

The Relationship Between i-Ready and PSSA Math Achievement

Aaron Orzech, Ed.D.

INTRO

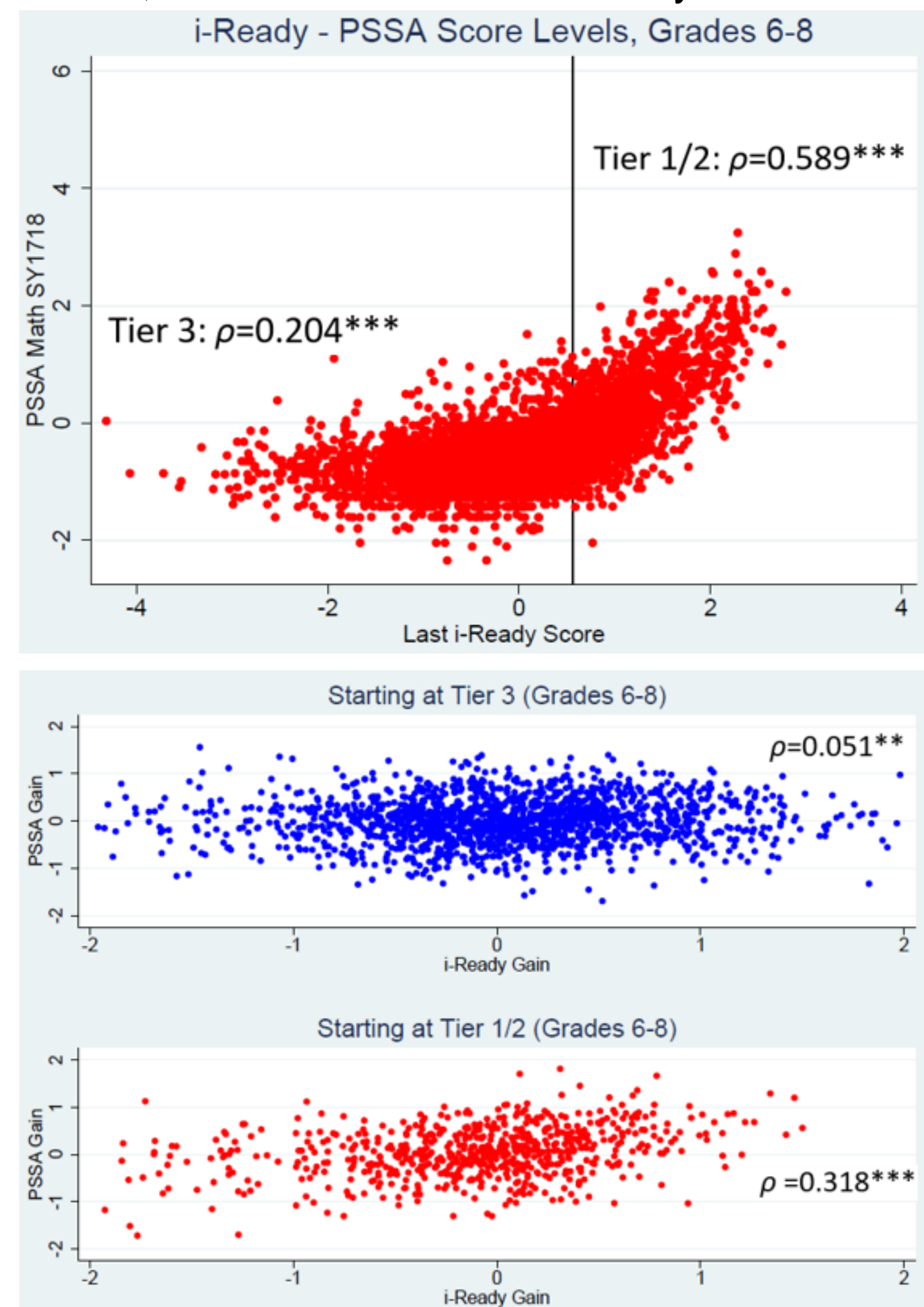
i-Ready®, a computer-adaptive online tutoring program, is popular in the School District of Philadelphia. Although there is correlational evidence that i-Ready® and PSSA (Pennsylvania System of School Assessment) tests cover similar content, there is little or no research investigating whether the relationship between i-Ready® and PSSA achievement is the same for all students, or whether i-Ready usage is related to gains on PSSA tests. I investigate these questions, focusing on i-Ready® and PSSA Math scores.

METHODS

1. N=14,125 students (grades 3-8) in 48 schools in SY2017-18
2. Data include i-Ready diagnostic scores (before and after as available), PSSA scores (previous and current year), and standard demographic variables
3. i-Ready scores were regressed on PSSA scores, and i-Ready gain scores on PSSA gain scores (YoY). PSSA scores were also regressed on previous year's PSSA scores, allowing the relationship to vary with i-Ready usage.

RESULTS

Tier 1 and 2 students are fewer than two years below grade level, and Tier 3 more than two years below.



For students fewer than two years below grade level, i-Ready scores are highly correlated with PSSA scores, but the correlation between i-Ready growth and PSSA growth is much weaker, and this analysis finds no evidence that i-Ready usage is related to increases, or decreases, in PSSA scores.

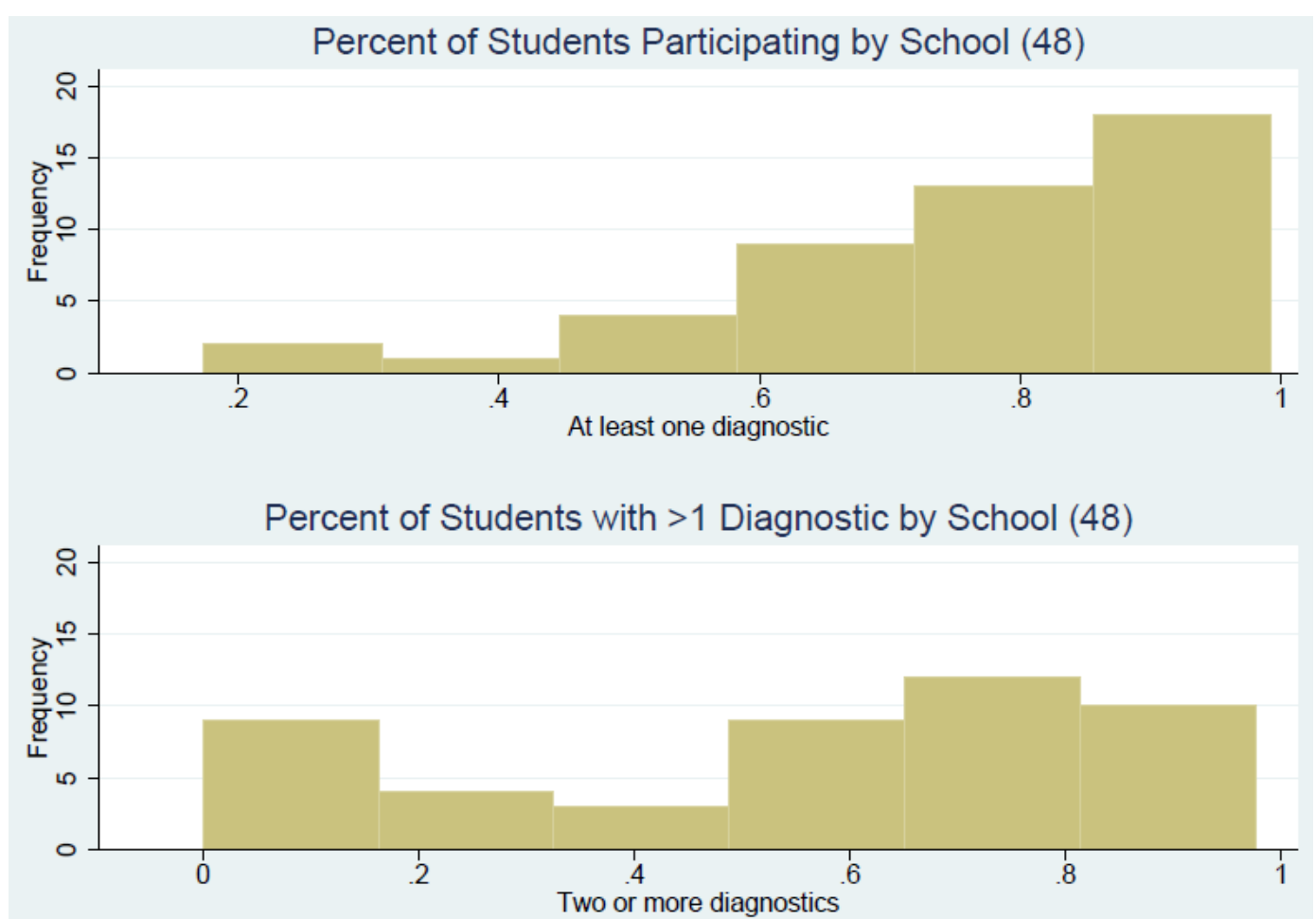


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It appears that the i-Ready diagnostic can detect substantial variation among students who are more than two years below grade level, to whom the PSSA assigns uniformly low scores.

Making within-year gains on i-Ready is, at best, weakly correlated with making year-on-year gains on the PSSA test.

There is considerable variation both within and between schools in how intensely i-Ready is used by students. The relationship between prior year and current year PSSA scores does not depend on whether a student used i-Ready, or what percentage of a school's students used i-Ready. That is, this analysis finds no evidence that i-Ready usage is related to increases or decreases in PSSA scores.



2017-18 Math PSSA Score as a Function of 2016-17 Score, i-Ready Usage, and the Interaction of 2016-17 Score with i-Ready Usage, by PSSA Performance Level¹

	(1)	(3)	(2)	(4)
PSSA Score SY1617	0.812*** (21.95)	0.417*** (14.29)	0.811*** (27.22)	0.402*** (16.96)
% of students in school with at least one diagnostic	-0.0129 (-0.22)	-0.0128 (-0.25)		
Student had at least one diagnostic			-0.0384 (-0.70)	0.0178 (0.54)
Interaction of PSSA Score with i-Ready Usage ²	0.0948 (1.78)	0.0033 (0.08)	0.0470 (1.33)	0.0000 (0.00)
N	4,398	9,595	4,398	9,595
PSSA Performance Level	Basic/Prof./Adv. Below Basic/Basic/Prof./Adv. Below Basic			

Notes:
t statistics in parentheses
* p<0.05 ** p<0.01 *** p<0.001
¹Models include controls for student demographics, and models 3 and 4 include school fixed effects. Standard errors are clustered at the school level.
²This is the interaction of SY1617 score with the percentage of students having one or more i-Ready diagnostic for models 1 and 2, and with a student having one or more i-Ready diagnostic for models 3 and 4.