			
<u>Xtreme Reading schools</u>					
Reading comprehension					
Average standard score	90.0	89.7	0.2	0.02	0.672
<i>Corresponding grade equivalent</i>	6.1	6.0			
<i>Corresponding percentile</i>	25	24			
Reading vocabulary					
Average standard score	93.5	93.1	0.4	0.04	0.468
<i>Corresponding grade equivalent</i>	7.8	7.7			
<i>Corresponding percentile</i>	32	31			

Statistical significance is indicated (*) when the p-value is less than or equal to .05.
The difference in impacts between the two reading program is not statistically significant.

**Figure 1. The Enhanced Reading Opportunities Study
Impacts on Reading Comprehension, Cohort 2 Follow-Up Respondent Sample**



NOTES: The statistical significance is indicated (*) when the p-value is less than or equal to 5 percent. The national average for standard score values is 100, and its standard deviation is 15.