Effectiveness of McGraw-Hill's Jamestown Reading Navigator

A Study of Intensive Reading Classes in Miami-Dade High Schools

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Introduction

Objective. Determine the effectiveness of the Jamestown Reading Navigator (JRN) program for students in grades 9 and 10 in the Miami Dade Public School District (MDCSD).

Central question. Do students participating in the JRN program attain higher reading achievement scores than comparable students who are not participating in JRN?

Additional methodological goal. Develop and test methods of treatment group identification that rely on combining the information of software logs and district records.

JRN is a computer-based reading intervention program designed for middle and high schools. The online component directly instructs, assesses, and provides practice for students on vocabulary, reading comprehension, writing, and oral fluency. The Jamestown print-based component provides teachers with resources to construct lessons that reinforce and reteach the skills that students receive through the online program (McGraw-Hill 2009). JRN was implemented in MDCSD during the 2008–2009 school year. It is used in Intensive Reading (IR) classes enrolling students who read two or more years below their grade level.

Methods

Design. Quasi-experimental comparison group
Subjects. Intervention (IR) students in grades 9 and 10
Outcome measure. Reading comprehension performance on state test (FCAT scale score)
Sample construction strategy was aimed at creating a set of comparable classrooms. Only schools that had teachers who adopted JRN and those who taught IR without it were left in the sample. A large number of schools that adopted JRN in all IR classrooms or did not adopt it any of such classrooms were excluded because such schools could have unobservable characteristics that affected treatment status.
Identification of treatment and comparison groups relied on linking the test data files provided by the district and student logon records generated by the online component of JRN. Names of teachers in both sources were matched using a soundex algorithm which produced a list of closest matches for each teacher, which was then post-processed to identify the most likely match. This procedure allowed identifying treatment classrooms without surveying teachers or requesting administrative data from the district.
Analytical strategy. Hierarchical linear mixed model, with random effects for schools and classes. Impact is estimated by comparing the reading achievement of treatment and comparison groups controlling for the effects of covariates, including the pretest, and adjusting for clustering of students in classes and schools. Separate estimates for grades 9 and 10 to accommodate for the differences in test contents and potential differences in factors determining selection into IR classes.

Data

Sources.
1) Student records (district data) from 2007–2008 and 2008–2009 including student demographics, FCAT reading scores, and the English/ language arts teacher's name.
2) JRN student data (software logs) that show the names of teachers whose students used JRN during the 2008–2009 school year.
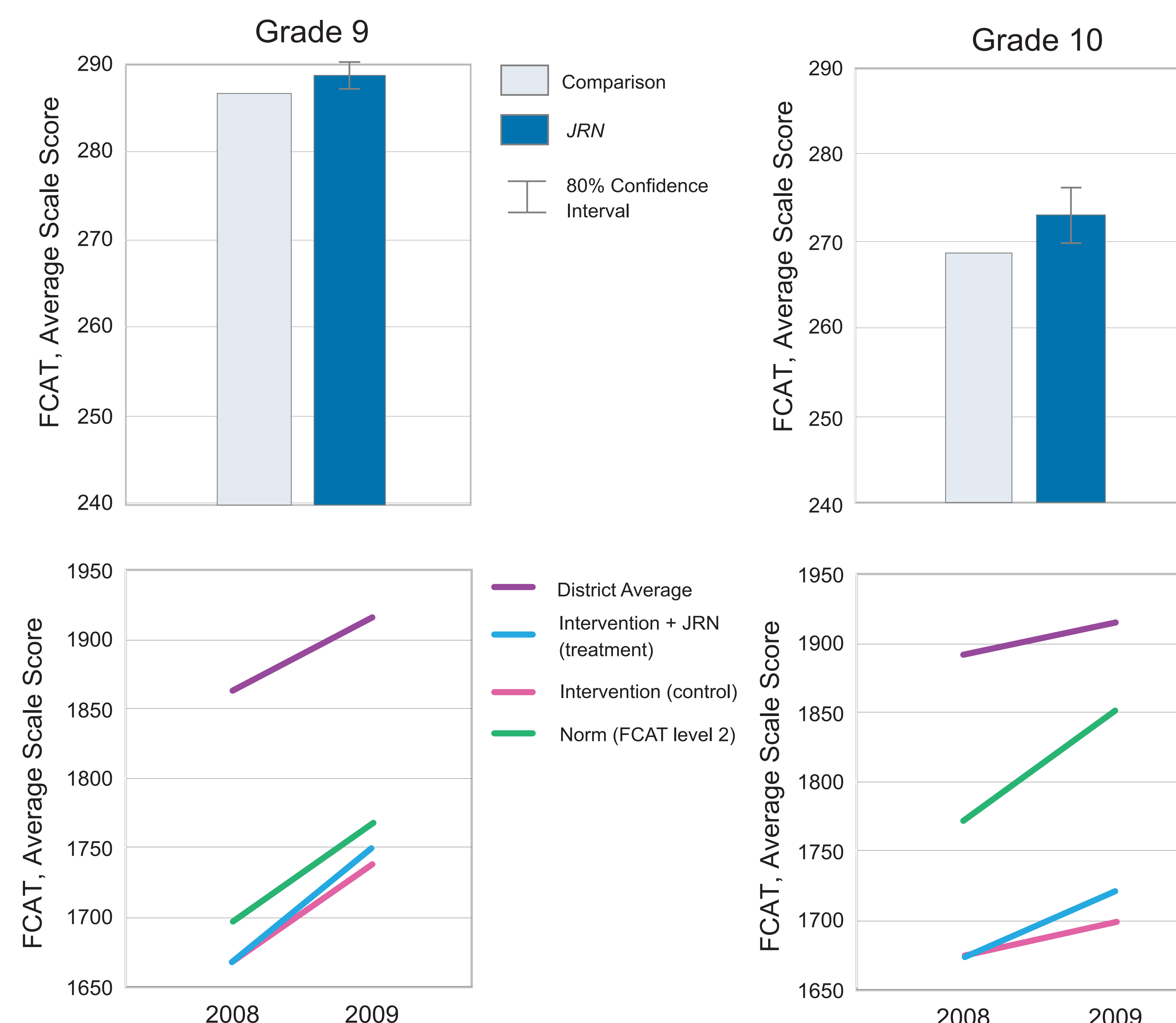
Sample size and composition.

Schools=23	Classes		Students	
	JRN	Comparison	JRN	Comparison
Grade 9	30	24	1769	862
Grade 10	52	38	3391	1475

Balance. This analytical sample is characterized by the baseline equivalence of the student characteristics (less than 0.25 pooled standard deviation) except the mean pretest and the proportion of African Americans among 9th graders.

Results

	Impact on reading (FCAT)	Effect size	*p* value
Grade 9	2.06	0.06	.092
Grade 10	4.32	0.11	< .001

	Developmental scale score		2008-2009 growth	Relative growth versus:		
				Comparison group	District average	Norm
Grade 9	2008 FCAT	2009 FCAT				
District average	1863	1915	52			
Comparison (Intervention)	1668	1737	70		9%	-23%
Treatment (Intervention+JRN)	1668	1749	81	17%	15%	19%
Norm (FCAT level 2)	1696	1772	76			
Grade 10						
District average	1892	1914	22			
Comparison (Intervention)	1673	1697	24		1%	-57%
Treatment (Intervention+JRN)	1673	1722	48	102%	12%	-32%
Norm (FCAT level 2)	1772	1852	80			

Grade 9 / Grade 10 — FCAT, Average Scale Score. Comparison, JRN, 80% Confidence Interval. District Average, Intervention + JRN (treatment), Intervention (control), Norm (FCAT level 2).

Discussion

This study shows that JRN has a positive impact on reading achievement in the Intensive Reading classes in MDCSD's high schools. While the effect for 10th grade appeared stronger than for 9th grade, these differences should be taken with caution because the number of 9th graders in the analytical sample was substantially lower than the number of 10th graders.

Evaluation of JRN impact from the perspective of practical significance yields mixed results: it produces a significant increase in growth (102% compared to intervention 10th graders) and therefore increases effective learning time but does little to reduce the gap between the intervention students and district average performance or grade level reading norms.

While this study provides the Miami-Dade schools with evidence of the benefits of JRN, we must be cautious in generalizing these results. Additional studies of JRN implementation across a variety of school districts, a more balanced representation of grade levels, and a larger number of years after the program adoption would have the potential to produce more accurate estimates of the impact of JRN.