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Linking STAAR to Istation Reading

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Istation

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DATE
May 2024

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Executive Summary

This study provides the proficiency projection of the Istation Reading Formative Assessment on the State of Texas Assessments of Academic Readiness (STAAR) Reading assessment for third through eighth grades. Classification accuracy is also provided. The sample consisted of 23,941 students from three school districts in Texas in the 2022–2023 school year. Students took Istation Reading in the beginning-of-the-year (BOY), middle-of-the-year (MOY), and end-of-the-year (EOY) assessment months and STAAR during the spring assessment month.

The Pearson Product Moment correlations of Istation Reading MOY and STAAR range from 0.74 to 0.80 and 0.73 to 0.78 for Istation Reading EOY and STAAR at spring benchmarking. They indicate strong relationships between Istation Reading and the STAAR Reading assessment.

The linking study between STAAR and Istation Reading is conducted using multinomial logistic regression. A low probability of attaining a level was ≤.330, a medium probability of attaining a level was .331–.660, and a high probability of attaining a level was set at ≥.661.

At MOY, to achieve a high probability of attaining the STAAR *Meets* performance level, students had to attain Istation Reading overall scores at the following percentile ranks:

Third grade: 60th
Fourth grade: 60th
Fifth grade: 50th
Sixth grade: 55th
Seventh grade: 45th
Eighth grade: 40th

To achieve a high probability of attaining the STAAR *Masters* performance level, students had to attain Istation Reading overall scores at the following percentile ranks:

Third grade: 95th

Fourth grade: 90th
Fifth grade: 85th
Sixth grade: 95th
Seventh grade: 90th
Eighth grade: 75th

At EOY, students had to attain Istation Reading scores at the following percentile ranks to have a high probability of attaining the STAAR *Meets* performance level:

Third grade: 60th
Fourth grade: 60th
Fifth grade: 50th
Sixth grade: 60th
Seventh grade: 50th
Eighth grade: 40th

To achieve a high probability of attaining the STAAR *Masters* performance level, students had to attain Istation Reading scores at the following percentile ranks:

Third grade: 95th
Fourth grade: 90th
Fifth grade: 85th
Sixth grade: 99th
Seventh grade: 95th
Eighth grade: 80th

Classification accuracy analyses were conducted. At MOY, the area under the curve (AUC) ranged from 0.78 to 0.81, indicating that the percentage of students correctly classified on the Istation Reading with respect to the STAAR Reading assessment was approximately 80% across grades. Sensitivity ranged from 0.75 to 0.84, indicating that approximately 80% of students who performed above the cut point on Istation Reading attained the *Meets* performance level or above on the STAAR assessment. Specificity ranged from 0.76 to 0.84, indicating that approximately 80% of students who performed below the cut point on Istation Reading did not attain *Meets* or above on the STAAR assessment. Istation Reading accurately predicted meeting reading proficiency on the STAAR assessment about 80% of the time at the MOY.

At EOY, the AUC ranged from 0.75 to 0.81, indicating that approximately 80% of students were correctly classified on the Istation Reading with respect to the STAAR Reading assessment across grades. Sensitivity ranged from 0.75 to 0.83, indicating that approximately 78% of students who performed above the cut point on Istation Reading attained the *Meets* performance level or above on the STAAR assessment. Specificity ranged from 0.75 to 0.84, indicating that approximately 81% of students who performed below the cut point on Istation Reading did not attain *Meets* or above on the STAAR assessment. Istation Reading accurately predicted meeting reading proficiency on the STAAR assessment about 80% of the time at EOY.

Table of Contents

Introduction

This study provides the proficiency projection of Istation Reading Formative Assessment (Istation Reading) observed scores on the STAAR Reading scores for grades 3 through 8. Students took these two assessments during the 2022–2023 school year, and a correlational study and classification accuracy were also conducted.

The regular administration of Istation assessments (either monthly or three times each school year during benchmarking assessment months) and the administration of the STAAR in the spring present an opportunity for conducting a linking study between the Istation Reading and STAAR Reading assessments. The results from this study can help teachers and school administrators prepare students for the STAAR assessment in the spring.

The Istation Reading assessments have strong correlations with other state assessments, and linking studies with other assessments demonstrated that Istation Reading can be used to project student proficiency on end-of-year assessments:

- Mexico Measures of Student Success and Achievement (NM-MSSA) (Wolf et al., 2023)
- Georgia Milestones Assessment System (GMAS) ELA (Jeans, 2024)
- Virginia Standards of Learning (Campbell, Sutter, & Lambie, 2019)
- Ohio AIR (LePlante, 2019)
- Renaissance STAR (Campbell, Sutter, Lambie, & Tinstman Jones, 2019)
- CMAS ELA (Patarapichayatham, 2019)
- Idaho SAT (Wolfe & Ross, 2020)
- New Jersey Student Learning Standards (NJSLA) (Wolf & Locke, 2022)
- PARCC (Cook & Ross, 2020)
- Kansas Assessment Program (Patarapichayatham, 2017)

All information can be found on our website (www.istation.com).

Background

Istation Reading Assessment

Istation Reading formative assessments utilize a computer adaptive testing (CAT) approach based on the two-parameter item response theory, which enables measurement of critical domains such as reading comprehension, fluency, vocabulary, and spelling. These highly efficient assessments can track progress within or across academic years. They can be administered to an entire classroom, school, or district in as little as 30 minutes, easily fitting within the school day. Immediate online availability of student results provides teachers and administrators insight into each student's past and current performance and skill growth. Teachers receive alerts when students are not making adequate progress, allowing them to modify instruction before a pattern of failure develops (Mathes, 2011).

The Istation Reading formative assessment helps teachers identify areas of need and provide differentiated instruction according to a student's strengths and weaknesses. Istation Reading is available for prekindergarten through eighth grade students and has a continuous vertical scale that assesses reading ability across these grades. In addition to detailed reports, Istation provides teachers and other school personnel with links to teaching resources and targeted intervention strategies (Mathes et al., 2023). Scaled scores range from 100 to 900. There are five performance levels for Istation Reading:

- Level 1: at or below the 20th percentile rank
- Level 2: between the 21st and 40th percentile rank
- Level 3: between the 41st and 60th percentile rank
- Level 4: between the 61st and 80th percentile rank
- Level 5: at or above the 81st percentile rank.

STAAR Reading Assessment

STAAR Reading is the state testing program for Texas students in grades 3 through 8. The Texas Education Agency (TEA), in collaboration with the Texas Higher Education Coordinating Board (THECB) and Texas educators, developed the STAAR program in response to requirements set forth by the 80th and 81st Texas legislatures. STAAR is an assessment program designed to measure how students have learned and can apply the knowledge and skills defined in the state-mandated curriculum standards (http://tea.texas.gov).

Students receive a performance level and a numerical scaled score that corresponds to the knowledge, skills, and abilities that students must demonstrate to be classified into one of four levels:

- *Does Not Meet Grade Level*: Performance in this category indicates that students are **unlikely to succeed in the next grade or course without significant, ongoing academic intervention**. Students in this category do not demonstrate a sufficient understanding of the assessed knowledge and skills.
- *Approaches Grade Level*: Performance in this category indicates that students are **likely to succeed in the next grade or course with targeted academic intervention**. Students in this category generally demonstrate the ability to apply the assessed knowledge and skills in familiar contexts.
- *Meets Grade Level*: Performance in this category indicates that students have a **high likelihood of success in the next grade or course but may still need some short-term, targeted academic intervention**. Students in this category generally demonstrate the ability to think critically and apply the assessed knowledge and skills in familiar contexts.
- *Masters Grade Level*: Performance in this category indicates that students are **expected to succeed in the next grade or course with little or no academic intervention**. Students in this category demonstrate the ability to think critically and apply the assessed knowledge and skills in varied contexts, both familiar and unfamiliar.

Table 1 shows cut scores associated with these performance levels by grade level.

This study aims to predict students' performance on STAAR Reading based on their Istation Reading scores. There are two objectives in the current study:

(1) Use Istation Reading scores from the middle-of-year (MOY) benchmark month to predict STAAR outcomes.

(2) Use Istation Reading scores from the end-of-year (EOY) benchmark month to predict STAAR outcomes.

Table 1. *STAAR Reading Scale Score Ranges by Performance Level*

Grade	Does Not Meet	Approaches	Meets	Masters
3	829–1331	1345–1456	1467–1581	1596–2120
4	934–1399	1414–1541	1552–1650	1663–2210
5	925–1462	1475–1580	1592–1685	1700–2220
6	1016–1524	1535–1625	1634–1737	1749–2280
7	983–1552	1564–1658	1669–1758	1771–2290
8	1084–1580	1592–1689	1698–1791	1803–2360

Methodology

Analytical Sample

The analytical sample consisted of third through eighth grade students from three Texas school districts during the 2022-2023 school year. Only students who had valid Istation Reading and STAAR scores were included in the analyses.

Table 2 presents the analytic sample breakdown by grade, totaling 23,941 students. There were 9,333 students from District A; 5,937 students from District B; and 8,671 students from District C. Students took the Istation Reading Formative Assessment at the BOY, MOY, and EOY assessment months and took STAAR in the spring. Table 3 has the demographic breakdown by district and grade.

Table 2. *Sample Size by District and Grade*

Grade	A	B	C	Total
3	1612	2037	3011	6660
4	2371	2020	2592	6983
5	2240	1880	2313	6433
6	2061	N/A	80	2141
7	729	N/A	675	1404
8	320	N/A	N/A	320

Table 3. *Sample Demographic Characteristics by District*

	Demographic Characteristics	Percentage
A	Gender: Female/Male	48%/52%
	Race/Ethnicity: Black or African American	27%
	Race/Ethnicity: Hispanic or Latino origin	56%
	Race/Ethnicity: White/Non-Hispanic	4%
	Race/Ethnicity: Asian or Other	13%
	Emergent Bilingual	61%
	Special Education	14%
B	Gender: Female/Male	48%/52%
	Race/Ethnicity: Black or African American	10%
	Race/Ethnicity: Hispanic or Latino origin	47%
	Race/Ethnicity: White/Non-Hispanic	34%
	Race/Ethnicity: Asian or Other	9%
	English as a Second Language	13%
C	Gender: Female/Male	49%/51%
	Race/Ethnicity: Black or African American	2%
	Race/Ethnicity: Hispanic or Latino origin	92%
	Race/Ethnicity: White/Non-Hispanic	4%
	Race/Ethnicity: Asian or Other	2%
	Current English Language Learner	35%

Analytical Approach

To provide teachers and administrators with the information they need to determine whether a student is likely to reach the *Meets* performance level or above on the

STAAR assessment, Pearson product-moment correlations were conducted to confirm the correlation in performance between the two assessments. Next, multinomial logistic regression determined the probabilities of reaching *Approaches* (level 2), *Meets* (level 3), or *Masters* (level 4) on the STAAR assessment. The analysis used the Istation Reading score as the predictor and the STAAR performance levels as outcome variables. Students with Istation Reading scores ranging from the 1st to the 99th percentile ranks were part of the analysis. A selection of 20 Istation Reading scaled scores in MOY and EOY, corresponding to the following percentile ranks, was made: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 99. The model was adapted for each grade individually. The study focused on performance levels 2 through 4.

The probability of achieving the STAAR performance level 2 (*Approaches*) or above is computed by adding the probabilities of levels 2 through 4. The probability of achieving the STAAR performance level 3 (*Meets*) or above is computed by adding the probabilities of levels 3 and 4. The probability of achieving STAAR performance level 4 (*Masters*) is the probability only for level 4. The analyses were computed using Stata 18.0 software. Finally, classification accuracy analyses determined Istation Reading cut points that assist in differentiating students who will or will not achieve level 3 *Meets* or higher on the STAAR Reading assessment.

Results

Istation Reading and STAAR Descriptive Statistics

Table 4 presents the descriptive statistics for Istation Reading and STAAR performance by grade and district.

Table 4. *Istation Reading and STAAR Mean Score and Standard Deviation (SD) by Grade and District*

District	Grade	Istation BOY (SD)	Istation MOY (SD)	Istation EOY (SD)	STAAR Score (SD)
A	3	426.35 (79.07)	447.46 (89.18)	458.76 (97.18)	1428.95 (151.51)
	4	460.31 (76.47)	478.77 (85.92)	490.12 (88.79)	1488.36 (143.84)
	5	505.60 (74.70)	511.84 (88.12)	525.52 (94.67)	1566.25 (151.35)
	6	520.87 (79.79)	526.85 (102.77)	544.55 (113.64)	1606.64 (134.12)
	7	536.41 (82.46)	545.51 (98.40)	557.43 (111.72)	1620.17 (137.35)
	8	537.42 (106.07)	534.90 (134.98)	545.06 (138.62)	1662.80 (155.18)
B	3	443.65 (59.86)	468.39 (67.34)	486.31 (69.44)	1460.26 (143.36)
	4	482.04 (59.23)	505.30 (61.93)	523.33 (65.20)	1540.31 (140.21)
	5	520.14 (61.36)	536.25 (65.36)	551.84 (68.97)	1606.13 (143.12)
C	3	437.81 (70.84)	457.64 (77.17)	475.87 (79.89)	1463.87 (152.78)
	4	478.59 (69.47)	494.64 (71.68)	508.75 (72.56)	1539.54 (143.60)
	5	516.74 (66.22)	527.08 (71.10)	539.66 (72.32)	1611.98 (137.60)
	6	506.11 (73.40)	510.68 (80.75)	525.13 (94.05)	1585.41 (123.01)
	7	564.21 (71.38)	573.80 (76.80)	584.40 (77.50)	1683.89 (128.49)

Table 5 presents the proportion of students in each STAAR level by grade and district. Generally, the largest proportion of students in District A was consistently in the *Does Not Meet* performance level, whereas students were mainly in either *Approaches* or *Meets* performance levels for District B and District C.

Table 5. *Percentage of Students in STAAR Performance Levels by District and Grade*

District	Grade	Does Not Meet	Approaches	Meets	Masters
A	3	30%	27%	27%	16%
	4	33%	33%	21%	13%
	5	28%	26%	26%	21%
	6	31%	26%	27%	16%
	7	33%	29%	24%	13%
	8	38%	22%	21%	20%
B	3	20%	29%	32%	18%
	4	19%	32%	29%	21%
	5	16%	27%	30%	27%
C	3	21%	25%	32%	21%
	4	20%	31%	29%	20%
	5	15%	25%	30%	29%
	6	29%	35%	29%	8%
	7	12%	28%	34%	25%

Correlational Study: Istation Reading and STAAR

Table 6 shows the Pearson product-moment correlation coefficients between Istation Reading and STAAR scores for MOY and EOY. The coefficients for grades 3 through 8 range from .74 to .80, indicating a strong relationship between Istation Reading and the STAAR Reading assessment. If a student does well on Istation Reading, then it is likely that the student will do well on the STAAR assessment. Figures 1 and 2 show the correlations between Istation Reading and STAAR scores by grade at MOY and EOY benchmark periods, respectively.

Table 6. *Pearson Product-Moment Correlation Coefficients between Istation Reading and STAAR Reading*

Grade	Istation Reading MOY	Istation Reading EOY
3	0.76*	0.76*
4	0.74*	0.75*
5	0.74*	0.73*
6	0.75*	0.73*
7	0.76*	0.73*
8	0.80*	0.78*

*$p < 0.001$

Figure 1. *Pearson Product-Moment Correlations between Istation and STAAR by Grade at MOY*

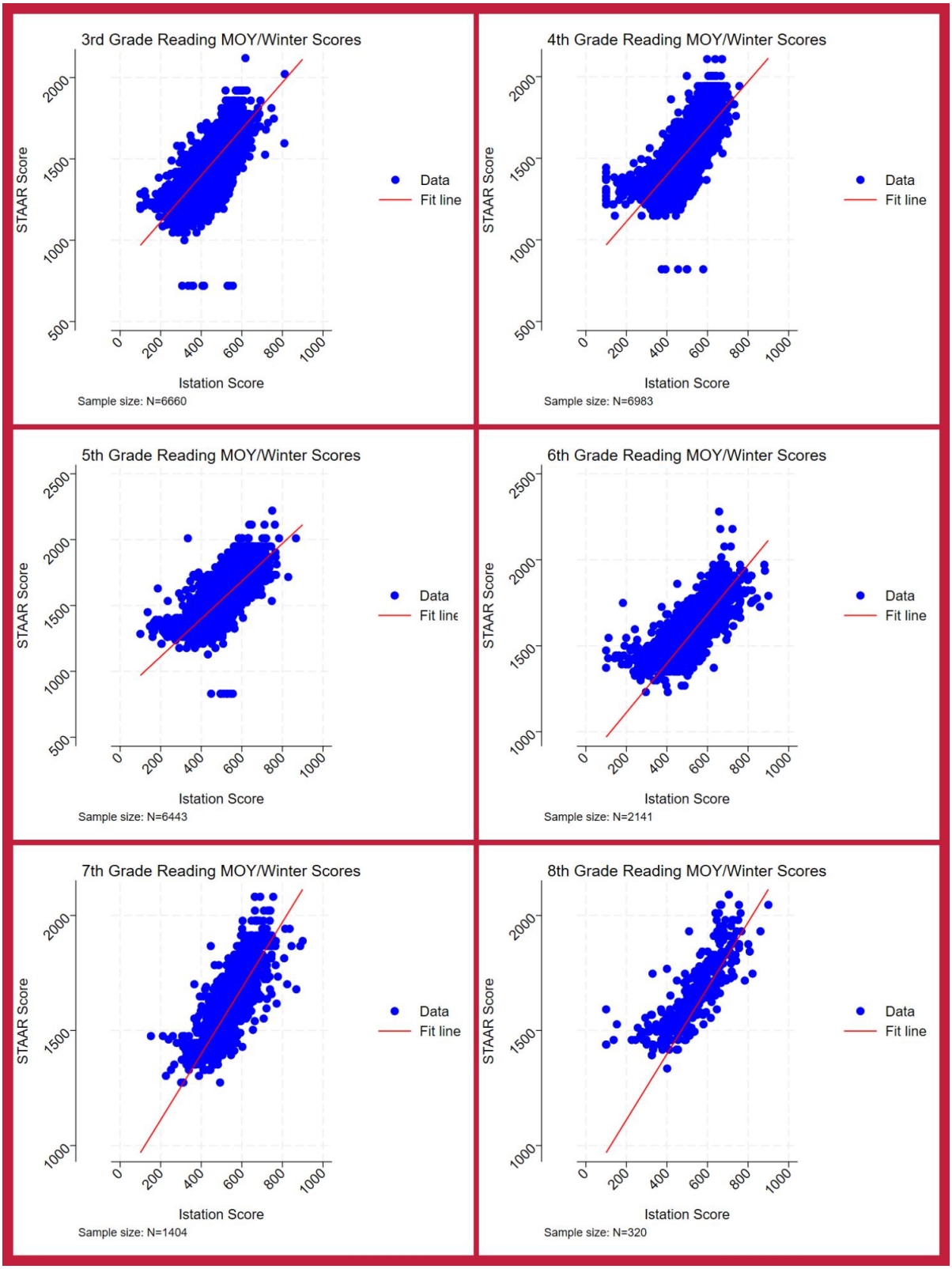
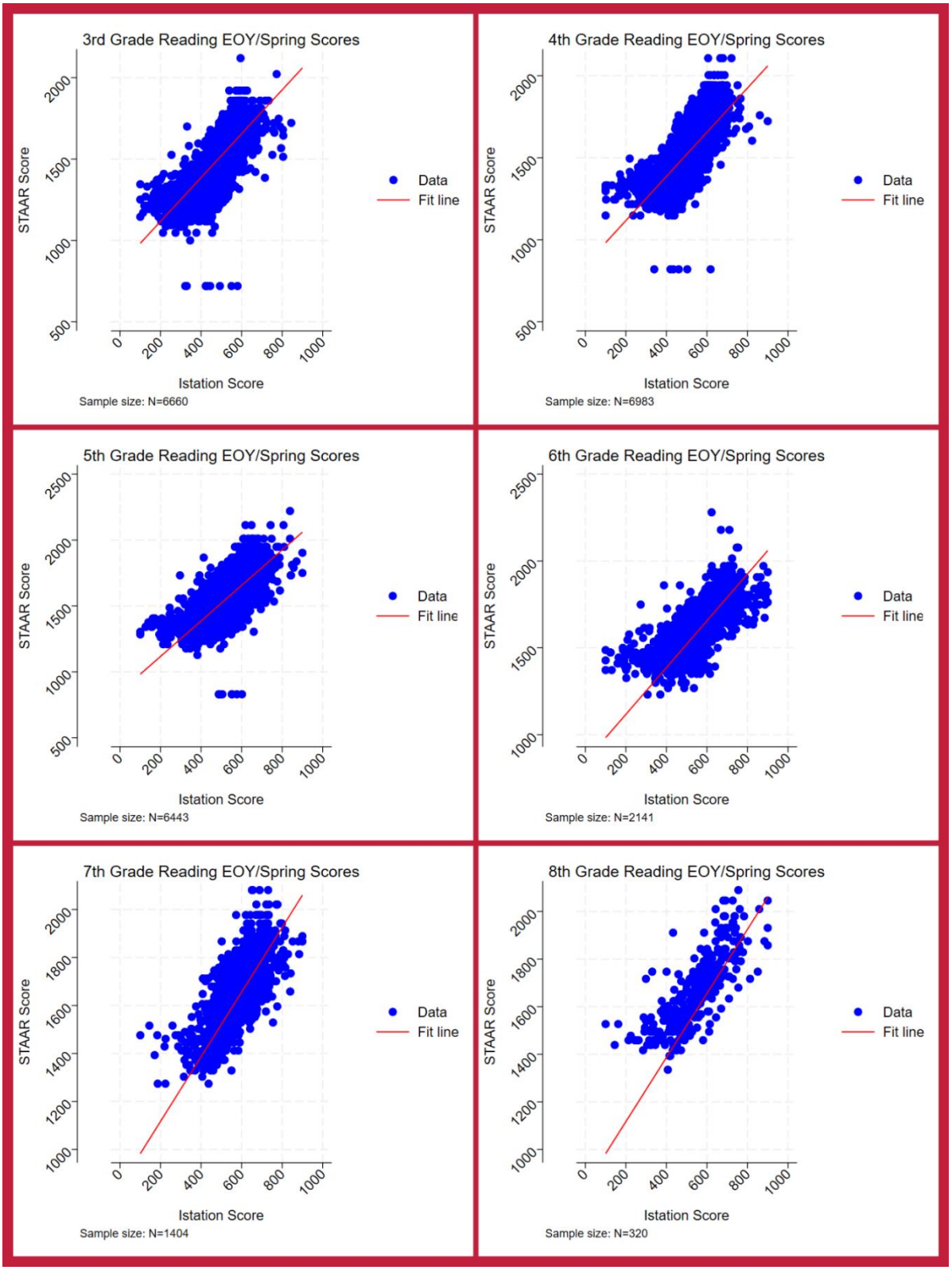


Figure 2. *Pearson Product-Moment Correlations between Istation and STAAR by Grade at EOY*



Linking Study: Istation Reading and STAAR Reading

Tables 7 through 10 are concordance tables derived from statistical linking procedures directly linking Istation Reading scores and STAAR assessment levels. Concordance tables serve as valuable tools for various stakeholders, including educators, parents, administrators, researchers, and policymakers, by offering essential information to assess students' academic performance. These tables provide a more comprehensive understanding of students' abilities and progress. Moreover, concordance tables aid in identifying strengths and weaknesses in specific subject areas, assisting in developing targeted interventions and support programs. Furthermore, these tables contribute to the establishment of consistent academic standards and expectations, promoting a unified approach to evaluating and enhancing educational outcomes.

The probabilities of meeting a STAAR performance level were divided into low, medium, and high. Students with a probability of ≤.330 had a *low* probability of achieving a level. Those with a probability of .331–.660 had a *medium* probability, and students with a probability of ≥.661 had a *high* probability of attaining *Approaches* or higher.

Probabilities for the Middle of the Year

The MOY table for third through fifth grade shows that students in the third and fourth grades need to be at the 60th percentile or above to have a high probability of reaching *Meets* or higher; students in fifth grade need to be at the 50th percentile. The MOY table for sixth through eighth grade shows that students in the sixth grade need to be at the 55th percentile; students in the seventh grade need to be at the 45th percentile; and students in the eighth grade need to be at the 40th percentile to have a high probability of reaching *Meets* or higher.

Table 7. *Third through Fifth Grade Proficiency Projection for Istation Reading at MOY*

Grade	Overall Score	Percentile	Approaches Probability	Approaches	Meets Probability	Meets	Masters Probability	Masters
3	363	5	0.298	Low	0.024	Low	0.000	Low
	392	10	0.466	Medium	0.071	Low	0.002	Low
	410	15	0.585	Medium	0.130	Low	0.006	Low
	423	20	0.672	High	0.193	Low	0.012	Low
	434	25	0.741	High	0.260	Low	0.022	Low
	443	30	0.792	High	0.323	Low	0.033	Low
	452	35	0.838	High	0.393	Medium	0.048	Low
	460	40	0.873	High	0.458	Medium	0.067	Low
	467	45	0.900	High	0.517	Medium	0.087	Low
	474	50	0.922	High	0.575	Medium	0.112	Low
	481	55	0.940	High	0.631	Medium	0.141	Low
	489	60	0.957	High	0.692	High	0.179	Low
	496	65	0.968	High	0.741	High	0.217	Low
	504	70	0.978	High	0.791	High	0.265	Low
	512	75	0.985	High	0.834	High	0.317	Low
	522	80	0.991	High	0.879	High	0.386	Medium
	533	85	0.995	High	0.916	High	0.464	Medium
	548	90	0.998	High	0.952	High	0.569	Medium
	572	95	1.000	High	0.982	High	0.715	High
	626	99	1.000	High	0.998	High	0.908	High
4	408	5	0.326	Low	0.020	Low	0.000	Low
	435	10	0.495	Medium	0.059	Low	0.002	Low
	452	15	0.611	Medium	0.109	Low	0.005	Low
	465	20	0.697	High	0.165	Low	0.011	Low
	476	25	0.764	High	0.227	Low	0.019	Low
	485	30	0.814	High	0.288	Low	0.031	Low
	493	35	0.852	High	0.349	Medium	0.045	Low
	501	40	0.886	High	0.416	Medium	0.065	Low
	509	45	0.914	High	0.485	Medium	0.092	Low
	516	50	0.934	High	0.548	Medium	0.121	Low

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	524	55	0.953	High	0.618	Medium	0.161	Low
	531	60	0.966	High	0.676	High	0.203	Low
	539	65	0.977	High	0.738	High	0.258	Low
	547	70	0.984	High	0.793	High	0.319	Low
	556	75	0.990	High	0.846	High	0.392	Medium
	566	80	0.995	High	0.893	High	0.476	Medium
	578	85	0.997	High	0.933	High	0.574	Medium
	593	90	0.999	High	0.965	High	0.683	High
	616	95	1.000	High	0.988	High	0.812	High
	661	99	1.000	High	0.999	High	0.941	High
5	432	5	0.367	Medium	0.048	Low	0.002	Low
	461	10	0.557	Medium	0.128	Low	0.010	Low
	479	15	0.681	High	0.214	Low	0.023	Low
	492	20	0.762	High	0.296	Low	0.042	Low
	504	25	0.828	High	0.384	Medium	0.068	Low
	513	30	0.869	High	0.455	Medium	0.095	Low
	522	35	0.903	High	0.528	Medium	0.129	Low
	531	40	0.930	High	0.600	Medium	0.170	Low
	539	45	0.949	High	0.660	Medium	0.212	Low
	547	50	0.964	High	0.717	High	0.259	Low
	555	55	0.975	High	0.768	High	0.311	Low
	563	60	0.983	High	0.813	High	0.365	Medium
	571	65	0.988	High	0.852	High	0.421	Medium
	580	70	0.993	High	0.888	High	0.484	Medium
	589	75	0.996	High	0.917	High	0.545	Medium
	600	80	0.998	High	0.943	High	0.616	Medium
	612	85	0.999	High	0.963	High	0.686	High
	629	90	1.000	High	0.981	High	0.769	High
	653	95	1.000	High	0.993	High	0.856	High
	702	99	1.000	High	0.999	High	0.949	High

Table 8. *Sixth through Eighth Grade Proficiency Projection for Istation Reading at MOY*

Grade	Overall Score	Percentile	Approaches Probability	Approaches	Meets Probability	Meets	Masters Probability	Masters
6	453	5	0.369	Medium	0.054	Low	0.001	Low
	480	10	0.519	Medium	0.119	Low	0.004	Low
	498	15	0.626	Medium	0.189	Low	0.009	Low
	512	20	0.707	High	0.261	Low	0.017	Low
	523	25	0.765	High	0.326	Low	0.027	Low
	533	30	0.813	High	0.391	Medium	0.039	Low
	543	35	0.855	High	0.459	Medium	0.056	Low
	552	40	0.887	High	0.522	Medium	0.075	Low
	560	45	0.911	High	0.577	Medium	0.096	Low
	568	50	0.931	High	0.630	Medium	0.122	Low
	576	55	0.947	High	0.680	High	0.151	Low
	585	60	0.962	High	0.733	High	0.190	Low
	593	65	0.972	High	0.776	High	0.228	Low
	602	70	0.980	High	0.818	High	0.276	Low
	612	75	0.987	High	0.859	High	0.334	Medium
	622	80	0.992	High	0.892	High	0.395	Medium
	635	85	0.996	High	0.926	High	0.476	Medium
	651	90	0.998	High	0.955	High	0.574	Medium
	675	95	0.999	High	0.981	High	0.705	High
	721	99	1.000	High	0.997	High	0.874	High
7	476	5	0.437	Medium	0.084	Low	0.003	Low
	506	10	0.618	Medium	0.177	Low	0.012	Low
	526	15	0.733	High	0.268	Low	0.026	Low
	541	20	0.806	High	0.349	Medium	0.044	Low
	554	25	0.859	High	0.425	Medium	0.067	Low
	565	30	0.895	High	0.492	Medium	0.092	Low
	576	35	0.924	High	0.558	Medium	0.124	Low
	585	40	0.943	High	0.611	Medium	0.156	Low
	595	45	0.959	High	0.668	High	0.196	Low
	604	50	0.970	High	0.716	High	0.237	Low

	612	55	0.978	High	0.755	High	0.277	Low
	621	60	0.984	High	0.795	High	0.325	Low
	630	65	0.989	High	0.831	High	0.375	Medium
	640	70	0.993	High	0.865	High	0.433	Medium
	650	75	0.995	High	0.895	High	0.491	Medium
	662	80	0.997	High	0.923	High	0.559	Medium
	675	85	0.999	High	0.946	High	0.629	Medium
	692	90	0.999	High	0.967	High	0.710	High
	717	95	1.000	High	0.985	High	0.806	High
	764	99	1.000	High	0.997	High	0.916	High
8	496	5	0.454	Medium	0.101	Low	0.004	Low
	530	10	0.702	High	0.231	Low	0.019	Low
	552	15	0.828	High	0.345	Medium	0.043	Low
	569	20	0.896	High	0.440	Medium	0.074	Low
	583	25	0.934	High	0.521	Medium	0.112	Low
	595	30	0.957	High	0.589	Medium	0.153	Low
	606	35	0.972	High	0.649	Medium	0.200	Low
	617	40	0.982	High	0.706	High	0.254	Low
	627	45	0.988	High	0.753	High	0.309	Low
	636	50	0.992	High	0.793	High	0.362	Medium
	646	55	0.995	High	0.832	High	0.424	Medium
	656	60	0.997	High	0.867	High	0.487	Medium
	665	65	0.998	High	0.893	High	0.544	Medium
	676	70	0.999	High	0.920	High	0.609	Medium
	687	75	0.999	High	0.941	High	0.671	High
	699	80	1.000	High	0.958	High	0.730	High
	713	85	1.000	High	0.973	High	0.790	High
	730	90	1.000	High	0.984	High	0.847	High
	756	95	1.000	High	0.993	High	0.909	High
	805	99	1.000	High	0.999	High	0.967	High

MOY Istation Reading and STAAR at Winter Benchmarking

Figure 3 represents the MOY Istation Reading percentiles associated with the probabilities of attaining the STAAR *Meets* performance level by grade.

Third grade students who attained an Istation Reading score around 452–481 (35th to 55th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 489 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 572 (95th percentile) had a high probability of reaching the STAAR *Masters* level.

Fourth grade students who attained an Istation Reading score around 493–524 (35th to 55th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 531 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 593 (90th percentile) had a high probability of reaching the STAAR *Masters* level.

Fifth grade students who attained an Istation Reading score around 504–539 (25th to 45th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 547 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 612 (85th percentile) had a high probability of reaching the STAAR *Masters* level.

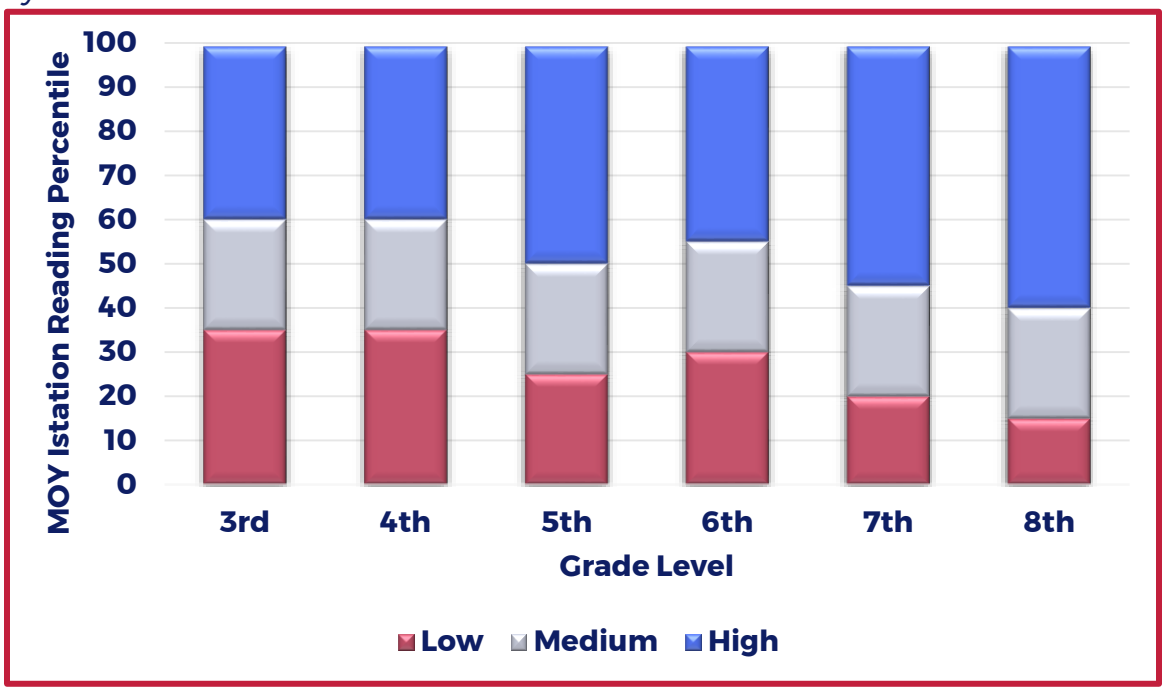
Sixth grade students who attained an Istation Reading score around 533–568 (30th to 50th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 576 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 675 (95th percentile) had a high probability of reaching the STAAR *Masters* level.

Seventh grade students who attained an Istation Reading score around 541–585 (20th to 40th percentile ranks) had a medium probability of achieving the STAAR *Meets*

level or higher. Students with a score higher than 595 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 692 (90th percentile) had a high probability of reaching the STAAR *Masters* level.

Eighth grade students who attained an Istation Reading score around 552–606 (15th to 35th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 617 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 687 (75th percentile) had a high probability of reaching the STAAR *Masters* level.

Figure 3. *MOY Istation Reading Percentiles and STAAR Reading Meets Probabilities by Grade*



Probabilities for the End of the Year

The EOY table for third through fifth grade shows that students in the third and fourth grades need to be at the 50th percentile or above to have a high probability of reaching *Meets* or higher; students in fifth grade need to be at the 40th percentile. The MOY table for sixth through eighth grade shows that students in the sixth grade need to be at the 45th percentile; students in the seventh grade need to be at the 40th percentile; and students in the eighth grade need to be at the 35th percentile to have a high probability of reaching *Meets* or higher.

Table 9. *Third through Fifth Grade Proficiency Projection for Istation Reading at EOY*

Grade	Overall Score	Percentile	Approaches Probability	Approaches	Meets Probability	Meets	Masters Probability	Masters
3	371	5	0.240	Low	0.013	Low	0.000	Low
	402	10	0.410	Medium	0.048	Low	0.001	Low
	422	15	0.545	Medium	0.101	Low	0.004	Low
	436	20	0.643	Medium	0.161	Low	0.008	Low
	448	25	0.723	High	0.230	Low	0.016	Low
	458	30	0.784	High	0.299	Low	0.026	Low
	467	35	0.833	High	0.370	Medium	0.040	Low
	475	40	0.870	High	0.438	Medium	0.057	Low
	483	45	0.902	High	0.507	Medium	0.078	Low
	491	50	0.927	High	0.576	Medium	0.106	Low
	499	55	0.948	High	0.643	Medium	0.139	Low
	506	60	0.961	High	0.698	High	0.173	Low
	514	65	0.973	High	0.755	High	0.218	Low
	523	70	0.983	High	0.811	High	0.275	Low
	532	75	0.989	High	0.857	High	0.336	Medium
	542	80	0.994	High	0.898	High	0.409	Medium
	555	85	0.997	High	0.937	High	0.505	Medium
	571	90	0.999	High	0.967	High	0.617	Medium
	596	95	1.000	High	0.989	High	0.762	High
	653	99	1.000	High	0.999	High	0.935	High
4	419	5	0.317	Low	0.018	Low	0.000	Low
	448	10	0.496	Medium	0.058	Low	0.002	Low
	465	15	0.612	Medium	0.107	Low	0.006	Low
	479	20	0.704	High	0.168	Low	0.012	Low
	490	25	0.770	High	0.230	Low	0.022	Low
	500	30	0.824	High	0.299	Low	0.036	Low
	509	35	0.865	High	0.368	Medium	0.054	Low
	517	40	0.897	High	0.435	Medium	0.075	Low
	525	45	0.923	High	0.504	Medium	0.103	Low
	533	50	0.943	High	0.574	Medium	0.137	Low

	541	55	0.960	High	0.642	Medium	0.178	Low
	549	60	0.972	High	0.705	High	0.226	Low
	557	65	0.981	High	0.763	High	0.279	Low
	565	70	0.987	High	0.813	High	0.337	Medium
	575	75	0.993	High	0.865	High	0.413	Medium
	586	80	0.996	High	0.909	High	0.497	Medium
	598	85	0.998	High	0.943	High	0.585	Medium
	614	90	0.999	High	0.971	High	0.690	High
	638	95	1.000	High	0.990	High	0.810	High
	685	99	1.000	High	0.999	High	0.936	High
5	440	5	0.349	Medium	0.053	Low	0.002	Low
	470	10	0.542	Medium	0.134	Low	0.011	Low
	488	15	0.664	High	0.216	Low	0.024	Low
	502	20	0.751	High	0.298	Low	0.043	Low
	514	25	0.816	High	0.378	Medium	0.068	Low
	524	30	0.861	High	0.449	Medium	0.095	Low
	533	35	0.895	High	0.515	Medium	0.126	Low
	542	40	0.923	High	0.580	Medium	0.163	Low
	550	45	0.942	High	0.636	Medium	0.201	Low
	559	50	0.959	High	0.695	High	0.250	Low
	567	55	0.971	High	0.743	High	0.296	Low
	575	60	0.979	High	0.787	High	0.346	Medium
	584	65	0.986	High	0.830	High	0.403	Medium
	593	70	0.991	High	0.866	High	0.462	Medium
	603	75	0.995	High	0.900	High	0.526	Medium
	614	80	0.997	High	0.928	High	0.593	Medium
	627	85	0.998	High	0.953	High	0.666	High
	643	90	0.999	High	0.973	High	0.744	High
	669	95	1.000	High	0.989	High	0.840	High
	719	99	1.000	High	0.998	High	0.940	High

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Table 10. *Sixth through Eighth Grade Proficiency Projection for Istation Reading at EOY*

Grade	Overall Score	Percentile	Approaches Probability	Approaches	Meets Probability	Meets	Masters Probability	Masters
6	462	5	0.388	Medium	0.063	Low	0.002	Low
	491	10	0.531	Medium	0.131	Low	0.007	Low
	509	15	0.625	Medium	0.195	Low	0.013	Low
	524	20	0.701	High	0.262	Low	0.022	Low
	536	25	0.758	High	0.325	Low	0.032	Low
	547	30	0.805	High	0.387	Medium	0.045	Low
	556	35	0.839	High	0.440	Medium	0.059	Low
	565	40	0.870	High	0.494	Medium	0.075	Low
	574	45	0.896	High	0.547	Medium	0.094	Low
	583	50	0.918	High	0.600	Medium	0.117	Low
	591	55	0.934	High	0.645	Medium	0.140	Low
	600	60	0.950	High	0.692	High	0.168	Low
	608	65	0.961	High	0.732	High	0.196	Low
	617	70	0.971	High	0.772	High	0.230	Low
	627	75	0.979	High	0.813	High	0.271	Low
	638	80	0.986	High	0.851	High	0.320	Low
	651	85	0.991	High	0.888	High	0.379	Medium
	667	90	0.995	High	0.923	High	0.455	Medium
	692	95	0.998	High	0.959	High	0.571	Medium
	739	99	1.000	High	0.989	High	0.754	High
7	484	5	0.469	Medium	0.120	Low	0.008	Low
	516	10	0.643	Medium	0.223	Low	0.024	Low
	537	15	0.747	High	0.310	Low	0.043	Low
	553	20	0.814	High	0.384	Medium	0.066	Low
	566	25	0.859	High	0.447	Medium	0.090	Low
	578	30	0.893	High	0.506	Medium	0.117	Low
	588	35	0.917	High	0.554	Medium	0.143	Low
	598	40	0.936	High	0.601	Medium	0.173	Low
	608	45	0.951	High	0.646	Medium	0.206	Low
	617	50	0.963	High	0.685	High	0.239	Low

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	626	55	0.971	High	0.722	High	0.274	Low
	635	60	0.978	High	0.756	High	0.312	Low
	645	65	0.984	High	0.791	High	0.355	Medium
	655	70	0.989	High	0.823	High	0.400	Medium
	665	75	0.992	High	0.851	High	0.445	Medium
	677	80	0.995	High	0.880	High	0.499	Medium
	690	85	0.997	High	0.907	High	0.557	Medium
	707	90	0.998	High	0.934	High	0.628	Medium
	733	95	0.999	High	0.963	High	0.723	High
	781	99	1.000	High	0.988	High	0.850	High
8	503	5	0.479	Medium	0.134	Low	0.011	Low
	539	10	0.674	High	0.261	Low	0.036	Low
	561	15	0.778	High	0.361	Medium	0.066	Low
	579	20	0.847	High	0.450	Medium	0.104	Low
	593	25	0.890	High	0.521	Medium	0.142	Low
	606	30	0.921	High	0.586	Medium	0.185	Low
	618	35	0.943	High	0.644	Medium	0.230	Low
	628	40	0.957	High	0.689	High	0.272	Low
	639	45	0.969	High	0.735	High	0.321	Low
	649	50	0.978	High	0.774	High	0.368	Medium
	659	55	0.984	High	0.809	High	0.417	Medium
	669	60	0.989	High	0.840	High	0.466	Medium
	679	65	0.992	High	0.868	High	0.515	Medium
	689	70	0.995	High	0.891	High	0.563	Medium
	700	75	0.996	High	0.913	High	0.613	Medium
	713	80	0.998	High	0.935	High	0.668	High
	727	85	0.999	High	0.952	High	0.721	High
	745	90	0.999	High	0.969	High	0.781	High
	771	95	1.000	High	0.984	High	0.848	High
	820	99	1.000	High	0.995	High	0.927	High

EOY Istation Reading and STAAR at Spring Benchmarking

Figure 4 represents the EOY Istation Reading percentiles associated with the probabilities of attaining the STAAR *Meets* performance level by grade.

Third grade students who attained an Istation Reading score around 467–499 (35th to 55th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 506 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 596 (95th percentile) had a high probability of reaching the STAAR *Masters* level.

Fourth grade students who attained an Istation Reading score around 509–541 (35th to 55th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 549 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 614 (90th percentile) had a high probability of reaching the STAAR *Masters* level.

Fifth grade students who attained an Istation Reading score around 514–550 (25th to 45th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 559 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 627 (85th percentile) had a high probability of reaching the STAAR *Masters* level.

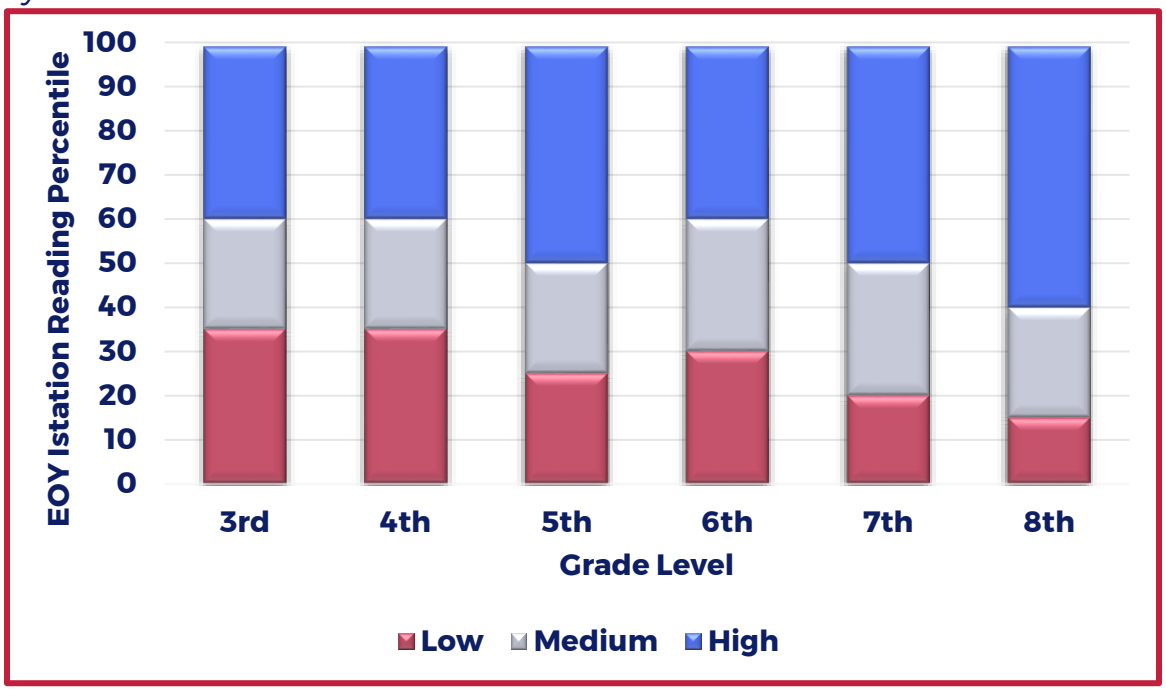
Sixth grade students who attained an Istation Reading score around 547–591 (30th to 55th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 600 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 739 (99th percentile) had a high probability of reaching the STAAR *Masters* level.

Seventh grade students who attained an Istation Reading score around 553–608 (20th to 45th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 617 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score

around 733 (95th percentile) had a high probability of reaching the STAAR *Masters* level.

Eighth grade students who attained an Istation Reading score around 561–618 (15th to 35th percentile ranks) had a medium probability of achieving the STAAR *Meets* level or higher. Students with scores higher than 628 had a high probability of reaching the *Meets* level or higher. Students who attained an Istation Reading score around 713 (80th percentile) had a high probability of reaching the STAAR *Masters* level.

Figure 4. *EOY Istation Reading Percentiles and STAAR Reading Meets Probabilities by Grade*



Classification Accuracy: Istation Reading and STAAR

Classification accuracy was conducted to predict whether students in the sample would achieve *Meets* level or higher on the STAAR Reading assessment. A higher classification accuracy rate indicates stronger congruence between the Istation Reading and STAAR assessments. Classification accuracy was conducted for third through eighth grade Istation Reading at MOY, Istation Reading at EOY, and STAAR of *Meets* level or higher. Classification accuracy analyses were performed to determine Istation Reading cut points that could help differentiate students who would or would not attain *Meets* or higher on the STAAR assessment.

Table 11. *Percentage of Students in STAAR Performance Levels by Grade*

Grade	Does Not Meet	Approaches	Meets	Masters
3	23%	27%	31%	19%
4	24%	32%	26%	18%
5	20%	26%	29%	26%
6	31%	26%	27%	15%
7	23%	29%	29%	19%
8	38%	22%	21%	20%

Classification accuracy of Istation cut scores were performed at the 30th, 35th, 40th, 45th, 50th, 55th, 60th, 65th, 70th, 75th, and 80th percentiles and STAAR *Meets* level or higher. The AUC, sensitivity, specificity, positive predictive power, negative predictive power, and overall rate were computed and compared to determine the best Istation Reading cut point to identify students who would most likely meet the *Meets* level or higher on the STAAR assessment. Results in Table 12 show that the 30th to 40th percentile was the best cut score across grade levels on Istation Reading at MOY and EOY.

MOY Classification Accuracy: Istation Reading and STAAR

Classification accuracy analyses were conducted. At MOY, the area under the curve (AUC) ranged from 0.78 to 0.81, indicating that the percentage of students correctly classified on the Istation Reading with respect to the STAAR Reading assessment was approximately 80% across grades. Sensitivity ranged from 0.75 to 0.84, indicating that

approximately 80% of students who performed above the cut point on Istation Reading attained the *Meets* performance level or above on the STAAR assessment. Specificity ranged from 0.76 to 0.84, indicating that approximately 80% of students who performed below the cut point on Istation Reading did not attain *Meets* or above on the STAAR assessment. Istation Reading accurately predicted meeting reading proficiency on the STAAR assessment about 80% of the time at the MOY.

EOY Classification Accuracy: Istation Reading and STAAR

At EOY, the AUC ranged from 0.75 to 0.81, indicating that approximately 80% of students were correctly classified on the Istation Reading with respect to the STAAR Reading assessment across grades. Sensitivity ranged from 0.75 to 0.83, indicating that approximately 78% of students who performed above the cut point on Istation Reading attained the *Meets* performance level or above on the STAAR assessment. Specificity ranged from 0.75 to 0.84, indicating that approximately 81% of students who performed below the cut point on Istation Reading did not attain *Meets* or above on the STAAR assessment. Istation Reading accurately predicted meeting reading proficiency on the STAAR assessment about 80% of the time at EOY.

Table 12. *Classification Accuracy Indices by Benchmark and Grade*

Grade	Cut Point	Benchmark	AUC	Sensitivity	Specificity
3	40th	Winter	.80	.79	.81
	40th	Spring	.81	.78	.83
4	40th	Winter	.80	.75	.84
	40th	Spring	.80	.75	.84
5	30th	Winter	.80	.80	.80
	30th	Spring	.80	.78	.81
6	40th	Winter	.81	.82	.80
	40th	Spring	.80	.79	.81
7	30th	Winter	.78	.79	.76
	30th	Spring	.75	.75	.75
8	30th	Winter	.80	.84	.77
	30th	Spring	.81	.83	.79

Conclusion

This research establishes a significant positive link between students' scores in Istation Reading and their STAAR outcomes, particularly from third through eighth grade. Both MOY and EOY scores on Istation Reading are reliable indicators for predicting STAAR Reading assessment performance. These correlations are particularly strong in the mentioned grades, with Pearson product-moment correlation coefficients ranging from 0.73 to 0.80.

Furthermore, the findings reveal a consistent trend: as students achieve higher scores in Istation Reading, their chances of reaching or surpassing the *Meets* performance level on the STAAR assessment increase. This pattern is evident across different grade levels, though the exact scores required for reaching the *Meets* performance level vary. The classification accuracy analysis supports this, showing that about 80% of students' performance can be accurately predicted based on their Istation Reading scores.

These results highlight the utility of Istation Reading as a tool for monitoring student progress and predicting their performance in key assessments like STAAR. For educators and school administrators, these insights are invaluable for designing targeted interventions and enhancing learning outcomes. This study reinforces the role of Istation Reading assessments in educational settings, proving their effectiveness in guiding instructional strategies and fostering student achievement.

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