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ISASP IOWA STATEWIDE ASSESSMENT
of STUDENT PROGRESS

**Student Performance Changes
2019 to 2021**

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Student Performance Changes 2019 to 2021

The Iowa Statewide Assessment of Student Progress (ISASP) measures student achievement and understanding of the Iowa Core Standards in English Language Arts (ELA), Mathematics, and Science. Indicators of student proficiency and growth from grade-to-grade are provided. ISASP assesses English Language Arts and Mathematics for students in grades 3–11. The Science assessment is administered to students in grades 5, 8, and 10. The assessments, offered in both paper-and-pencil and computer-based formats during the last quarter of the academic year, include multiple-choice and technology-enhanced items, constructed response items, and open-ended essay questions.

Understanding how students change and grow over time is extremely important as teachers and schools design education programs tied to standards in English Language Arts, Mathematics, and Science. Student achievement and growth can be characterized in a variety of ways, including proficiency, growth scores, and status relative to a goal such as college readiness. Three different types of metrics are available to help interpret ISASP results. A *proficiency-based reference* provides students and educators with descriptions and indicators of levels of proficiency as determined by the state of Iowa. Proficiency-based scores are criterion-referenced and reflect the level of achievement compared to the Iowa Core standards. A *normative-based reference* is provided through the state of Iowa percentile ranks that are available after each administration. A *growth reference* provides a metric for examining the change between two or more administrations of an assessment.

ISASP was first administered in the spring of 2019 and the second administration of ISASP was spring 2021. This document summarizes the changes in student performance for all test takers as well as for a matched set of test takers that completed both the 2019 and 2021 administrations within a proctored environment. This document is designed to complement available information on proficiency rates.

ISASP Scale

The primary functions of the ISASP Scale Score are (1) to provide a consistent metric for translating ISASP scores into the standards-based achievement levels adopted by the Iowa State Board of Education of Not-Yet-Proficient, Proficient, and Advanced; (2) to establish a common metric for scores on ISASP forms across years that can be responsive to changes in assessment design such as adaptive testing; (3) to support future efforts related to metrics for student growth; and (4) to determine how far students are from the various proficiency levels without depending upon changing raw scores across forms.

Table 1 provides the means and standard deviations of the ISASP Scale Score distributions used to develop the raw score to scale score conversion tables for the 2019 ISASP program. These can be used as reference points for future administrations. The steadily increasing means from grade-to-grade establish the expected change in scale scores for grade cohorts. The ISASP Scale Scores can be used as a direct measure of year-to-year change on a common metric in a change-score growth model. The distributions of ISASP scores also exhibit the property of steadily increasing variability across grades found in other vertical scaling studies in K-12 assessment.

Table 1. Means and Standard Deviations of the ISASP Scale Score Distributions for 2019

Grade	Mean Scale Score	Standard Deviation
3	409	28.7
4	432	34.4
5	454	41.3
6	476	45.5
7	500	50.0
8	521	55.0
9	544	60.5
10	568	60.5
11	593	60.5

Average State Results for All Test Takers

The performance of all students enrolled in public and accredited private schools in the State of Iowa in 2019 and 2021 is described in Figures 1 to 3 using the average scale score metric. The average ISASP Scale Scores in ELA, Mathematics and Science reflect changes in achievement in each grade over the two-year period.

In ELA, there was no consistent pattern of change; some grade-level averages increased slightly while others decreased. In Mathematics, with the exception of a small increase in grade 3, there was a consistent pattern of decreasing grade-level averages. In Science, there were increases in average performance in grades 5 and 8 and a decrease in grade 10.

Figure 1. English Language Arts Results

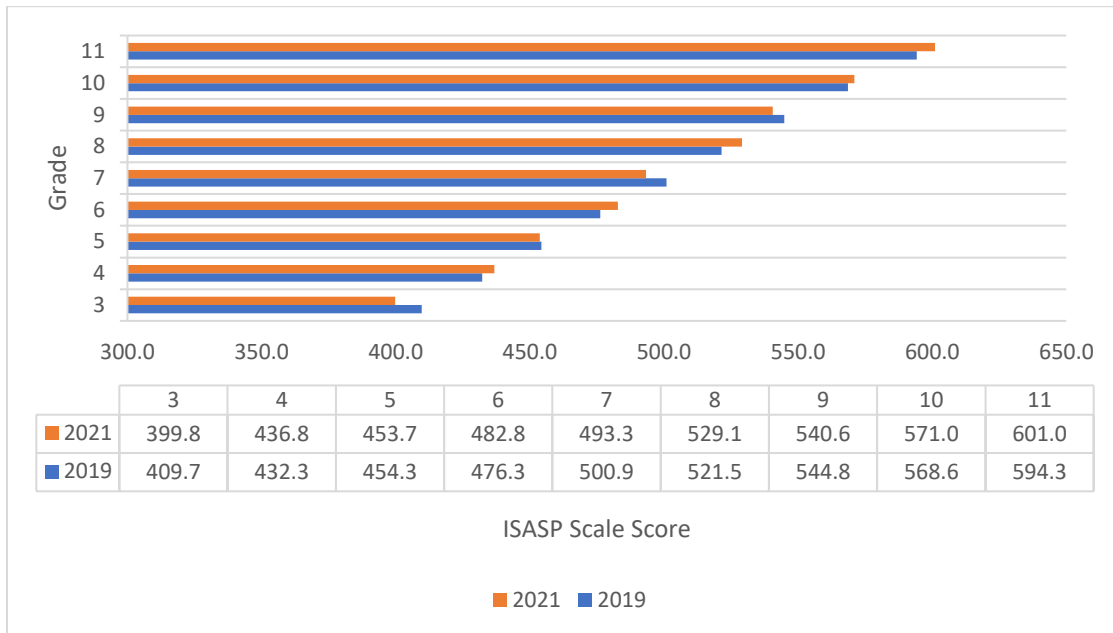


Figure 2. Mathematics Results

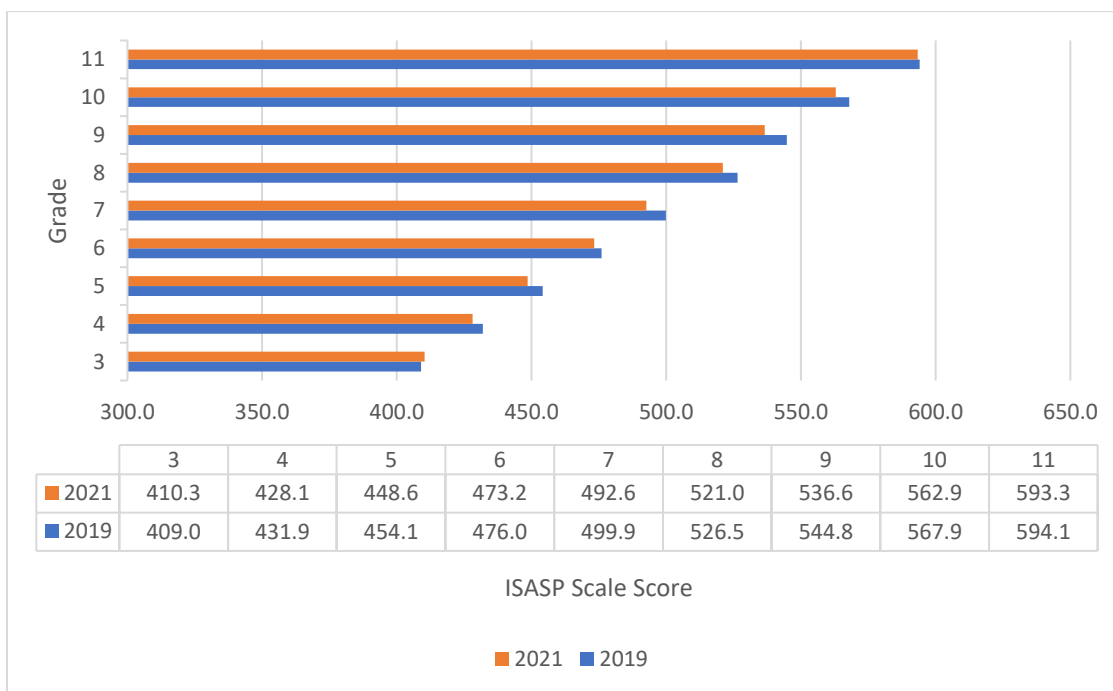
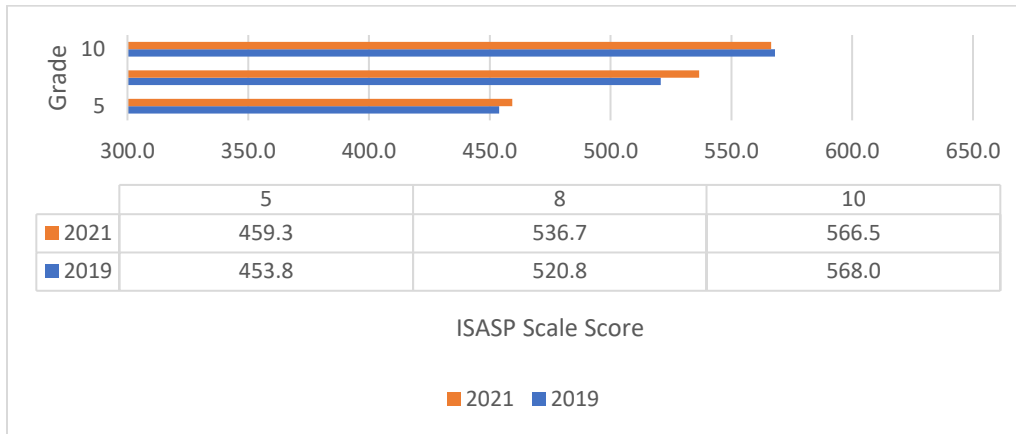


Figure 3. Science Results



Average State Results for Matched Cohorts

Tables 2 to 8 provide results for matched cohorts of students. Matching records for 2021 and 2019 ISASP was done so that only students who completed the tests in a proctored environment were included. All students in the 2021 and 2019 datasets had verified state identification numbers. Students were removed from the matched datasets if they did not complete the applicable test for both years (i.e., removed from the ELA dataset if they did not have an ELA score for both 2021 and 2019). This process resulted in the final matched datasets with approximately 90% of student records for grades 5-11 in 2021 matched to their records for grades 3-9 in 2019 for ELA, Mathematics, and Science (grade 10 in 2021 matched to grade 8 in 2019, since Science is only administered in grades 5, 8, and 10).

Table 2. Average Scale Score for Matched Cohort by Subject and Grade

Subject	2021				2019		
	N-Count	Grade	Mean	SD	Grade	Mean	SD
ELA	33701	5	454.0	39.1	3	410.0	26.8
	34137	6	483.1	42.1	4	433.0	31.6
	35086	7	493.5	45.6	5	455.0	37.5
	35047	8	529.5	51.8	6	477.4	42.0
	34104	9	541.7	56.5	7	502.7	47.2
	32865	10	572.2	55.7	8	524.3	51.0
	31205	11	601.9	58.2	9	550.1	53.9
Math	33786	5	449.0	41.3	3	409.3	28.6
	34225	6	473.7	47.5	4	432.7	34.2
	35181	7	492.8	49.2	5	454.8	41.0
	35205	8	521.4	53.1	6	477.0	45.1
	34346	9	537.5	58.9	7	501.7	49.6
	33146	10	564.1	59.2	8	529.4	54.6
	31488	11	594.1	64.7	9	549.8	58.3
Science	33004	10	567.5	55.1	8	523.6	54.4

Table 3. Average Scale Score for Matched Cohort by Race/Ethnicity by Grade for ELA

Race	2021				2019		
	N-Count	Grade	Mean	SD	Grade	Mean	SD
American Indian	110	5	443.0	35.7	3	403.8	24.9
Asian	712	5	461.8	40.7	3	411.7	28.9
African American	1978	5	428.2	35.4	3	392.5	23.7
Native Hawaiian/Pacific Islander	95	5	425.4	33.5	3	387.9	21.2
Hispanic	3715	5	437.3	36.3	3	398.8	24.6
Two or more races	1516	5	447.2	40.5	3	406.5	26.7
White	25575	5	458.7	38.2	3	413.3	26.2
American Indian	88	6	465.5	43.0	4	419.7	29.3
Asian	710	6	492.7	45.0	4	434.9	33.8
African American	1965	6	451.4	38.6	4	407.9	28.6
Native Hawaiian/Pacific Islander	102	6	451.1	37.4	4	406.1	29.7
Hispanic	3781	6	467.3	39.6	4	419.8	30.1
Two or more races	1458	6	474.9	42.5	4	428.5	30.6
White	26033	6	488.2	40.8	4	437.1	30.5
American Indian	107	7	471.0	43.2	5	438.3	38.8
Asian	716	7	509.0	48.9	5	460.9	40.1
African American	1916	7	461.1	40.8	5	428.5	34.4
Native Hawaiian/Pacific Islander	92	7	468.7	42.0	5	434.0	32.8
Hispanic	3924	7	478.3	42.2	5	439.6	35.2
Two or more races	1493	7	484.3	45.3	5	448.7	37.0
White	26838	7	498.4	44.7	5	459.4	36.6
American Indian	110	8	500.2	47.0	6	455.2	35.2
Asian	667	8	550.2	51.9	6	491.2	47.4
African American	1833	8	489.7	48.7	6	447.9	39.0
Native Hawaiian/Pacific Islander	82	8	495.2	49.9	6	450.6	39.3
Hispanic	3828	8	509.0	49.7	6	460.8	39.1
Two or more races	1404	8	519.6	52.1	6	470.7	42.0
White	27123	8	535.3	50.1	6	481.9	41.0
American Indian	83	9	513.0	58.5	7	475.6	49.8
Asian	659	9	559.0	59.0	7	513.6	49.7
African American	1638	9	498.2	50.0	7	464.5	43.9
Native Hawaiian/Pacific Islander	77	9	501.5	44.8	7	470.7	42.5
Hispanic	3625	9	518.6	52.7	7	481.5	45.9
Two or more races	1305	9	531.4	58.4	7	494.6	48.9
White	26717	9	547.7	55.0	7	508.3	45.4
American Indian	97	10	546.6	49.5	8	503.8	46.6
Asian	679	10	589.2	59.0	8	538.5	58.9
African American	1516	10	531.4	50.0	8	486.2	47.7
Native Hawaiian/Pacific Islander	84	10	529.4	57.0	8	485.3	54.4

Table 3 (cont.) Average Scale Score for Matched Cohort by Race/Ethnicity by Grade for ELA

<i>Hispanic</i>	3330	10	549.9	51.0	8	502.1	48.2
<i>Two or more races</i>	1199	10	561.3	55.8	8	516.6	52.6
<i>White</i>	25960	10	577.7	54.7	8	529.6	49.4
<i>American Indian</i>	95	11	579.3	48.4	9	524.7	50.8
<i>Asian</i>	686	11	617.6	63.8	9	560.5	59.4
<i>African American</i>	1321	11	559.1	55.7	9	509.4	52.0
<i>Native Hawaiian/Pacific Islander</i>	67	11	553.6	57.0	9	505.9	52.9
<i>Hispanic</i>	2929	11	581.0	56.1	9	525.9	53.5
<i>Two or more races</i>	1031	11	593.4	60.2	9	544.0	54.8
<i>White</i>	25076	11	606.7	56.7	9	555.2	52.1

Table 4. Average Scale Score for Matched Cohort by Race/Ethnicity by Grade for Mathematics

<i>Race</i>	2021				2019		
	N-Count	Grade	Mean	SD	Grade	Mean	SD
<i>American Indian</i>	111	5	438.2	35.5	3	402.2	26.3
<i>Asian</i>	712	5	465.8	49.8	3	413.3	33.1
<i>African American</i>	1984	5	421.7	30.6	3	389.6	21.6
<i>Native Hawaiian/Pacific Islander</i>	96	5	418.6	28.7	3	386.2	19.0
<i>Hispanic</i>	3721	5	431.5	34.2	3	397.3	24.4
<i>Two or more races</i>	1519	5	439.2	40.5	3	404.2	27.5
<i>White</i>	25643	5	454.0	41.1	3	412.9	28.4
<i>American Indian</i>	89	6	448.6	40.5	4	421.3	31.6
<i>Asian</i>	710	6	494.5	59.9	4	436.5	37.3
<i>African American</i>	1973	6	437.1	35.5	4	405.7	26.7
<i>Native Hawaiian/Pacific Islander</i>	103	6	437.1	36.3	4	405.4	26.7
<i>Hispanic</i>	3786	6	454.1	39.8	4	418.8	30.4
<i>Two or more races</i>	1466	6	461.5	45.9	4	425.1	32.5
<i>White</i>	26098	6	479.6	46.8	4	437.2	33.6
<i>American Indian</i>	108	7	471.9	44.4	5	441.0	39.0
<i>Asian</i>	717	7	516.3	62.3	5	472.2	48.1
<i>African American</i>	1927	7	458.7	35.3	5	428.4	31.5
<i>Native Hawaiian/Pacific Islander</i>	93	7	463.2	36.7	5	432.3	29.4
<i>Hispanic</i>	3937	7	473.2	39.3	5	439.4	34.5
<i>Two or more races</i>	1498	7	481.7	47.1	5	446.5	40.2
<i>White</i>	26901	7	498.3	49.2	5	459.1	40.9
<i>American Indian</i>	109	8	491.9	42.0	6	456.3	35.9
<i>Asian</i>	671	8	555.5	69.2	6	499.9	54.1

Table 4 (cont). Average Scale Score for Matched Cohort by Race/Ethnicity by Grade for Mathematics

<i>African American</i>	1852	8	484.8	37.9	6	442.8	34.2
<i>Native Hawaiian/Pacific Islander</i>	83	8	493.5	38.5	6	447.0	31.8
<i>Hispanic</i>	3852	8	500.8	44.0	6	458.5	37.8
<i>Two or more races</i>	1413	8	508.8	50.4	6	467.6	44.1
<i>White</i>	27225	8	526.8	52.9	6	482.0	44.6
<i>American Indian</i>	86	9	512.7	55.9	7	482.5	45.5
<i>Asian</i>	665	9	568.2	72.5	7	521.5	58.9
<i>African American</i>	1681	9	495.6	42.1	7	463.7	37.3
<i>Native Hawaiian/Pacific Islander</i>	83	9	500.2	43.2	7	465.6	38.1
<i>Hispanic</i>	3671	9	513.2	49.3	7	478.6	41.6
<i>Two or more races</i>	1322	9	523.1	57.0	7	490.5	48.7
<i>White</i>	26838	9	543.6	58.5	7	507.4	48.9
<i>American Indian</i>	97	10	535.6	50.3	8	510.1	48.1
<i>Asian</i>	683	10	590.3	71.1	8	553.2	65.2
<i>African American</i>	1555	10	521.2	41.4	8	491.3	42.0
<i>Native Hawaiian/Pacific Islander</i>	84	10	527.4	51.0	8	497.2	47.4
<i>Hispanic</i>	3389	10	538.5	48.7	8	506.3	46.9
<i>Two or more races</i>	1219	10	551.0	56.6	8	519.6	53.3
<i>White</i>	26119	10	570.1	58.9	8	534.7	54.1
<i>American Indian</i>	97	11	561.2	41.7	9	515.8	47.5
<i>Asian</i>	696	11	628.5	82.5	9	578.4	71.6
<i>African American</i>	1367	11	551.1	43.5	9	509.3	46.0
<i>Native Hawaiian/Pacific Islander</i>	69	11	556.3	46.7	9	517.4	48.9
<i>Hispanic</i>	3002	11	567.2	51.7	9	524.9	50.2
<i>Two or more races</i>	1046	11	582.6	64.5	9	540.4	57.7
<i>White</i>	25211	11	599.3	64.6	9	554.8	57.6

Table 5. Average Scale Score for Matched Cohort by Race/Ethnicity by Grade for Science

<i>Race</i>	2021				2019		
	N-Count	Grade	Mean	SD	Grade	Mean	SD
<i>American Indian</i>	96	10	549.8	49.2	8	507.9	46.7
<i>Asian</i>	678	10	590.2	59.7	8	538.5	59.3
<i>African American</i>	1537	10	527.9	45.9	8	484.3	44.3
<i>Native Hawaiian/Pacific Islander</i>	83	10	532.7	49.9	8	490.0	52.1
<i>Hispanic</i>	3369	10	545.9	48.5	8	500.2	48.6
<i>Two or more races</i>	1204	10	556.7	52.7	8	514.9	52.6
<i>White</i>	26037	10	572.8	54.6	8	529.1	53.7

Table 6. Average Scale Score for Matched Cohort by Individualized Education Plan (IEP) by Subject and Grade

Subject	IEP	N-Count	2021			2019		
			Grade	Mean	SD	Grade	Mean	SD
ELA	No	29127	5	460.2	36.5	3	414.3	25.1
	Yes	4574	5	413.9	30.6	3	382.9	20.7
	No	29625	6	490.0	38.6	4	438.3	28.9
	Yes	4512	6	438.1	35.5	4	397.9	25.2
	No	30508	7	500.6	42.9	5	461.4	34.5
	Yes	4578	7	446.2	33.0	5	411.9	27.2
	No	30721	8	537.9	47.7	6	483.9	39.2
	Yes	4326	8	470.0	39.2	6	430.6	29.9
	No	30213	9	550.0	52.8	7	510.0	43.7
	Yes	3891	9	477.1	39.4	7	446.2	33.2
	No	29480	10	579.5	52.6	8	531.6	47.5
	Yes	3385	10	508.6	39.7	8	461.3	35.5
	No	28381	11	608.9	54.8	9	557.2	50.0
	Yes	2824	11	530.9	41.0	9	478.2	37.3
Math	No	29185	5	454.1	40.6	3	412.9	27.9
	Yes	4601	5	417.3	30.0	3	386.5	21.5
	No	29691	6	479.9	46.0	4	437.4	32.8
	Yes	4534	6	433.1	36.0	4	401.7	26.3
	No	30571	7	499.1	48.5	5	460.5	39.8
	Yes	4610	7	451.0	29.9	5	417.3	26.2
	No	30830	8	527.8	52.4	6	483.0	43.6
	Yes	4375	8	475.7	32.2	6	434.3	29.9
	No	30393	9	544.6	57.9	7	508.1	48.0
	Yes	3953	9	483.4	33.0	7	452.3	30.0
	No	29698	10	570.7	58.0	8	536.0	53.0
	Yes	3448	10	506.9	32.1	8	473.0	29.9
	No	28614	11	600.1	64.1	9	556.1	56.5
	Yes	2874	11	533.8	31.4	9	487.1	34.7
Science	No	29596	10	573.6	53.6	8	529.5	52.8
	Yes	3408	10	514.5	36.3	8	471.9	37.5

Table 7. Average Scale Score for Matched Cohort by Free and Reduced Lunch (FRL) by Subject and Grade

Subject	FRL	2021				2019		
		N-Count	Grade	Mean	SD	Grade	Mean	SD
ELA	No	19904	5	465.2	37.1	3	417.3	25.7
	Yes	13797	5	437.8	36.2	3	399.6	24.7
	No	20427	6	495.1	39.1	4	441.6	29.8
	Yes	13710	6	465.4	40.0	4	420.2	29.8
	No	21230	7	505.4	44.0	5	464.7	35.8
	Yes	13856	7	475.3	41.7	5	440.0	35.1
	No	21579	8	543.0	48.3	6	488.0	40.1
	Yes	13468	8	507.9	49.9	6	460.3	39.4
	No	21428	9	555.5	54.1	7	514.5	44.7
	Yes	12676	9	518.3	52.5	7	482.8	44.6
	No	21440	10	584.1	53.8	8	535.5	48.7
	Yes	11425	10	549.9	52.3	8	503.4	48.7
Math	No	21376	11	613.0	56.0	9	561.2	51.1
	Yes	9829	11	577.5	55.3	9	525.8	52.1
	No	19947	5	460.7	41.6	3	417.0	28.6
	Yes	13839	5	432.2	34.5	3	398.2	24.7
	No	20467	6	487.4	47.3	4	442.0	33.4
	Yes	13758	6	453.3	40.0	4	418.7	30.3
	No	21276	7	506.0	50.2	5	465.1	41.2
	Yes	13905	7	472.6	40.0	5	439.1	35.2
	No	21634	8	534.5	53.9	6	488.4	44.9
	Yes	13571	8	500.5	44.6	6	458.7	38.9
	No	21505	9	552.0	59.6	7	514.0	49.7
	Yes	12841	9	513.4	49.0	7	481.0	42.1
Science	No	21542	10	577.4	59.9	8	541.4	54.8
	Yes	11604	10	539.4	49.1	8	507.3	46.8
	No	21486	11	607.3	66.4	9	561.4	58.3
	Yes	10002	11	565.7	50.4	9	524.8	49.8
	No	21490	10	578.7	54.8	8	534.2	53.8
	Yes	11514	10	546.8	49.4	8	503.7	49.6

Table 8. Average Scale Score for Matched Cohort for English Learners (EL) by Subject and Grade

Subject	EL	2021				2019		
		N-Count	Grade	Mean	SD	Grade	Mean	SD
ELA	No	32278	5	455.9	38.5	3	411.5	26.3
	Yes	1423	5	409.0	23.3	3	377.1	14.2
	No	32812	6	485.1	41.3	4	434.7	30.8
	Yes	1325	6	433.9	27.7	4	389.9	18.6
	No	33760	7	495.5	45.0	5	456.9	36.7
	Yes	1326	7	443.0	25.8	5	406.1	20.8
	No	33748	8	531.9	50.9	6	479.4	41.2
	Yes	1299	8	466.0	31.4	6	423.2	23.1
	No	32789	9	544.4	55.5	7	505.3	46.0
	Yes	1315	9	474.3	32.3	7	437.3	26.9
	No	31533	10	574.8	55.0	8	527.1	49.8
	Yes	1332	10	510.5	33.5	8	458.6	31.1
	No	30118	11	604.5	57.1	9	552.9	52.4
	Yes	1087	11	527.6	35.0	9	471.3	33.6
Math	No	32358	5	450.7	41.3	3	410.6	28.4
	Yes	1428	5	412.7	21.3	3	380.3	14.0
	No	32896	6	475.5	47.3	4	434.2	33.8
	Yes	1329	6	427.8	26.9	4	395.6	18.1
	No	33847	7	494.6	49.2	5	456.4	40.8
	Yes	1334	7	447.2	22.0	5	414.6	19.6
	No	33885	8	523.2	53.1	6	478.8	44.8
	Yes	1320	8	473.1	25.3	6	431.1	22.9
	No	32992	9	539.8	58.7	7	503.9	49.2
	Yes	1354	9	482.3	27.3	7	448.2	22.6
	No	31777	10	566.5	59.0	8	531.8	54.3
	Yes	1369	10	509.1	28.7	8	475.0	26.2
	No	30370	11	596.3	64.6	9	552.1	57.8
	Yes	1118	11	533.6	27.0	9	487.7	30.5
Science	No	31649	10	569.8	54.8	8	526.0	53.9
	Yes	1355	10	514.8	31.0	8	466.7	29.4

Average Gain Scores

The ISASP tests are vertically aligned and scaled. This means that each successive test level builds upon the content and skills previously measured to ensure that tests taken over multiple grade levels show a coherent progression in learning. Although each test is developed for a different grade level, student growth and progress can be monitored using the same scale.

Gain scores can be used to quantify the change in performance from one year to the next for either an individual student or for a group of students. Average gain scores are calculated by subtracting each student's prior scale score from their current-year score (i.e., $SS_{\text{Year2}} - SS_{\text{Year1}}$) and then taking the average over all students. The sign and magnitude of the gain scores are important in indicating the change in performance. The magnitude of the gain score indicates how much the group of students has changed.

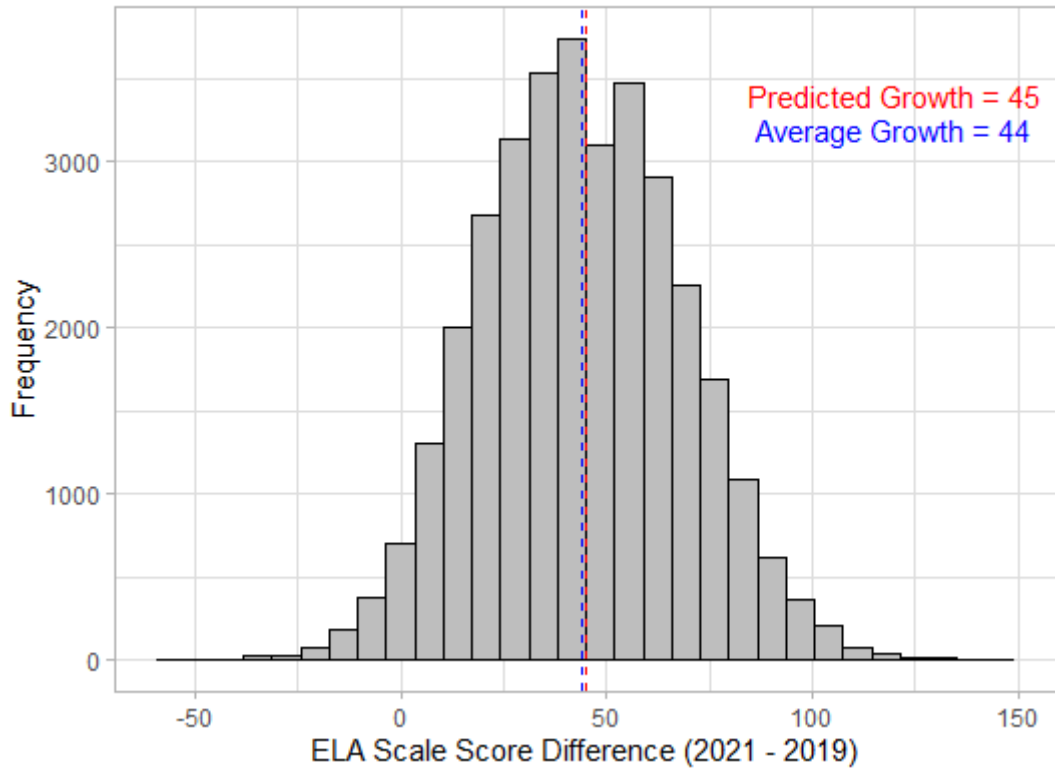
The following graphs provide gain scores for ELA, Mathematics and Science for students included in the matched cohort. Plotted in each graph is the predicted growth for two years (the red vertical line) given the ISASP Scale Score assumptions (see Table 9). Also plotted is the average gain score for the matched cohort (the blue vertical line) represented by the difference between scale scores in 2021 and 2019.

Table 9. Predicted Growth based on ISASP Vertical Scale

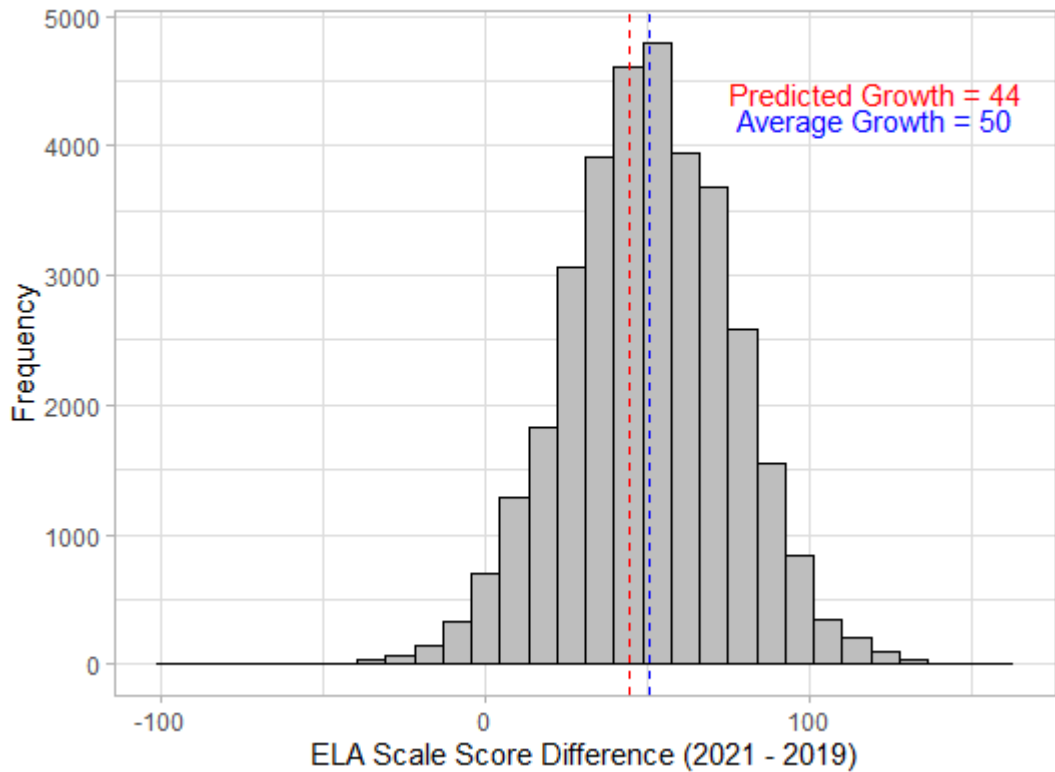
<i>Grade</i>	Mean Scale Score	Standard Deviation	Predicted Growth for One Year	Predicted Growth for Two Years
3	409	28.7		
4	432	34.4	23	
5	454	41.3	22	45
6	476	45.5	22	44
7	500	50.0	24	46
8	521	55.0	21	45
9	544	60.5	23	44
10	568	60.5	24	47
11	593	60.5	25	49

ISASP Frequency Distributions of Gains for ELA

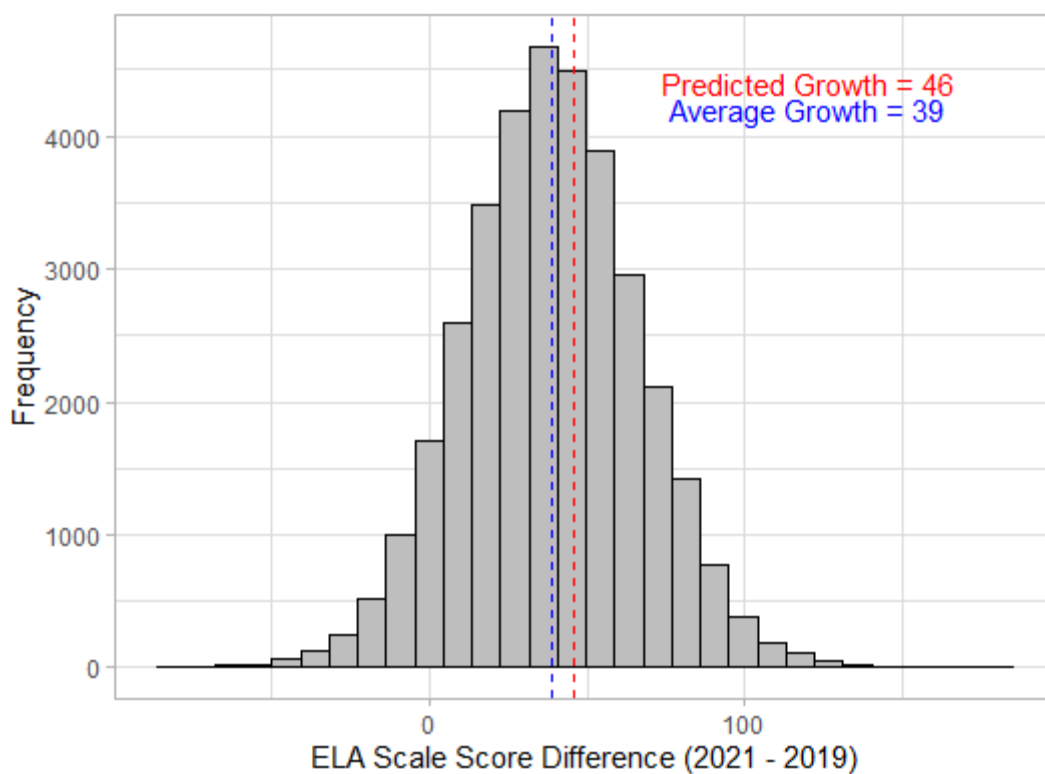
Grade 05



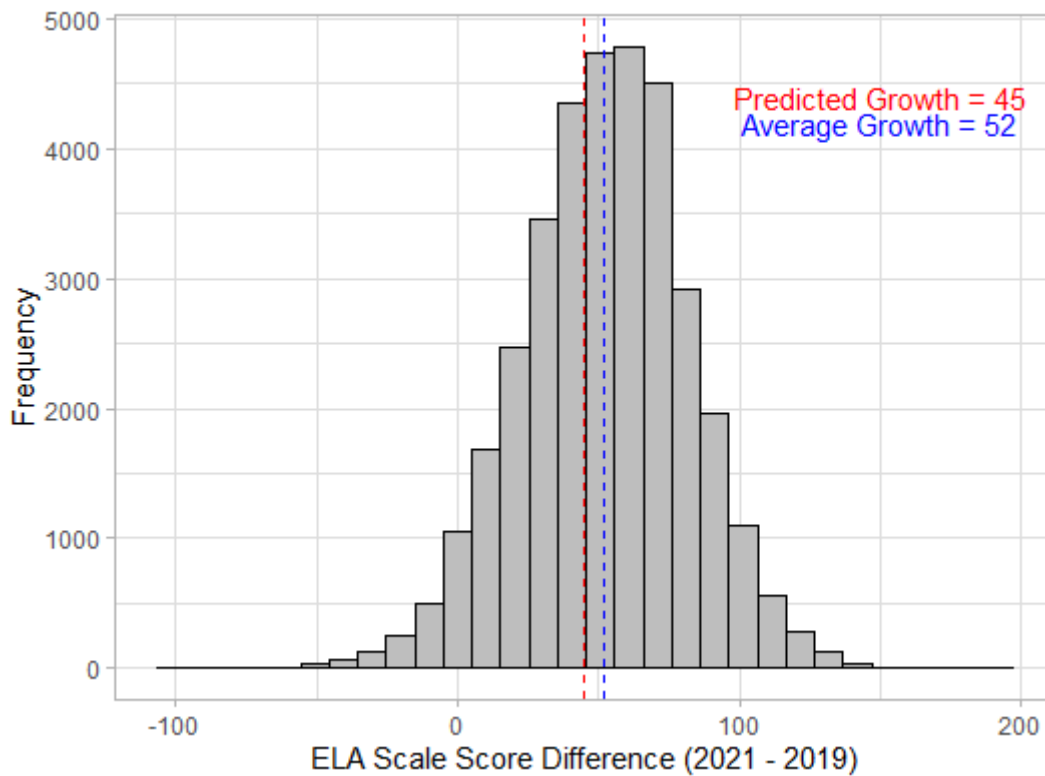
Grade 06



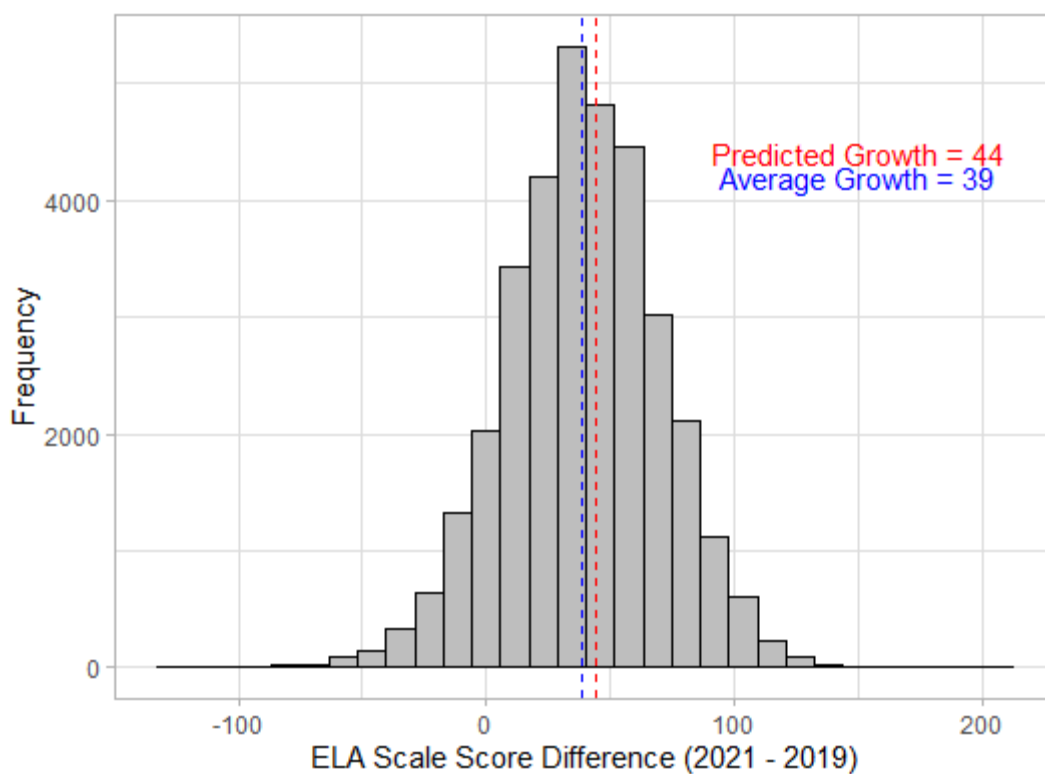
Grade 07



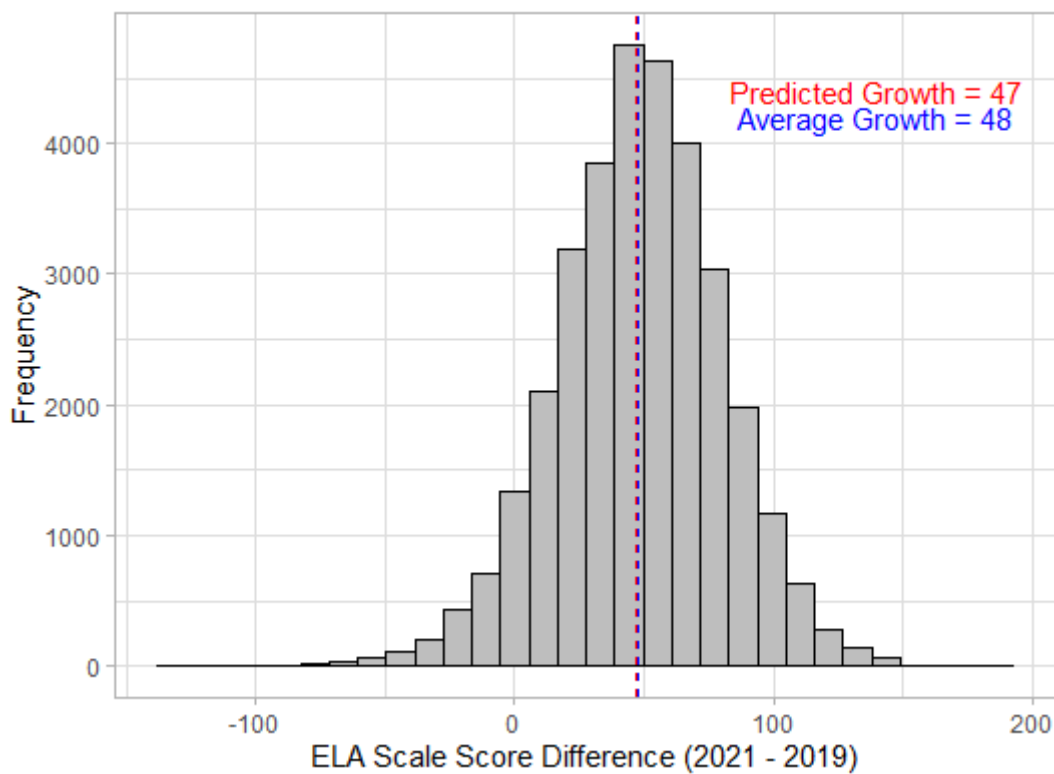
Grade 08



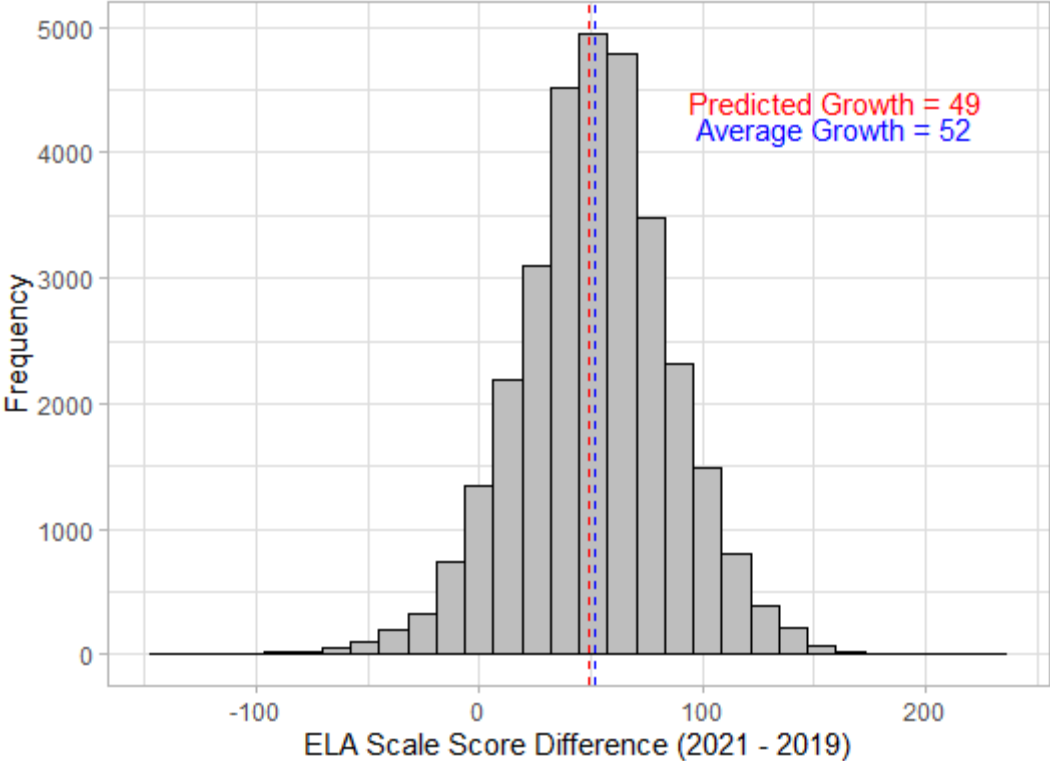
Grade 09



Grade 10

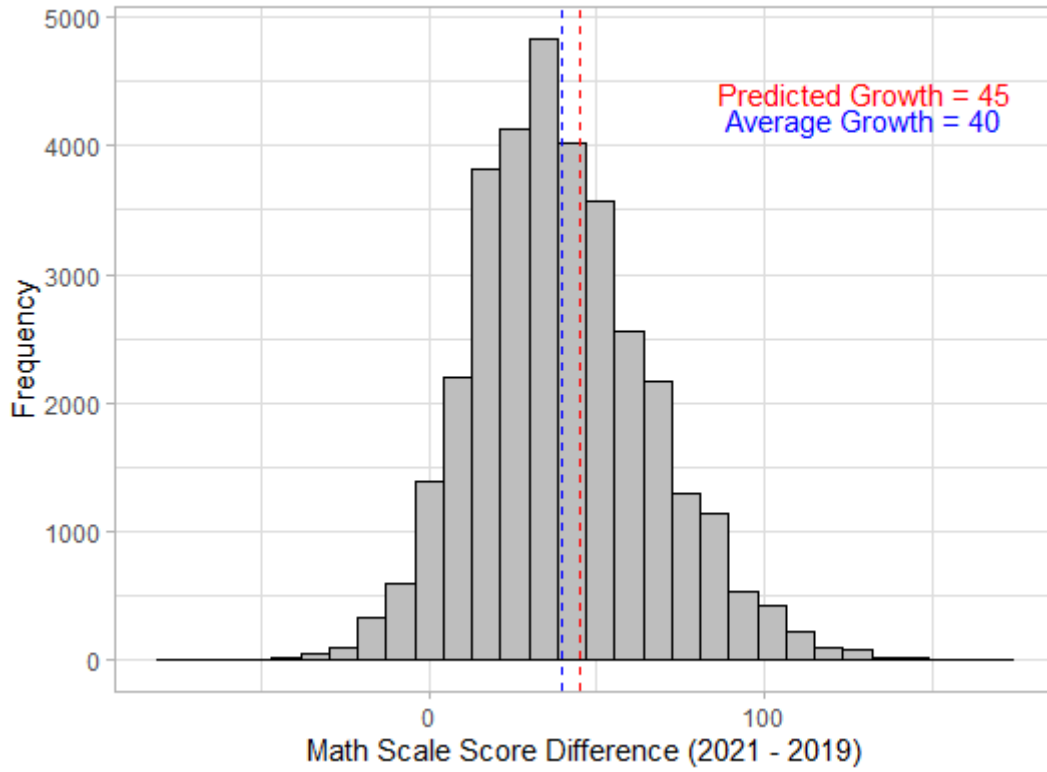


Grade 11

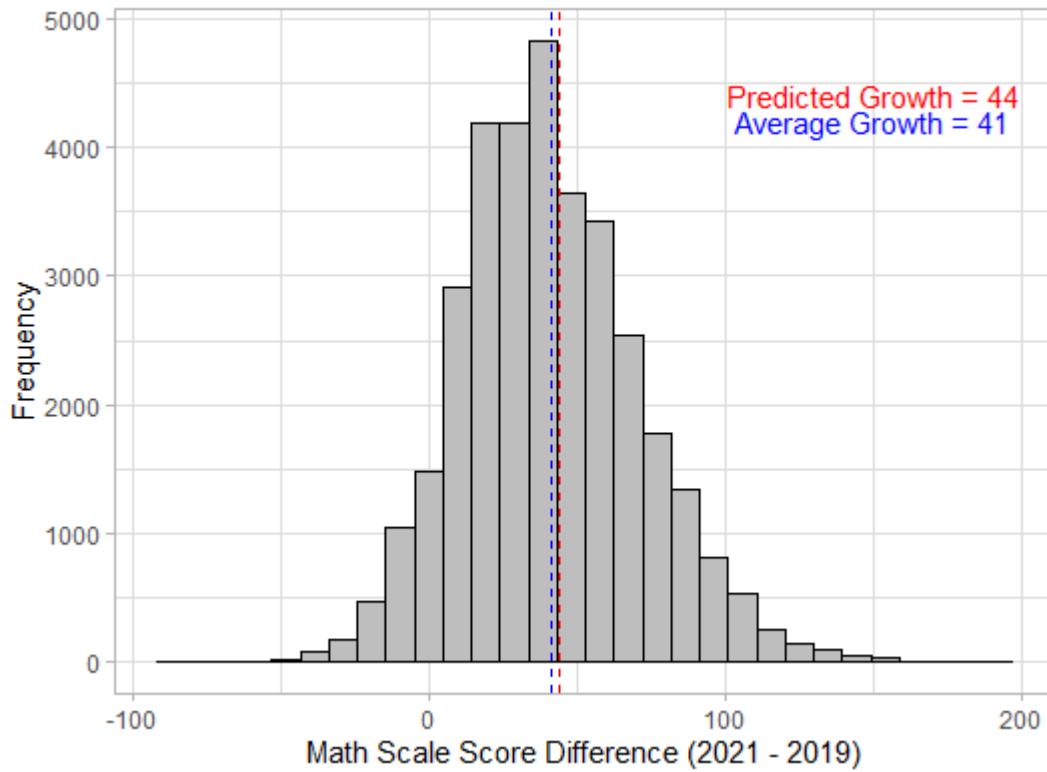


ISASP Frequency Distributions of Gains for Mathematics

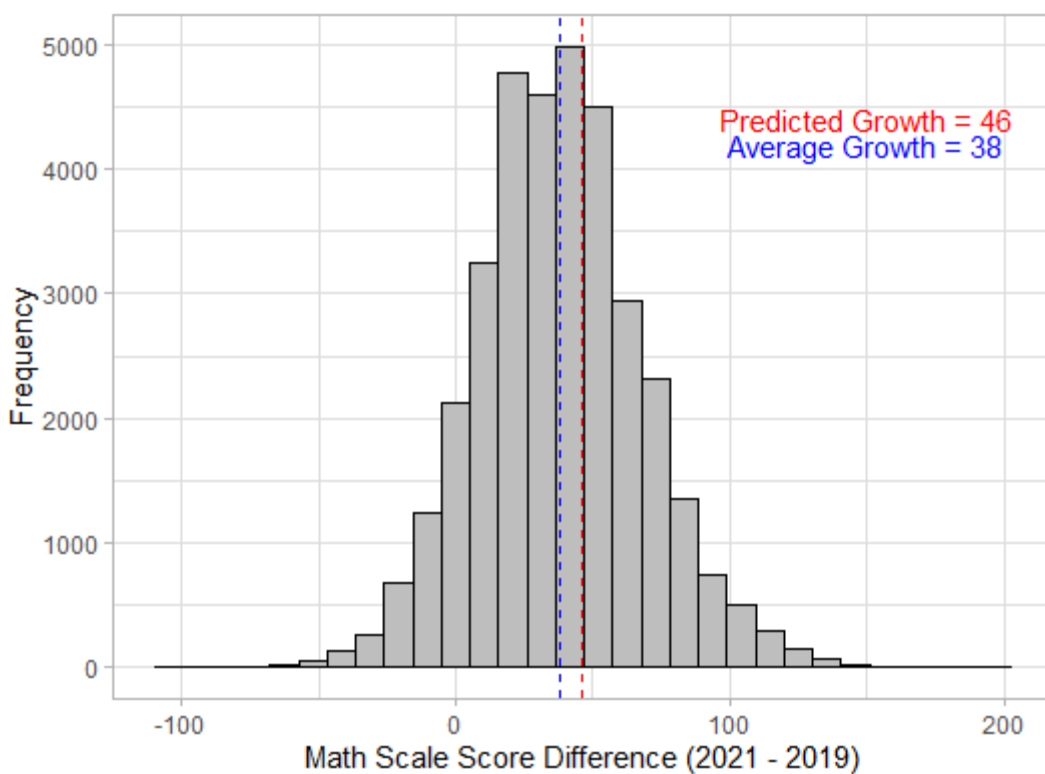
Grade 05



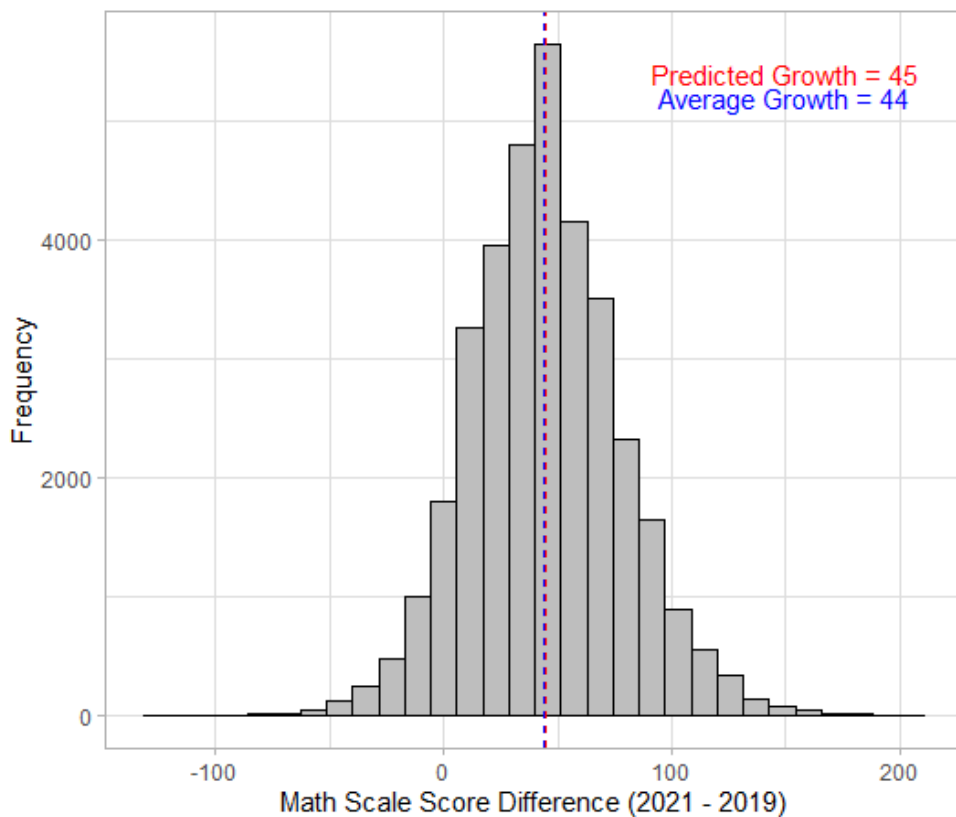
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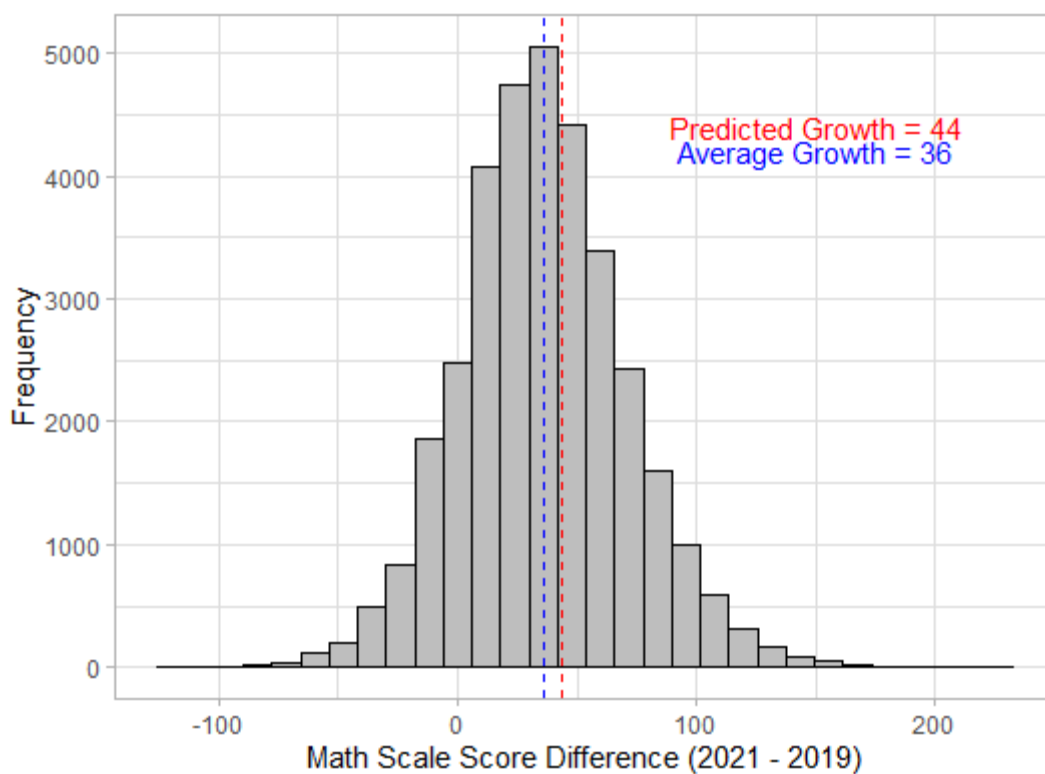
Grade 07



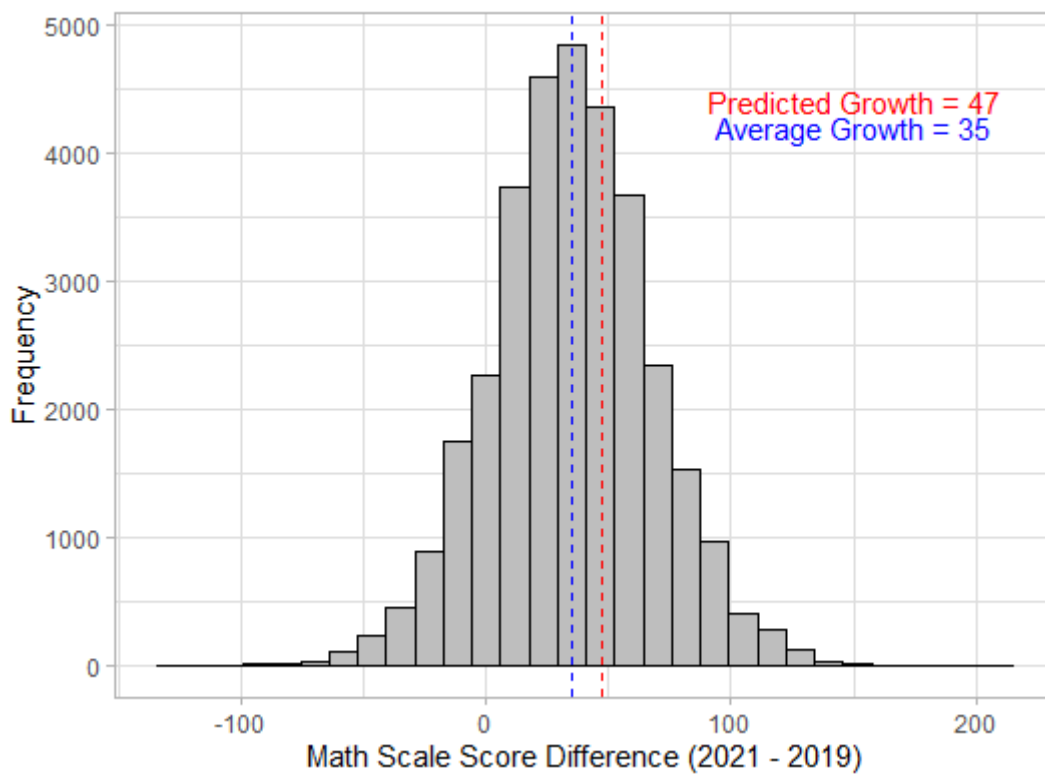
Grade 08



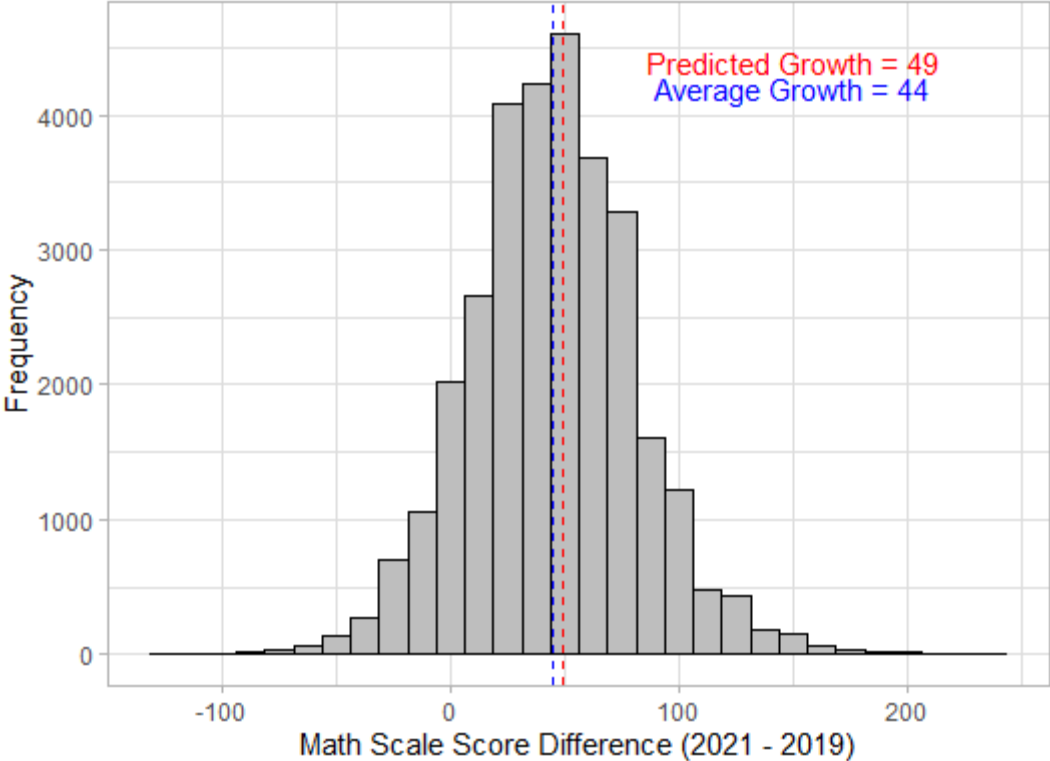
Grade 09



Grade 10



Grade 11



ISASP Frequency Distribution of Gains for Science Grade 10

