The Reading Edge: A Randomized Evaluation of a Middle School Cooperative Reading Program

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Abstract

This article describes a randomized evaluation of *The Reading Edge*, a reading program for middle school students. *The Reading Edge* was designed to integrate findings of research on cooperative learning and metacognitive reading strategies into a replicable reading instructional package that could be implemented effectively in Title I middle schools. In this study, 788 sixth graders in two cohorts in two high-poverty, rural middle schools were randomly assigned to participate in *The Reading Edge* or to continue with their existing reading programs. Each cohort participated for one year. In both years, observations of classroom use of metacognitive strategies, cooperative learning, goal setting/feedback, and classroom management, showed moderate levels of implementation in *Reading Edge* classes but little use of metacognitive strategies, cooperative learning, or goal setting/feedback in control classes. Statistically significant differences were found combining across cohorts on the Gates-MacGinitie Reading Test Total (p<.01), Comprehension (p<.05), and Vocabulary (p<.01) scales. Effects were similar for students who were high, average, and low in pretest scores. Outcomes for the two cohorts were nearly identical. These findings support a conclusion that effects of *The Reading Edge* are modest but reliable in high-poverty middle schools.

In recent years, there has been a growing realization that progress in middle and high school education is greatly inhibited by the poor reading skills of many secondary students (e.g. Alvermann, 2001; Deshler, Palincsar, Bianecarosa, & Nair, 2007; Jackson & Davis, 2000). The National Assessment of Education Progress (NCES, 2005) documents both the low levels of reading skill among U.S. eight graders and the substantial gap between middle-class and disadvantaged students. Among students who qualify for free lunch, 43% scored below the basic level on NAEP, a very minimal standard, while only 19% of non-poor students scored this poorly.

Clearly, there is a need for effective, replicable programs capable of helping secondary students succeed in reading. Studies of school improvement strategies show that simply informing teachers about best practices leads to little improvement in outcomes, but providing structured programs that include training, coaching, materials and progress assessments can reliably increase achievement (Rowan, Camburn, Correnti, & Miller, 2007). Yet at present, there are few programs with strong evidence of effectiveness. In a recent systematic review of the research on middle and high school reading programs, Slavin, Cheung, Groff, & Lake (2007) found only 33 studies that met minimal inclusion requirements (e.g., experimental-control comparisons, controls for pretest differences, duration of at least 12 weeks). Only four studies used random assignment to conditions. No programs met the standards for "strong evidence of effectiveness," but four programs met the standards for "moderate evidence of effectiveness." Two were cooperative learning approaches (*The Reading Edge* and *Student Team Reading),* one was a mixed-method model (*READ 180),* and one was a CAI program (*Jostens*, which has now been superseded by *Compass Learning).* Six additional programs met standards for "limited evidence of effectiveness," and 115 programs had no evidence of positive effects, including all

of the popular textbook programs used in secondary reading. The limited number of proven

programs for middle and high school reading suggest a need for further research and

development to identify programs capable of being used on a broad scale to help educators

accelerate the achievement of students at this level, especially the many who are not reading at

grade level in high-poverty schools.

The present article reports the findings of a randomized study of *The Reading Edge*, one

of two cooperative learning programs identified as having "moderate evidence of effectiveness"

in the Slavin et al. (in press) review, and one of only four programs evaluated in randomized

experiments. A previous study of the *Success for All Middle School*, in which *The Reading Edge*

provides the daily literacy instruction, produced positive effects on the reading achievement of

middle school students in a matched experiment (Slavin, Daniels, & Madden, 2005). A matched

experimental study of SFAMS took place in 7 experimental and 7 control schools in 6 states

(Slavin, Daniels, & Madden, 2005). On state assessments, six of the seven SFA Middle Schools

gained more than their matched comparison schools in reading. Combining data across schools,

the *SFA Middle School* students' scores were significantly higher than those of their matched

controls.

The present study builds on earlier research in two ways. First, *The Reading* Edge is

studied as a reading program only, without the comprehensive school reform elements of the

Success for All Middle School. Since many schools adopt *The Reading Edge* as a "stand-alone"

program, it is important to understand its impact as such. Second, use of a randomized

methodology ensures the highest level of scientific rigor by ruling out selection bias (Mosteller

& Boruch, 2002).

A previous report described the first year of implementation of *The Reading Edge.* This randomized evaluation found statistically significant but modest positive effects on the Gates Total Reading Scale (ES=+0.14) (Chamberlain, Daniels, Madden, & Slavin, 2007). The present article includes results from the second cohort to determine whether schools obtain better results with more time in the program. It also presents outcomes combining the two cohorts.

Background of The Reading Edge

In response to the widely perceived need for more focus on curriculum and instruction, especially related to literacy, middle school reformers are increasingly providing teachers with specific materials, professional development, and assistance such as literacy coaching in order to implement research-based instruction. Early successes have been achieved in comprehensive middle school reform models, notably the *Talent Development Middle School* (Balfanz & MacIver, 2000), *Cooperative Integrated Reading and Composition* (CIRC) (Stevens & Durkin, 1992), and the *Success for All Middle Schoo*l (SFAMS) (Slavin, Daniels, & Madden, 2005).

The *Reading Edge* builds upon instructional processes proven to increase student reading performance, including *Cooperative Integrated Reading and Composition,* as well as numerous studies of the Success for All elementary reading program. Studies of CIRC in upper elementary and middle schools produced significant positive reading outcomes (Stevens, Madden, Slavin, & Farnish, 1987; Stevens & Durkin, 1992; Stevens, Slavin, & Farnish, 1991; Stevens & Slavin, 1995; Calderón, Hertz-Lazarowitz, & Slavin, 1998) using a cooperative learning structure that incorporated individual accountability and group goals, providing a team reward based on the sum of the individual team members' progress.

The Reading Edge – Program Description

      The Reading Edge is a comprehensive literacy program for all middle grades students, from struggling to advanced, with the goal of preparing them to be strategic, independent and motivated readers and learners. *The Reading Edge* combines effective instructional practices, a coherent curriculum, and frequent informal assessment and feedback to students, with extensive professional development for teachers and instructional leaders. This enables middle school teachers to provide intensive reading instruction that emphasizes four key areas: metacognitive strategy use, cooperative learning, goal-setting and feedback, and classroom management.

      Since reading levels vary widely for this age group, students are assessed and grouped for instruction in classes at their instructional level. All reading classes meet during the same 60-minute period each day. Students are re-assessed quarterly to determine their current levels of performance. These assessment results allow teachers and students to monitor and discuss progress, and to move students immediately to a more challenging group. This structure allows for differentiated, targeted instruction, as well as rapid acceleration. It allows students who are struggling with decoding and phonics to work through well-structured texts with a high proportion of phonetically decodable words, while in other classes, students use novels or expository texts appropriate to their reading level to improve fluency and comprehension. Students receive regular feedback on their work, and set and review personal goals. As soon as students are ready, they move to the next level. Extensive training and ongoing coaching support within collaborative learning communities enable teachers to implement this aspect of the program efficiently and with integrity.

      Every *Reading Edge* lesson follows a regular pattern, but the instruction itself varies according to the nature of the text and the challenges it presents. Program developers carefully

choose readings that lead the students to relevant discoveries and practice opportunities.

Combining explicit instruction in metacognitive reading strategies with peer collaboration and

regular assessment and feedback builds students' confidence as they try out their new tactics.

Although lessons vary significantly in level of difficulty and purpose, all follow this structure:

Setting the Stage, Active Instruction, Teamwork, and Time for Reflection.

The three key areas of metacognitive strategy use, cooperative learning, and assessment

and feedback, are embedded in the everyday classroom routines that teachers use for instruction

and that students use to become better readers (Slavin, Daniels, & Madden, 2005). The following

sections describe how each of the key program areas is manifested in *The Reading Edge*.

Cooperative Learning in The Reading Edge

Cooperative learning refers to a wide variety of methods in which students work in small

groups (usually, about four members) to help one another learn. Extensive experimental

research on cooperative learning methods has found that these strategies generally increase

student achievement if they incorporate group goals and individual accountability (Slavin, 1995;

Slavin et al., 2003; Webb & Palincsar, 1996). Cooperative learning has been particularly

effective and extensively researched in middle schools (Roseth et al., 2008; Slavin et al., 2003).

Cooperative learning methods in which students have regular opportunities to discuss ideas with

partners, to help each other study, and to provide formative feedback to each other have been

successfully evaluated in several randomized evaluations in elementary and middle schools

(Slavin, 1977, 1978, 1979, 1995; Slavin & Karweit, 1984). Cooperative learning has also been

successfully evaluated many times as a means of introducing and practicing metacognitive skills.

For example, Meloth & Deering (1992, 1994) found that peers could help each other acquire

metacognitive strategies. Dansereau (1988) and O'Donnell (1996, 2000) studied "cooperative scripts," in which students took turns summarizing and evaluating each other's summaries. Fantuzzo, Polite, & Grayson (1990) developed and evaluated reciprocal peer tutoring strategies to help students study complex material.

In *The Reading Edge*, students work in teacher-assigned cooperative teams of four or five students. Each student is individually accountable for his or her own learning and there are no group grades. However, teams are rewarded when all members improve their performance compared to their past performance. Students set goals together, and with the support of practiced routines, they help each other learn new content, use, evaluate, and personalize strategies, and remain attentive to the task at hand. Teams also provide a safe environment for individuals to try out new ideas or admit when they are confused. Each team works to help each member achieve his or her "personal best" so there is always an equal opportunity for success – teams are not in competition with each other.

Metacognition in The Reading Edge

Numerous studies show that metacognition plays an important role in both learning to read and in learning new content through reading (Armbruster et al, 1987; Gertz, 1994; Langer & Neal, 1987). Research suggests that students who can assess their own knowledge and interest in a topic and choose and apply effective strategies to understand unfamiliar text on that topic can control their learning environment and successfully make meaning from what they read (Tei & Stewart, 1985).

Metacognitive strategies are directly taught in specific *Reading Edge* lessons, and regular use of strategies is supported by the routines built into every lesson. Early in every *Reading Edge*

lesson, students are presented with "The Big Question", a provocative question that students ponder and discuss over the course of the day's activities. With stems such as "Have you ever…" or "How would you handle this character's challenge…" or "Based on what you know about…", students must draw upon their own experiences and beliefs as well as details from the text they are reading in order to formulate their answer. This question often leads to student-generated questions of the same kind, and enriches team and partner discussions about the text. It also requires students to paraphrase or summarize what they have read, and encourages students to monitor their comprehension as they read.

Also in the beginning of every lesson, teachers complete a "Building Background" segment in which they activate prior knowledge with "KWL" charts that ask students to summarize what they know about the topic (K), what they want to know (W), and then, at the end of the lesson, what they learned (L). Teachers make connections to student interests, and hold conversations in which they discuss vocabulary important to the understanding of the text. They preview the text, and discuss text features that prompt students to make predictions about the main idea, topic, or theme, depending on the nature of the text.

During the "Active Instruction" portion of the lesson, the teacher engages students in targeted instruction on how to use a particular strategy or skill. For example, the teacher will read aloud a passage from the text and stop and "think aloud" about something significant, perhaps an example of foreshadowing, and how it influences her thinking as she reads. As she does this, she is breaking down a larger strategy into smaller steps so students can understand the otherwise invisible tools that good readers use. Now that this strategy has been modeled and discussed, students practice using it as they read, and later reflect upon whether or not it helped them.

Teachers use techniques for keeping the lesson moving at a brisk pace by posing important questions to the entire class, allowing for team discussion, and randomly calling on students to answer as representatives of their teams. Students learn that any team member could be called upon to answer for their team, so they must help each other prepare to answer every question (Kagan, 2001). For quick checks for understanding, teachers use whole-class responses such as "Thumbs-Up/Thumbs Down" to keep the pace of instruction brisk, and every child involved (Emmer, Evertson, & Worsham, 2003).

During Teamwork, students read some text silently and some aloud with a partner. They stop regularly to paraphrase what they just read, to share insights, and to clarify understanding. After reading, each team of 4 or 5 students uses another routine to discuss what they have read, and "Discuss and Defend" their answers to prepared "Team Talk Questions". Students have the opportunity to clarify their thinking, try out new ideas, use new vocabulary, and help someone else understand the text, all in the safety of a small collaborative group. During Teamwork time, the teacher circulates around the room to check for understanding, prompts and reinforces positive behavior, and conducts quick, informal conferences with partners or teams called "One-to-One's". During these interactions, the teacher can informally assess the students' grasp of the targeted strategy or skill.

Assessment and Feedback

At the beginning of every cycle (six days of instruction ending with a curriculum-based assessment), students receive a Learning Guide. On it, students record reading goals for each lesson and points they earn for classwork, homework, and tests that make up their grade for the cycle. The Learning Guide is a self-assessment tool that helps the students identify strengths and

weaknesses and set personal goals. It also helps students stay organized. Students keep track of their work as they complete it, and identify the work they still need to master. As the teacher visits each team during one-to-one conferences, she initials work that students have done well, and helps them identify next steps.

Teams can earn bonus points for demonstrating extra effort by participating in activities such as Book Club, in which students share their critiques of books they have read outside of school. In "Word Wise", students share how they have used their vocabulary words in new contexts. Students also learn to use a Team Mastery Process to prepare for the end of cycle test. This gives students time to try out new study skills in a personally meaningful context.

At the end of each cycle, students compare their current total score to their previous work. Teams receive "improvement points" for each member who increases his or her score, and the team is recognized in a whole class celebration. This is also a time for the whole class to review their reading goals for the cycle and discuss which strategies worked well for them, which ones did not, and why.

Every quarter, students take a standardized reading assessment. This information is added to the growing set of data about how students are performing. Students know that as soon as they show sufficient improvement in reading, they will move up to the next level, or even skip a level.

Methods

Sample

   The Reading Edge program was implemented in two majority-White, high-poverty, rural

middle schools, one in Ronceverte, West Virginia and one in Interlachen, Florida. The West

Virginia school served a student population in which 50% of students qualified for free lunch,

and in which 95% of students were White, 4% African-American, and 1% Native. At the Florida

school, 69% of students were eligible for free lunch, and the student population was 75% White,

8% African-American, 13% Hispanic, and 1% Asian or Native. There were two cohorts of sixth

graders, one with 405 students in 2005-06 and one with 383 students in 2006-07.

Design

   The study used a mixed methods approach, including a randomized experimental design

complemented by classroom observations. This combination of methods allowed researchers to

understand achievement within specific school contexts. Qualitative findings were reported by

Chamberlain, Daniels, Madden, & Slavin (2007).

   Schools were recruited in Spring, 2005. In exchange for their participation, they received

all *Reading Edge* materials and training at no cost. In the study years, control groups were

provided with books or assessment materials related to programs they were already using. Prior

to the 2005-06 school year, both schools allowed researchers to randomly assign 6th grade

teachers to treatment (*The Reading Edge*) or control conditions. Incoming 6th graders were

stratified by state reading assessment levels, then gender and ethnicity. Within strata, students

were randomly assigned to treatment or control conditions. Students in the first cohort were

pretested within the first four weeks of school, and then posttested in Spring, 2006. Identical

procedures were followed with second cohort of entering sixth graders, who were pretested in

Fall, 2006 and posttested in Spring, 2007.

Control Condition

Students randomly assigned to the control group received daily reading instruction using

whatever methods and materials they had used previously. Both control schools grouped

students into classes based on 5th grade state reading scores. At the West Virginia school,

students with low reading skills used Scholastic *READ 180* (a computerized reading program),

and the *Scholastic Read Aloud Anthology*. Larry Bell's '*Twelve Powerful Words*' were used in

all reading classes and levels. Students at more proficient reading levels participated in a

teacher-designed 'Literacy Circle' where, in groups of 5-6, they read and discuss novels. *Scott*

Foresman reading materials were used for non-fiction content. In the Florida school, low readers

used *Corrective Reading*, while their peers used *Scholastic Read XL.*

Measures

The Scholastic Reading Inventory (SRI), a widely used measure of reading, was used as

an achievement pretest in Fall, 2005. Since *Reading Edge* classrooms administer the SRI

quarterly, it was necessary to select a different posttest, to avoid a practice effect. The Gates-

MacGinitie Reading Test (MacGinitie, MacGinitie, Katherine, & Dreyer, 2000) was used as a

posttest. Its total score can be broken into two subscales, comprehension and vocabulary. Two-

day observations were conducted twice per year at each site, using a structured observation

protocol based on the CLASS instrument (LaParo & Pianta, 2003). The observation tool noted

and characterized the 4 instructional elements identified as key by program developers:

metacognitive strategy use, cooperative learning, goal setting and feedback, and classroom

management/student engagement. The resulting instrument was designed to register many ways

of implementing the four elements, so that their use in control classrooms would not be

overlooked.

Results

Reading Achievement

The main analyses combined data across the two cohorts. Initial analyses showed that

random assignment produced equivalent groups. There were no differences at pretest on the SRI

($F (1, 786) < 1$, n.s.), and chi square analyses showed no experimental-control differences in

race, free lunch eligibility, or special education status. Posttest Gates achievement data were

analyzed using analyses of covariance (ANCOVA), with SRI pretest scores as covariates. Table

1 summarizes the findings.

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TABLE 1 HERE

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Overall Effects

As shown in Table 1, there were significant experimental-control differences at posttest

on Gates Total Reading ($F (1, 786) = 7.59$, p=.006), controlling for pretests. There were also

significant differences on Comprehension ($F (1, 785) = 5.09$, p = .024) and on Vocabulary ($F (1,$

$785) = 7.88$, p = .005). Effect sizes (differences in adjusted means divided by the unadjusted

control group standard deviations) were modest: Gates Total (ES=+0.15), Gates Comprehension

(ES=+0.12), and Gates Vocabulary (ES=+0.15). A difference of +0.15 would be equivalent to increasing a test score from the 50th to the 56th percentile.

Effects by Pretest Levels

There is considerable discussion in the cooperative learning literature (e.g., Slavin, 1995; Webb & Palincsar, 1996) about whether cooperative learning disproportionately benefits high or low achievers. The argument is that low achievers benefit from the explanations they receive from high achievers, while high achievers benefit from "learning by teaching." While interactions between pretest levels and achievement gains have been seen in brief lab studies, large scale, extended classroom studies of cooperative learning generally find similar benefits for students at all levels of prior performance (see, for example, Slavin & Karweit, 1984).

The present study provided an opportunity to examine the effects of *The Reading Edge* intervention according to pretest levels. Students were divided into high, average, and low pretest groups according to their SRI pretest scores. Pretest by treatment interactions were then compiled. The results indicated no significant interactions between pretest and treatment.

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Table 2 Here

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Table 2 summarizes the outcomes by pretest levels. As the Table shows, pretest-adjusted effect sizes for total reading were +0.26 for low achievers, +0.15 for middle achievers, and +0.18 for high achievers.

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Table 3 Here

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Effects by Cohort

One of the questions asked in this second year of a two-year study was whether schools

would improve student outcomes in the second year of implementation of *The Reading Edge*.

Table 3 summarizes data on this question. As is clear from the Table, outcomes were nearly

identical in the two years. One reason for a lack of improvement over time is that there was

turnover of teachers in both study schools, so that all students were taught by teachers new to the

project. The remarkable similarity (and modest effect sizes) resemble the findings of the recent

Enhanced Reading Opportunities Study (Kemple, Corrin, Nelson, Salinger, Herrmann,

Drummond, & Strasberg, 2008), which also carried out large within-school randomized

evaluations of two similar reading interventions for struggling high school students. In the

Kemple study, effect sizes for one intervention were +0.09 for comprehension and +0.04 for

vocabulary, while for the other they were +0.09 and +0.01. Taken together, the present study and

Kemple et al. (2008) suggest that large randomized evaluations can reliably detect even small

impacts of educational interventions. This corresponds with an observation by Slavin & Smith

(2008), using data from 185 studies of mathematics programs, that as sample sizes of educational

interventions grow, the standard deviations of their effect sizes diminish. They found a standard

deviation of effect sizes for studies with sample sizes of less than 100 to be 0.40, but the standard

deviation of effect sizes for studies with sample sizes of 2000 or more was only 0.09. What this

implies is that large randomized studies can reliably detect even modest program impacts.

Discussion

While effect sizes were modest, the findings of this randomized experiment show promise for *The Reading Edge* program. Effects were consistent for students of all levels of prior achievement, and were consistent in two cohorts of sixth graders.

The findings are particularly encouraging in that they were detected *despite* a within-school randomized study. Development of high quality implementation in the four key areas was inhibited due to the isolation of the treatment teachers as a result of a within-school randomized design. That is, these teachers lacked the support of other implementors or a full-time facilitator, as would be standard in a typical implementation. Additionally, the within-school randomization divided students in such a way that prohibited regrouping during common reading periods. Despite these implementation constraints, observation data suggest that while implementation of four key, research-based components of reading instruction was generally mechanical in *Reading Edge* classrooms, it differed substantively from that in the control condition.

Contrary to expectations, treatment effects were nearly identical in each of two study cohorts. School staff were not able to improve the quality of implementation and outcomes in the second year, but this may be due to teacher turnover. The remarkable similarity in outcomes in the two study years adds evidence that large, randomized evaluations can reliably detect modest effects of educational interventions.

Future research on *The Reading Edge* should address many issues beyond the basic findings reported here. First, research with a much larger sample of schools could allow for random assignment of schools, rather than students within schools. This would create conditions more like those in practice, where *The Reading Edge* is invariably used as a schoolwide

intervention. A larger sample would also allow for determination of correlations between teachers' quality and completeness of implementation of each program element and students' achievement growth, as well as other mixed-method research to explain how and under what conditions the program produces positive effects.

Future studies should also continue the interventions over a longer time period, both to determine long-term impacts and to assess program outcomes with teachers who are experienced with the interventions, beyond the turbulent early stages of a new program. Multi-year studies of the *Success for All* elementary program (e.g., Madden et al., 1993; Borman et al., 2007) typically find much better outcomes with each successive year of program implementation (see Slavin & Madden, 2001). The same may be true of *The Reading Edge*.

Schools serving disadvantaged young adolescents need replicable, reliable interventions capable of helping students become capable and strategic readers. Larger impacts may be seen in schoolwide implementations, in implementations with experienced teachers, and in longer implementations, and much work remains to be done to continuously improve the model itself, but the research reported here gives hope that these efforts will be worthwhile.

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Table 1

Combined Achievement Outcomes across Two Cohorts

	N	Mean	(Std)	Adjusted Mean	Effect Size
SRI Pretest					
The Reading Edge	405	865.9	(191.7)		
Control	383	881.4	(187.5)		
Gates Total					
The Reading Edge	405	58.2	(16.7)	58.7	0.15**
Control	383	56.7	(16.4)	56.2	
Gates Comprehension					
The Reading Edge	405	29.7	(9.5)	29.9	0.12*
Control	383	29.0	(9.6)	28.7	
Gates Vocabulary					
The Reading Edge	405	28.6	(8.3)	28.8	0.15**
Control	383	27.7	(8.1)	27.5	

* p<.05
** p<.01

Table 2
Combined Achievement Outcomes by Pretest Levels

	N	Mean	SD	Adjusted Mean	Effect Size
		Low Achievers			
SRI Pretest	E 143	664.48	(121.57)		
	C 117	672.58	(135.76)		
Gates Total	E 143	46.00	(12.58)	55.23	+0.26
	C 117	43.04	(12.88)	51.91	
Gates Comprehension	E 143	22.98	(7.26)	27.61	+0.26
	C 117	21.27	(7.43)	25.71	
Gates Vocabulary	E 143	23.02	(6.95)	27.63	+0.20
	C 117	21.77	(7.02)	26.20	
		Average Achievers			
SRI Pretest	E 128	877.00	(30.66)		
	C 133	877.00	(28.81)		
Gates Total	E 128	58.08	(13.88)	57.92	+0.15
	C 133	56.17	(12.76)	56.01	
Gates Comprehension	E 128	29.72	(7.97)	29.65	+0.07
	C 133	29.13	(8.06)	29.05	
Gates Vocabulary	E 128	28.35	(7.11)	28.27	+0.20
	C 133	27.04	(6.44)	26.96	
		High Achievers			
SRI Pretest	E 134	1070.12	(96.13)		
	C 133	1069.53	(101.69)		
Gates Total	E 134	71.42	(12.56)	62.73	+0.18
	C 133	69.27	(12.19)	60.60	
Gates Comprehension	E 134	36.75	(7.76)	32.40	+0.16
	C 133	35.58	(7.31)	31.24	
Gates Vocabulary	E 134	34.67	(6.27)	30.34	+0.16
	C 133	33.68	(6.23)	29.36	

Table 3
Comparison of Adjusted Means and Effect Sizes, Cohorts 1 and 2

	Cohort 1		Cohort 2	
	Mean	ES	Mean	ES
Gates Total				
The Reading Edge	57.9	0.14^{α}	58.4	0.15^{α}
Control	55.8		57.9	
Gates Comprehension				
Reading Edge	29.9	0.11	29.4	0.13^{α}
Control	28.9		29.1	
Gates Vocabulary				
The Reading Edge	28.1	0.14*	29.0	0.14^{α}
Control	26.9		28.8	

α p< .10
* p< .05