Every Student Succeeds Act (ESSA) Tier 3 Evidence for Istation Early Reading

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JOHNS HOPKINS
SCHOOL *of* EDUCATION

Center for Research and Reform in Education

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The [Center for Research and Reform in Education (CRRE)](#) is a research center affiliated with the School of Education at Johns Hopkins University (JHU) that specializes in education program evaluations in K–12. Istation contracted with the CRRE at JHU to conduct a study of the predictive validity of Istation's Early Reading (ER) program (https://www.istation.com/Reading) in the state of Idaho.

This brief provides a summary of Tier 3 or "promising" evidence of Istation's Early Reading program in improving K–3 student performance in reading and English language arts (ELA). For more details, please reference the [full technical report](#).

Methods

This quasi-experimental study examined whether students who attended schools that piloted Istation's Early Reading program during the 2017–18 school year had higher average achievement than students who did not attend pilot schools. Performance in reading and English language arts (ELA) was compared for students attending Istation pilot schools and non-pilot schools.

Sample

- 8,408 K–3 students in 32 Istation pilot schools
- 46,511 K–3 students in non-pilot or comparison schools
- 77% of students were White and 17% were Latino
- 50% of students were economically disadvantaged
- 9% received special education services
- 8% of students were English learners

Istation Usage

Only schools that used Istation at recommended levels (400 minutes per student on average) or more were included in the pilot school sample, which consisted of 32 out of the 82 possible Istation pilot schools. Istation usage measured at the school level ranged from:

- An average of between 7.0 and 33.5 hours per student spent on both Istation progress monitoring and online curriculum, and

- An average of between 4.3 and 35.4 hours per student spent on Istation online curriculum for students who used the curriculum.[1]

Measures

- The former [Idaho Reading Indicator (IRI)](#) was administered bi-annually to Idaho students in grades K–3 in the 2017–18 school year. Istation's ISIP became the new IRI in the 2018–19 school year. The IRI composite scores were integer values that ranged from 1 to 3. Sub-tests included letter naming fluency, letter sound fluency, and a reading curriculum-based measure, and each of these had a different range of values.
- The Idaho Standards Achievement Test ([ISAT)](#) in ELA was administered to third grade students in spring 2018. Students were scored in terms of scale scores and four performance levels (e.g., below basic, basic, proficient, or advanced).

Analytic Approach

Hierarchical linear modeling with students nested within schools was used to compare student achievement in reading and ELA for students in pilot and comparison schools. The model controlled for baseline student achievement from fall 2017, as well as student and school background characteristics. Istation pilot school status was determined at the school level by a binary indicator (yes or no). The analytic approach was identical to that outlined in the [full technical report](#) with the exception that only the pilot schools that used Istation at recommended levels were retained in the pilot school sample.

Results

Istation Early Reading had a small and marginally statistically significant effect on student achievement in reading and ELA.

As shown in Table 1, use of the Istation Early Reading program at recommended levels had a small and marginally statistically significant (p<.10) effect on student achievement in reading and ELA. In the spring of 2018, students in Istation pilot schools outperformed students in comparison schools by 0.04 points on the former IRI and by 1.07 points on the ISAT ELA, on average. These differences translated to effect sizes of +0.06 on the former IRI and +0.05 on the ISAT ELA. These effect sizes are consistent with those found in other studies of supplemental educational technology

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[1] Only 3% of students in the pilot schools who participated in Istation Early Reading did not participate in the curriculum. Therefore, the estimates of time spent on various Istation activities were based on slightly different student samples.

programs (Ross & Morrison, 2020) and other "lighter touch" interventions (Jacob, Doolittle, Kemple, & Somers, 2019).[2]

Table 1: Regression results indicating student achievement for students in pilot and comparison schools

	Average comparison score	Average pilot difference	Standardized effect size
Former IRI	2.62	0.04~ (0.02)	0.06
ISAT ELA	241.16	1.07~ (0.57)	0.05

NOTES—1. ~p<.10. 2. The numbers in parentheses are the standard errors. 3. The standardized effect size is in terms of standard deviations.

In conclusion, there is Tier 3 or "promising" support for Istation's Early Reading program in improving K–3 student achievement in reading and ELA.

This study meets the criteria for quasi-experimental studies as outlined in the What Works Clearinghouse standards. Findings were only marginally statistically significant at p<.10, however. Therefore, findings show "promising" evidence under ESSA criteria. The following appendix shows that the criteria for quasi-experimental studies were met.

This study cannot rule out the possibility that pilot schools that used Istation at recommended levels systematically differed from comparison schools in unobservable ways, however. As such, this study provides correlational, as opposed to causal evidence, on the efficacy of Istation Early Reading in improving student performance in reading and ELA.

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[2] Ross, S. M., & Morrison, J. R. (2020). Achieving better educational practices through research evidence: A critical analysis and case illustration of benefits and challenges. *ECNU Review of Education*, 2096531120916742.
Jacob, R. T., Doolittle, F., Kemple, J., & Somers, M. A. (2019). A framework for learning from null results. *Educational Researcher*, *48* (9), 580-589.

Appendix

Table 2: Baseline equivalence table

	Pilot student N	Comparison student N	Unadjusted pilot SD at pretest	Unadjusted comparison SD at pretest	Pilot v comparison difference at pretest	Standardized mean difference at pretest
Former IRI	8403	46328	0.79	0.77	-0.04	-0.05
ISAT ELA	6030	33682	0.80	0.78	-0.04	-0.05

NOTES—1. SD=standard deviation. 2. The pretest was the Fall 2017 IRI score. 3. The standardized mean difference at pretest was calculated using the pooled standard deviations.

Table 3: Program effects table

	Pilot student N	Comparison student N	Unadjusted pilot SD	Unadjusted comparison SD	Pilot v comparison difference	Standardized mean difference
Former IRI	8403	46328	0.71	0.69	0.04~	0.02
ISAT ELA	6030	33682	22.47	22.03	1.07~	0.57

NOTES—1. ~$p<.10$. 2. SD=standard deviation. 3. The standardized mean difference was calculated using the pooled standard deviations.