

Research Brief

Relationship between the Independent Reading Level Assessment (IRLA) and Interim ELA Assessments: Concurrent Validity Evidence

American Reading Company's Independent Reading Level Assessment® (IRLA) is a standards-based formative assessment framework that is used on a regular basis throughout the year to measure the extent to which students independently demonstrate reading proficiency. Researchers have conducted a series of validity studies across the United States to examine the relationship between the IRLA and several commonly used interim ELA assessments. Findings from 15 studies provide strong evidence of the IRLA's concurrent validity. Correlations between students' scores on the IRLA and criterion measures for K–8 students consistently exceed .70, the threshold for what is considered a strong correlation. The subset of studies that examined correlations over multiple school years showed that the correlations are stable over time. These strong, positive, and statistically significant correlations indicate that the IRLA measures what it is designed to measure — reading proficiency.

This research brief includes an overview of the IRLA, an explanation of why it is important to examine the validity of educational assessments, a description of the study methods, and findings from the validity studies.

Independent Reading Level Assessment (IRLA)

The IRLA outlines a research-based, transparent progression of skills mapped to national and state standards. Designed to work for every student at every reading level, the IRLA delivers specific and actionable data that tell the teacher where a student is, why, and the sequence of skills and behaviors needed to learn next to accelerate reading growth.

IRLA scores show students' relative placement along a continuum of grade-level proficiency. A risk status is used to identify the intensity of student need. Students who have demonstrated reading proficiency at or above their grade level are considered "proficient" and are not likely to be at risk for academic difficulties. Students who need to make more than a year of growth in one year's time are assigned an "at risk" designation that alerts teachers that the student may need additional supports to make sufficient accelerated progress. Students reading significantly below grade level are assigned "emergency" status. These students need multiple years of growth per year to gain grade-level proficiency and require the most intensive supports to make accelerated progress.

Validity

Validity is the most fundamental consideration in evaluating an assessment. Validity is the degree to which evidence supports interpretations of test scores for a given purpose.¹ The process of validation involves accumulating relevant evidence over time to provide a sound basis for the proposed score interpretations and is the responsibility of the test developer.²

The IRLA is used to monitor students' reading progress and identify students who have not yet achieved grade-level proficiency and are at risk for academic difficulties. Thus, one particularly relevant form of validity evidence is the extent to which performance on the IRLA correlates with performance on other reading assessments, which are called criterion measures.

Correlation coefficients can range from -1.0 to $+1.0$, with values close to ± 1.0 indicating a strong relationship. Positive correlations indicate that when students score high on one assessment, they also tend to score high on the other, and similarly, when students score low on one assessment, they also tend to score low on the other. In education research, correlation coefficients of .70 or greater are considered strong; coefficients ranging from .50 to .69 are considered moderate, and coefficients less than .50 are

¹ American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (Eds.). (2014). *Standards for educational and psychological testing*. American Educational Research Association.

² Ibid.

considered weak.³ A strong positive correlation between two assessments provides evidence that the two assessments are measuring similar constructs. When an assessment is strongly correlated with several different criterion measures, there is greater confidence that results can be generalized to other measures of student proficiency.

Methods

This brief presents concurrent validity evidence which shows that the IRLA measures what it is designed to measure (reading proficiency). The 15 studies described in this brief utilized data provided by partner school districts. In all studies, the assessments were administered independently by school district personnel using standard protocols. ARC researchers calculated the statistical correlation⁴ between students' scores on the IRLA and the criterion measure from the same testing window. Each study examined correlations during two or more testing windows over a given school year or over multiple years. Findings are organized by criterion measure, beginning with a brief description of the measure.

Findings

i-Ready Diagnostic Reading

The i-Ready Diagnostic tests are published by Curriculum Associates. The i-Ready Diagnostic Reading assessment is a computer-adaptive assessment that measures a series of early reading skills codifying students' performance and progress toward reaching grade level.⁵

Connecticut: This study was conducted in a midsize Connecticut school district that began using ARC Core in the 2018–2019 school year. District enrollment includes 31% English Learners, 20% Students with Disabilities, and 73% Eligible for Free/Reduced-Price Meals. In the first year of the study, data from Grades K–5 were analyzed, and in the second year, data from Grades K–8 were examined. Despite fluctuations in the number of students who were administered the assessments during the six testing windows, correlations between students' IRLA and i-Ready scores were strong and statistically significant (see Table 1).

³ Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). *Applied statistics for the behavioral sciences* (5th ed.). Houghton Mifflin.

⁴ The Pearson Product Moment Correlation was used.

⁵ i-Ready. (n.d.). Retrieved June 10, 2022, from <https://www.curriculumassociates.com/programs/i-ready-assessment/diagnostic>.

Table 1. IRLA-i-Ready ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2020–2021 Gr. K–5	228	.859*	1257	.804*	798	.875*
2021–2022 Gr. K–8	1661	.879*	2209	.883*	2161	.882*

* $p < .001$

Michigan: This study was conducted in a midsize Michigan district that began implementing ARC Core in 2022–2023. This district serves a population that is 50% Nonwhite; 78% of students are classified as Economically Disadvantaged and 10% are English Language Learners. The correlation between students' IRLA and i-Ready scores were strong for the fall, winter, and spring testing windows of this Year 1 ARC Core implementation (see Table 2).

Table 2. IRLA-i-Ready ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2022–2023 Gr. K–8	1246	.856*	1330	.865*	1361	.847*

* $p < .001$

New York: This study was conducted in a midsize New York school district during their first-year ARC Core implementation. This study included students in K–2, of whom 14% are Nonwhite; 28% are classified as Economically Disadvantaged and 1% are English Language Learners. The correlations between students' scores on IRLA and i-Ready were strong and statistically significant for the fall, winter, and spring testing windows (see Table 3).

Table 3. IRLA-i-Ready ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022 Gr. K–2	678	.850*	651	.877*	904	.884*

* $p < .001$

Oregon: This study was conducted in a midsize Oregon school district with a student population that is 77% White, 13% Hispanic, and 10% other race/ethnicity; 21 languages are spoken, more than 95% of students are eligible for Free/Reduced-Price Lunch, and 14% are classified as Students with Disabilities. In 2021–2022, the study examined data from K–2 classrooms piloting the IRLA. In 2022–2023, the study included all K–2 classrooms and Grades 3–5 classrooms piloting the IRLA. Due to the nature of the pilot, fewer students were administered the assessments during the spring 2022 testing window. The correlations between students' IRLA and i-Ready scores were strong and statistically significant for all six testing windows (see Table 4).

Table 4. IRLA-i-Ready ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022 Gr. K–2	237	.812*	258	.845*	95	.786*
2022–2023 Gr. K–5	1355	.833*	1925	.855*	1971	.862*

* $p < .001$

Washington: This study was conducted in a large school district in Washington that began implementation of ARC Core in the 2021–2022 school year. This study included students in Grades K–5, of whom 82% are Nonwhite, 40% are English Language Learners, and 14% are classified as Students with Disabilities. The correlations between students' IRLA and i-Ready scores were strong and statistically significant for the fall, winter, and spring testing windows of the school year (see Table 5).

Table 5. IRLA-i-Ready ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022 Gr. K–5	4216	.856*	6843	.862*	7209	.863*

* $p < .001$

Measures of Academic Progress (MAP) Growth

The Measures of Academic Progress (MAP) tests are published by the Northwest Evaluation Association (NWEA), a division of Houghton Mifflin Harcourt. The MAP Growth reading assessment is a computer-adaptive test that includes items across the grade-level spectrum for the purpose of pinpointing a student's reading skills relative to grade-level expectations.⁶

Illinois Study 1: This study was conducted in a midsize school district in Illinois that began using ARC Core in the 2021–2022 school year. The district serves a population of students that is 61% Nonwhite; 36% of students are classified as Low Income and 28% are English Language Learners. IRLA and MAP scores from five testing windows across the first two years of ARC Core implementation were examined. The correlations between students' scores on the two measures were strong and statistically significant (see Table 6).

Table 6. IRLA-MAP ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022 Gr. K–5	1584	.879*	1683	.888*	1695	.884*
2022–2023 Gr. K–5	1661	.900*	1709	.891*	-	-

* $p < .001$

Illinois Study 2: This study was conducted in a small school district in Illinois that began using ARC Core in the 2022–2023 school year. The district serves a population of students that is 96% Nonwhite; 74% of students are classified as Low Income and 36% are English Language Learners. During the first year of implementation, the correlations between students' IRLA and MAP scores were strong and statistically significant for the fall, winter, and spring testing windows (see Table 7).

Table 7. IRLA-MAP ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2022–2023 Gr. K–7	1498	.829*	1484	.834*	1585	.854*

* $p < .001$

⁶ NWEA. (2019). MAP® Growth™ technical report. Portland, OR.

Minnesota: A 2014 study conducted by Measurement Incorporated⁷ examined data from K–5 students in one Minnesota elementary school across two academic years. The school serves a population of ethnically and linguistically diverse students with nearly 75% qualifying for Free/Reduced-Price Meals. The study found very strong correlations between students’ scores on the IRLA and MAP across the five testing windows (see Table 8).

Table 8. IRLA-MAP ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2012–2013 Gr. K–5	522	.88*	522	.88*	522	.88*
2013–2014 Gr. K–5	736	.88*	736	.90*	-	-

* $p < .001$

Nebraska: This study was conducted in a small school district in Nebraska that began using ARC Core in the 2020–2021 school year. The district serves a population of students that is 28% Nonwhite; 43% of students are classified as Low Income. IRLA and MAP scores from five testing windows across the first two years of ARC Core implementation were examined. The correlations between student scores on the two measures were strong and statistically significant (see Table 9).

Table 9. IRLA-MAP ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2020–2021 Gr. K–8	365	.804*	336	.781*	402	.832*
2021–2022 Gr. K–8	373	.891*	396	.878*	-	-

* $p < .001$

Washington: This study was conducted in a midsize district in Washington that has been using ARC Core since the 2019–2020 school year. This district’s enrollment includes 49% Hispanic/Latino students and 45% White students; 63% of students are classified as Low Income and 23% are English Language Learners. Correlations between students’ IRLA and MAP scores in the fall and spring testing windows of the 2021–2022 school year were strong and statistically significant (see Table 10).

⁷ Griswold, A., & Bunch, M. (2014). A study of the Independent Reading Level Assessment framework. Measurement Incorporated. Durham, NC.

Table 10. IRLA-MAP ELA Correlation Coefficients

	Fall		Spring	
	n	r	n	r
2021–2022				
Gr. 6	39	.848*	123	.747*
Gr. 7	216	.789*	229	.830*
Gr. 8	185	.760*	263	.724*

* $p < .001$

Star Reading

The Star assessments are published by Renaissance. Star Reading is a computer-adaptive assessment that measures reading skills as students progress from Grades K–12.⁸

Rhode Island Study 1: This study was conducted in a large school district in Rhode Island that began using ARC Core in the 2021–2022 school year. The district serves a population of students that is 92% Nonwhite; 89% of students are classified as Low Income and 35% are English Language Learners. The study found strong and statistically significant correlations between scores on the IRLA and Star Reading in the fall, winter, and spring testing windows of the 2021–2022 school year (see Table 11).

Table 11. IRLA-Star ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022						
Gr. K–8	9316	.820*	5293	.842*	9347	.783*

* $p < .001$

Rhode Island Study 2: This study was conducted in a midsize school district in Rhode Island that began using ARC Core in the 2020–2021 school year. The district serves a population of students that is 81% Nonwhite; 98% of students are classified as Low Income and 47% are English Language Learners. The study found strong and statistically significant correlations in the fall, winter, and spring testing windows of the 2021–2022 school year (see Table 12).

⁸ Renaissance Star Reading. (n.d.). Retrieved January 19, 2023, from <https://www.renaissance.com/products/star-reading/>.

Table 12. IRLA-Star ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2021–2022 Gr. 1–8	998	.837*	1183	.814*	1277	.751*

* $p < .001$ **FastBridge aReading and AUTOreading**

The FastBridge assessments are published by Illuminate Education. aReading is a computer-administered adaptive screener that measures broad reading ability and predicts overall reading achievement. Items target concepts of print, phonological awareness, phonics, vocabulary, and comprehension. AUTOreading assesses accuracy and automaticity with phonics, spelling, and vocabulary skills.⁹

Wyoming: This study was conducted in a small Wyoming school district that began using ARC Core during the 2022–2023 school year. This district's population includes 88% White students, 8% Hispanic students, and 4% students of another race/ethnicity. District-wide, 13% are classified as Students with Disabilities and 42% are classified as Low Income. The correlations between the IRLA and both the aReading and AUTOreading assessments in the fall, winter, and spring testing windows of 2022–2023 were strong and statistically significant (see Tables 13 and 14).

Table 13. IRLA-aReading ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2022–2023						
Gr. 2	40	.854*	42	.866*	42	.900*
Gr. 3	63	.802*	65	.843*	66	.837*
Gr. 4	43	.769*	43	.779*	44	.769*
Gr. 5	47	.773*	47	.711*	47	.823*

* $p < .001$

Table 14. IRLA-AUTOreading ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	r	n	r	n	r
2022–2023						
Gr. 4	43	.796*	44	.796*	44	.791*
Gr. 5	47	.756*	47	.741*	47	.706*

* $p < .001$

⁹ FastBridge. (n.d.). Retrieved February 27, 2024, from <https://www.illuminateed.com/products/fastbridge/>.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS): mCLASS, DIBELS 8th Edition

DIBELS 8th Edition, published by Amplify, is a set of measures used to assess the acquisition of literacy skills. Five of the six subtests are administered to students individually; the sixth subtest is group-administered.¹⁰

New Jersey: This study was conducted in a midsize New Jersey school district that began using ARC Core during the 2022–2023 school year. This district’s population includes 31% White students, 29% Hispanic students, 33% Black/African American Students, and 7% students of another race/ethnicity. District-wide, 22% are classified as Students with Disabilities and 72% are classified as Low Income. The correlations between students’ scores on the IRLA and the DIBELS during the 2022-2023 school year were strong and statistically significant (see Table 15).

Table 15. IRLA-DIBELS ELA Correlation Coefficients

	Fall		Winter		Spring	
	N	<i>r</i>	n	<i>r</i>	n	<i>r</i>
2022–2023 Gr. K–5	1555	.861*	1381	.815*	1640	.841*

* $p < .001$

Oregon: This study was conducted in a midsize Oregon school district with a student population that is 77% White, 13% Hispanic, and 10% other race/ethnicity; 21 languages are spoken, more than 95% of students are eligible for Free/Reduced-Price Lunch, and 14% are classified as Students with Disabilities. In 2021–2022, the study examined data from K–2 classrooms piloting the IRLA. In 2022–2023, the study included all K–2 classrooms and Grades 3–5 classrooms piloting the IRLA. Due to the nature of the pilot, fewer students were administered the assessments during the spring 2022 testing window. The study found strong IRLA-DIBELS correlations over .70 in 2021–2022 and correlation coefficients that approach or exceed that threshold in 2022–2023 (see Table 16).

¹⁰ DIBELS. (n.d.). Retrieved June 10, 2022, from <https://dibels.uoregon.edu/about-dibels>.

Table 16. IRLA-DIBELS ELA Correlation Coefficients

	Fall		Winter		Spring	
	n	<i>r</i>	n	<i>r</i>	n	<i>r</i>
2021–2022 Gr. K–2	298	.731*	260	.773*	96	.826*
2022–2023 Gr. K–2	847	.712*	1170	.753*	1194	.678*
2022–2023 Gr. 3–5	631	.662*	726	.695*	716	.706*

* $p < .001$

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