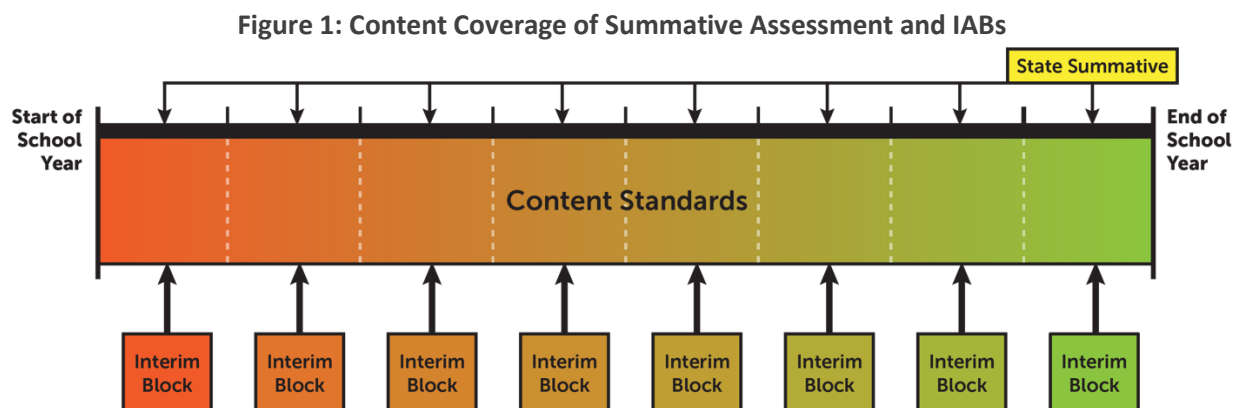


The Relationship between Student **Participation** on the Smarter Balanced Interim Assessment Blocks and Student **Growth** on the Smarter Balanced Summative Assessment- 2023-24 Data

Introduction

Unlike the Smarter Balanced Summative Assessments that sample the content standards for the *entire* grade and are best designed to measure overall achievement and growth, Smarter Balanced Interim Assessment Blocks (IABs)—both Focused Interim Assessment Blocks and Interim Assessment Blocks—in English language arts (ELA) and mathematics are short, fixed-form assessments that focus on a subset of the grade-level standards (Smarter Balanced, 2019). Figure 1 visually illustrates the difference in scope between the state summative assessment and the IABs in the Smarter Balanced Assessment System (Connecticut State Department of Education, 2022).



There are many benefits to utilizing the IABs when using the Smarter Balanced system. Interims are intentionally designed with a narrower focus in order to allow teachers and students to gain greater insight into how students are progressing. Teachers can use the information from the IABs to adjust their instruction to enhance student learning. The IABs contain high-quality test questions that are developed in the same rigorous manner as that for the summative, and they cover the range of depth of knowledge

described in the Connecticut Core Standards. They are delivered on the same testing platform as the summative assessments and incorporate a wide array of accommodations and supports. The tests are scored immediately; moreover, teachers can view the test questions, scoring rubrics, and student responses to obtain greater insight into student cognition and reasoning. In addition to administering the entire IAB as a stop-and-test event, the IABs can also be used in non-standard ways. For instance, a teacher may use test items from an IAB to illustrate the expectation of the standard, as a Do-Now exercise in the classroom, or as an exit ticket to check for understanding. The IABs are a critical component of the system because they can align coherently with a district's curriculum and assessment practices (Marion et al, 2019).

This study replicates the methodology used in the [2020 study](#) to examine if *sustained participation* in the IABs during the 2023-24 SY has any relationship to improved performance on the summative in terms of growth on the Smarter Balanced vertical scale score on the end-of-grade summative assessment from 2022-23 to 2023-24. When referring to the IABs for the purpose of this paper, both typical interim blocks that assess 3-8 targets and the focused interim blocks that assess 1-3 targets are included. *Sustained participation* is defined as a student who participates in *at least four* different IABs in a subject area during the school year. Since the IABs cover only a portion of the content standards, participation in four different IABs is considered to represent reasonable coverage of the breadth of the standards and is therefore a suitable standard for examination of growth on the end-of-grade summative score. Moreover, administration of four or more different IABs during the school year may be representative of a more systematic integration of the IABs into the curriculum.

Data

The data for this analysis were the following administrative, student-level data sets:

- The interim assessment participation data in the 2023-24 school year; and
- The spring 2023 and spring 2024 summative assessment results to evaluate growth.

Results

The number of times a specific IAB was administered in both ELA and mathematics is presented in Tables 1, 2, and 3. The ELA Read Informational Texts block was the most frequently administered ELA block

across Grades 3 through 8, followed by Read Literary Texts block (Table 1). The least administered blocks were Revision for Grade 3, 4, and 5, and Brief Writes for Grade 6, 7, and 8.

Table 1. Number of ELA IABs Administered in 2023-24

Interim Block	Grade						
	3	4	5	6	7	8	Total
Brief Writes	4,333	3,988	2,764	3,607	2,479	2,376	19,547
Editing	10,406	9,287	9,119	8,728	6,525	9,410	53,475
Language and Vocabulary Use	9,659	10,024	11,360	7,085	6,262	5,840	50,230
Listen/Interpret	12,156	12,019	9,407	7,700	6,723	6,706	54,711
Read Informational Texts	19,201	19,067	18,894	17,593	16,127	13,855	104,737
Read Literary Texts	17,639	18,396	17,553	15,520	14,408	15,191	98,707
Research	11,464	12,181	11,441	17,101	17,943	19,334	89,464
Revision	3,037	2,864	2,398	3,808	2,697	0	14,804
Write and Revise	7,122	6,913	6,757	5,495	5,874	4,229	36,390
Total	95,677	95,209	90,112	86,928	79,116	77,252	524,294

Due to the organization of the Connecticut Core Standards in mathematics, the IABs in Grades 3-5 are different from those in Grades 6-8. In the elementary grades, the Number and Operations - Fractions block was the most frequently administered block, followed by Number and Operations in Base Ten block (Table 2). Besides the PT block, the least administered blocks were Geometry for Grades 3 and 5 and Measurement and Data for Grade 4.

**Table 2: Number of Mathematics IABs Administered in 2023-24 –
Grades 3-5**

Interim Block	Grade			
	3	4	5	Total
Geometry	4,675	5,624	4,238	14,537
Measurement and Data	13,014	3,451	17,077	33,542
Number and Operations - Fractions	17,122	33,608	22,748	73,478
Number and Operations in Base Ten	14,121	27,454	29,841	71,416
Operations and Algebraic Thinking	37,728	23,614	9,055	70,397
PT	821	751	898	2,470
Total	87,481	94,502	83,857	265,840

The Number System block and Expressions & Equations block were the most frequently administered blocks in Grades 6 and 7 respectively, while Statistics and Probability was the least frequently administered block besides PT (Table 3). In Grade 8, the Expressions & Equations block was the most frequently administered block.

**Table 3: Number of Mathematics IABs Administered in 2023-24 –
Grades 6-8**

Interim Block	Grade			
	6	7	8	Total
Expressions & Equations	15,414	19,184	24,376	58,974
Expressions & Equations II			2,592	2,592
Functions			7,771	7,771
Geometry	6,289	7,123	15,750	29,162
PT	1096	702	657	2,455
Ratio and Proportional Relationships	14,992	16,237		31,229
Statistics and Probability	2,001	2,025		4,026
The Number System	29,159	13,531	3,668	46,358
Total	68,951	58,802	54,814	182,567

Among the students in Grades 3 through 8 who took the Smarter Balanced Summative Assessments statewide, 62-79 percent took at least one IAB in ELA, and 64-84 percent took at least one IAB in mathematics during the 2023-24 school year (Table 4). In both ELA and mathematics, student participation was stronger in the elementary grades (3-5) than in the middle school grades (6-8). These are the highest participation rates observed since 2018-19.

**Table 4. Percentage of Students Taking
at Least One IAB**

Grade	ELA	Math
3	79	84
4	79	84
5	77	80
6	68	71
7	62	67
8	64	64
Total	72	75

Table 5 and Figure 2 (ELA) and Table 6 and Figure 3 (math) show the essential outcomes for this analysis. Students who took the assessment in spring 2023 and in the next higher grade in spring 2024 were matched based on their state assigned unique student identifier. The mean scale score gain from spring 2023 to spring 2024 achieved by these matched students was grouped based on their spring 2023 performance level (PL).

These results are further disaggregated based on eligibility for free- or reduced-price meals (FRPM). ELA results are in Table 7 and Figure 4, while mathematics results are in Table 8 and Figure 5.

Table 5:
Number/Percentage of Students Taking ELA IABs and Mean Scale Score Gain
on the ELA Summative Assessment from Spring 2023 to Spring 2024

2024 Grade	2023 PL	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
			N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
4	1	10,800	2,904	26.9	58	5,491	50.8	62	2,405	22.3	72
	2	7,788	1,520	19.5	54	4,070	52.3	56	2,198	28.2	63
	3	6,998	1,168	16.7	51	3,688	52.7	53	2,142	30.6	60
	4	8,779	1,146	13.1	41	4,798	54.7	42	2,835	32.3	46
5	1	11,359	3,377	29.7	49	5,808	51.1	56	2,174	19.1	65
	2	6,228	1,344	21.6	42	3,282	52.7	50	1,602	25.7	56
	3	7,384	1,464	19.8	40	3,950	53.5	46	1,970	26.7	51
	4	9,615	1,469	15.3	33	5,333	55.5	36	2,813	29.3	38
6	1	10,358	4,143	40.0	51	4,415	42.6	54	1,800	17.4	57
	2	6,391	1,967	30.8	37	2,914	45.6	39	1,510	23.6	42
	3	8,848	2,377	26.9	29	4,197	47.4	30	2,274	25.7	32
	4	9,045	2,192	24.2	17	4,317	47.7	19	2,536	28.0	21
7	1	9,511	4,264	44.8	43	3,854	40.5	44	1,393	14.7	49
	2	8,580	3,180	37.1	38	3,738	43.6	40	1,662	19.4	45
	3	10,372	3,417	32.9	32	4,567	44.0	34	2,388	23.0	36
	4	6,518	2,077	31.9	22	2,761	42.4	22	1,680	25.8	25
8	1	9,880	4,358	44.1	49	4,112	41.6	49	1,410	14.3	56
	2	8,000	2,890	36.1	31	3,542	44.3	33	1,568	19.6	38
	3	11,408	3,606	31.6	25	5,057	44.3	27	2,745	24.1	30
	4	6,094	1,666	27.3	18	2,903	47.6	20	1,525	25.0	21

Figure 2: Mean Scale Score Gain on ELA Summative Assessment from Spring 2023 to Spring 2024 Based on ELA IAB Participation

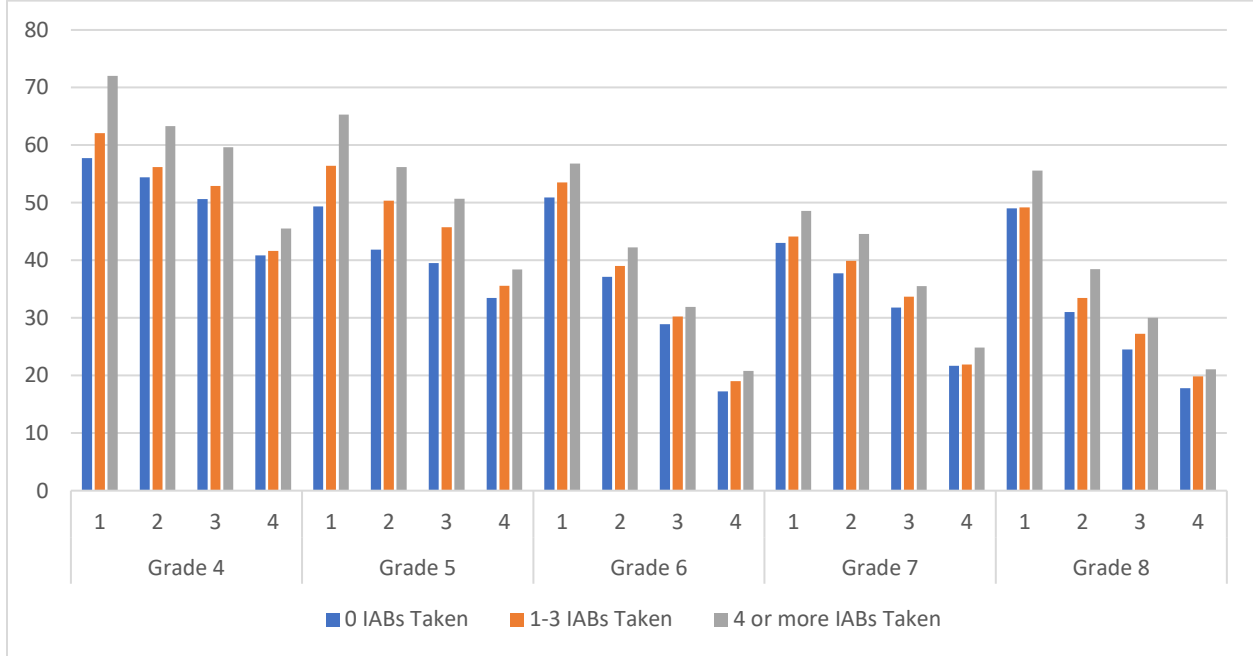
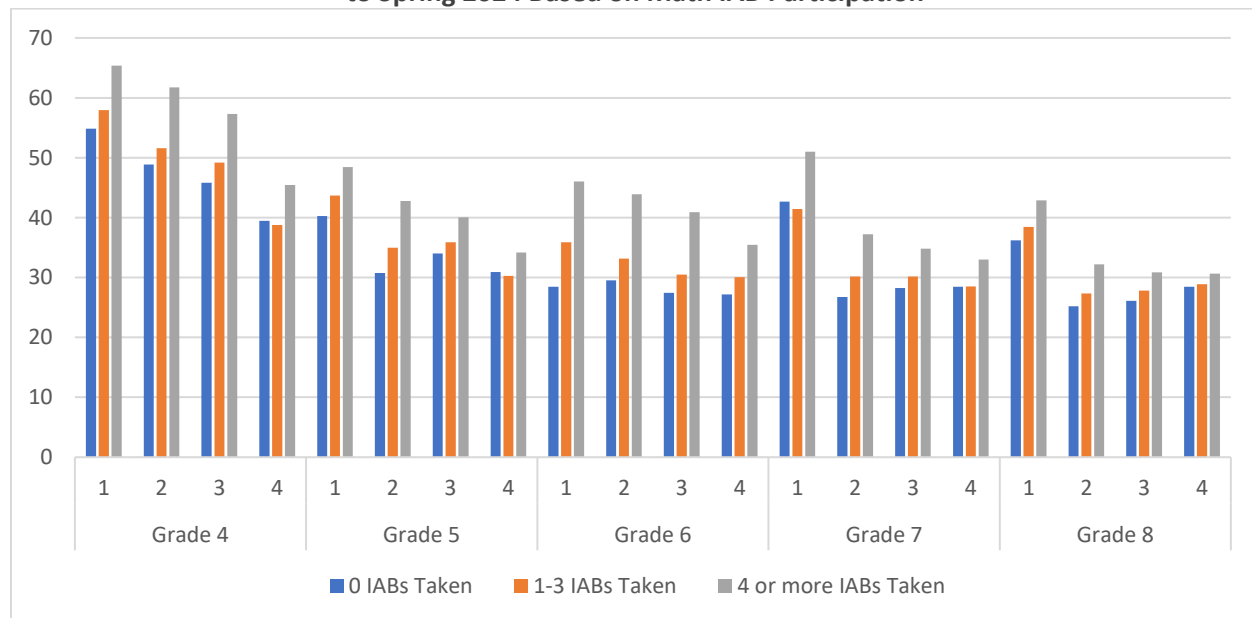


Table 6: Number/Percentage of Students Taking Math IABs and Mean Scale Score Gain on the Math Summative Assessment from Spring 2023 to Spring 2024

2024 Grade	2023 PL	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
			N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
4	1	9,652	1,923	19.9	55	5,926	61.4	58	1803	18.7	65
	2	7,357	1,114	15.1	49	4,597	62.5	52	1646	22.4	62
	3	9,002	1,209	13.4	46	5,530	61.4	49	2,263	25.1	57
	4	8,248	1,128	13.7	39	5,026	60.9	39	2,094	25.4	45
5	1	8,745	2,132	24.4	40	5,606	64.1	44	1007	11.5	48
	2	8,963	1,734	19.4	31	5,662	63.2	35	1,567	17.5	43
	3	8,667	1,547	17.9	34	5,275	60.9	36	1,845	21.3	40
	4	8,117	1,382	17.0	31	4,728	58.3	30	2007	24.7	34
6	1	11,596	3,947	34.0	28	6,578	56.7	36	1,071	9.2	46
	2	8,347	2,310	27.7	30	4,795	57.5	33	1242	14.9	44
	3	6,221	1,580	25.4	27	3,579	57.5	31	1062	17.1	41
	4	8,292	1,966	23.7	27	4,568	55.1	30	1758	21.2	35
7	1	11,862	4,405	37.1	43	6,543	55.2	41	914	7.7	51

2024 Grade	2023 PL	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
			N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
	2	8,946	2,716	30.4	27	5,293	59.2	30	937	10.5	37
	3	6,512	1,905	29.3	28	3,766	57.8	30	841	12.9	35
	4	7,392	2,246	30.4	28	3,907	52.9	29	1239	16.8	33
8	1	12,612	4,956	39.3	36	6,801	53.9	38	855	6.8	43
	2	8,187	2,540	31.0	25	4,801	58.6	27	846	10.3	32
	3	6,898	2,138	31.0	26	3,952	57.3	28	808	11.7	31
	4	7,312	2,763	37.8	28	3,672	50.2	29	877	12.0	31

Figure 3: Mean Scale Score Gain on Math Summative Assessment from Spring 2023 to Spring 2024 Based on Math IAB Participation



- Generally, students at lower performance levels tended to take 4 or more IABs at a lower rate than their higher achieving peers.
- Among students in every grade and at almost every performance level, those who took 4 or more IABs generally showed substantially greater mean scale score gains on the summative from spring 2023 to spring 2024 than those who took fewer or no IABs. This remains true even when the data are further disaggregated by eligibility for FRPM (Table 7 and 8 and Figures 4 and 5 in the Appendix).

- As expected, mean gains were greater in the lower grades and for those at lower performance levels.

Conclusion

This report confirms the overall findings from the 2020 study. It affirms that in both ELA and math, in all grades, and regardless of the performance level or socioeconomic status of the student, those who take four or more different IABs during the year generally demonstrate greater mean scale score gains than those taking fewer or no IABs. While these are descriptive results and as such do not support a causal inference, they do provide ongoing evidence for further inquiry into the thoughtful integration of Smarter Balanced IABs to support classroom teachers to implement high-quality instruction.

References

Connecticut State Department of Education. (2022). *Sensible Assessment Practices*. Retrieved from <https://portal.ct.gov/-/media/SDE/COVID-19/SensibleAssessmentPractices.pdf>

Marion, S., Thompson, J., Evans, C., Martineau, J, and Dadey, N. (2019). *A Tricky Balance: The challenges and opportunities of balanced Systems of Assessment*. Paper Presented at the Annual Meeting of the National Council on Measurement in Education. Retrieved from https://www.nciea.org/wp-content/uploads/2021/11/A-Tricky-Balance_031319.pdf

Smarter Balanced (2019). *Interim Assessments Overview*. Retrieved on October 27, 2019, from <https://portal.smarterbalanced.org/library/en/interim-assessments-overview.pdf>

Appendix

Table 7: Number/Percentage of Students Taking ELA IABs and Mean Scale Score Gain on ELA Summative Assessment from Spring 2023 to Spring 2024

2024 Grade	2023 PL	Meal Eligibility Status 2023	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
				N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
4	1	FRPM	7285	2112	29.0	57	3646	50.1	58	1527	21.0	69
		Not FRPM	3515	792	22.5	61	1845	52.5	70	878	25.0	78
	2	FRPM	3740	842	22.5	49	1898	50.8	49	1000	26.7	57
		Not FRPM	4048	678	16.8	61	2172	53.7	63	1198	29.6	68
	3	FRPM	2350	554	23.6	46	1121	47.7	46	675	28.7	53
		Not FRPM	4648	614	13.2	55	2567	55.2	56	1467	31.6	62
	4	FRPM	1571	311	19.8	34	730	46.5	37	530	33.7	40
		Not FRPM	7208	835	11.6	43	4068	56.4	42	2305	32.0	47
5	1	FRPM	7678	2357	30.7	46	3907	50.9	54	1414	18.4	62
		Not FRPM	3681	1020	27.7	56	1901	51.6	62	760	20.7	71
	2	FRPM	3097	765	24.7	35	1583	51.1	43	749	24.2	52
		Not FRPM	3131	579	18.5	51	1699	54.3	57	853	27.2	60
	3	FRPM	2689	666	24.8	36	1310	48.7	40	713	26.5	42
		Not FRPM	4695	798	17.0	42	2640	56.2	49	1257	26.8	55
	4	FRPM	1864	397	21.3	28	927	49.7	33	540	29.0	36
		Not FRPM	7751	1072	13.8	36	4406	56.8	36	2273	29.3	39
6	1	FRPM	7068	2959	41.9	50	2964	41.9	51	1145	16.2	53
		Not FRPM	3290	1184	36.0	52	1451	44.1	58	655	19.9	63
	2	FRPM	3283	1124	34.2	34	1448	44.1	36	711	21.7	36
		Not FRPM	3108	843	27.1	41	1466	47.2	42	799	25.7	48
	3	FRPM	3225	1045	32.4	27	1459	45.2	26	721	22.4	29
		Not FRPM	5623	1332	23.7	31	2738	48.7	32	1553	27.6	33
	4	FRPM	1672	500	29.9	15	740	44.3	15	432	25.8	17
		Not FRPM	7373	1692	23.0	18	3577	48.5	20	2104	28.5	21
7	1	FRPM	6418	2950	46.0	41	2541	39.6	42	927	14.4	47
		Not FRPM	3093	1314	42.5	46	1313	42.5	49	466	15.1	52
	2	FRPM	4314	1708	39.6	36	1876	43.5	35	730	16.9	40
		Not FRPM	4266	1472	34.5	40	1862	43.7	45	932	21.9	48

2024 Grade	2023 PL	Meal Eligibility Status 2023	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
				N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
	3	FRPM	3338	1255	37.6	30	1454	43.6	29	629	18.8	35
		Not FRPM	7034	2162	30.7	33	3113	44.3	36	1759	25.0	36
	4	FRPM	1080	403	37.3	18	450	41.7	20	227	21.0	23
		Not FRPM	5438	1674	30.8	23	2311	42.5	22	1453	26.7	25
8	1	FRPM	6487	2934	45.2	48	2726	42.0	48	827	12.8	52
		Not FRPM	3393	1424	42.0	51	1386	40.9	52	583	17.2	61
	2	FRPM	4004	1620	40.5	30	1709	42.7	31	675	16.9	32
		Not FRPM	3996	1270	31.8	32	1833	45.9	36	893	22.4	44
	3	FRPM	3645	1373	37.7	21	1558	42.7	23	714	19.6	26
		Not FRPM	7763	2233	28.8	27	3499	45.1	29	2031	26.2	31
	4	FRPM	1053	363	34.5	14	460	43.7	18	230	21.8	20
		Not FRPM	5041	1303	25.9	19	2443	48.5	20	1295	25.7	21

Figure 4: Mean Scale Score Gain on ELA Summative Assessment from Spring 2023 to Spring 2024 Based on ELA IAB Participation (Performance Levels 1 and 2 Only)

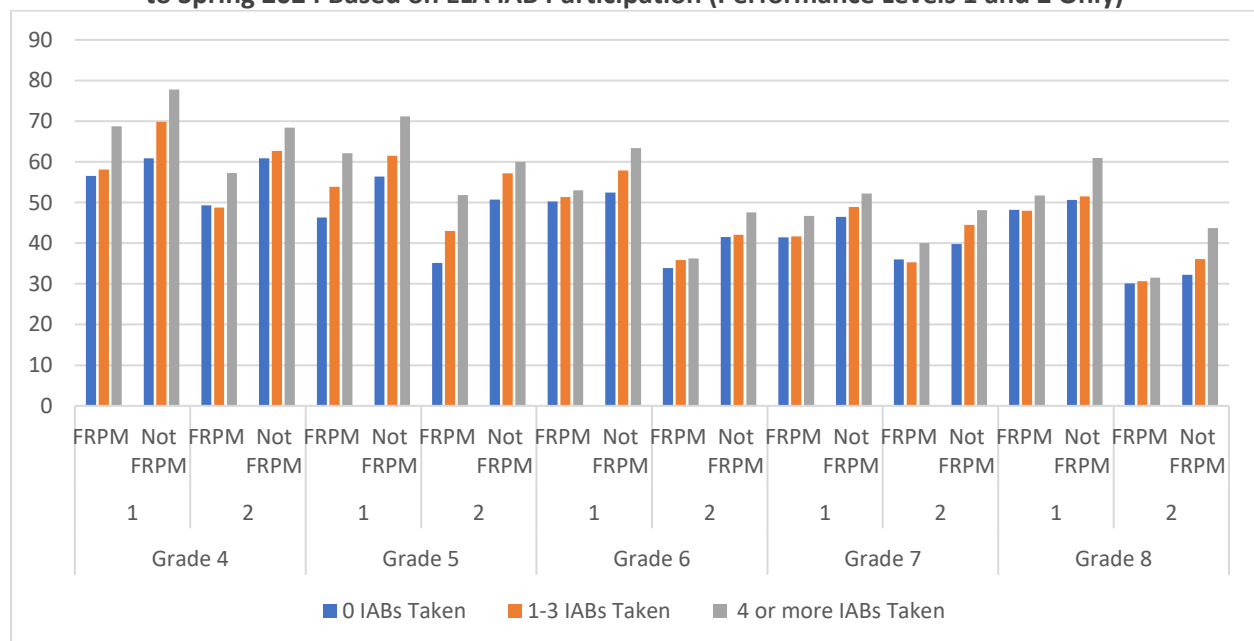


Table 8: Number/Percentage of Students Taking Math IABs and Mean Scale Score Gain on Math Summative Assessment from Spring 2023 to Spring 2024

2024 Grade	2023 PL	Meal Eligibility Status 2023	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
				N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
4	1	FRPM	6765	1350	20.0	53	4195	62.0	55	1220	18.0	63
		Not FRPM	2887	573	19.9	60	1731	60.0	65	583	20.2	70
	2	FRPM	3687	627	17.0	43	2295	62.3	47	765	20.8	60
		Not FRPM	3670	487	13.3	56	2302	62.7	57	881	24.0	64
	3	FRPM	3064	471	15.4	41	1860	60.7	44	733	23.9	52
		Not FRPM	5938	738	12.4	49	3670	61.8	52	1530	25.8	60
	4	FRPM	1347	213	15.8	33	807	59.9	34	327	24.3	41
		Not FRPM	6901	915	13.3	41	4219	61.1	40	1767	25.6	46
5	1	FRPM	6287	1502	23.9	39	4127	65.6	43	658	10.5	47
		Not FRPM	2458	630	25.6	44	1479	60.2	47	349	14.2	52
	2	FRPM	4736	934	19.7	26	3091	65.3	32	711	15.0	39
		Not FRPM	4227	800	18.9	36	2571	60.8	38	856	20.3	46
	3	FRPM	2859	534	18.7	27	1809	63.3	33	516	18.1	34
		Not FRPM	5808	1013	17.4	38	3466	59.7	38	1329	22.9	42
	4	FRPM	1391	270	19.4	24	840	60.4	27	281	20.2	33
		Not FRPM	6726	1112	16.5	33	3888	57.8	31	1726	25.7	34
6	1	FRPM	7988	2797	35.0	26	4497	56.3	33	694	8.7	41
		Not FRPM	3608	1150	31.9	35	2081	57.7	42	377	10.5	56
	2	FRPM	3861	1156	29.9	26	2230	57.8	30	475	12.3	36
		Not FRPM	4486	1154	25.7	34	2565	57.2	36	767	17.1	49
	3	FRPM	1951	586	30.0	22	1112	57.0	25	253	13.0	34
		Not FRPM	4270	994	23.3	31	2467	57.8	33	809	19.0	43
	4	FRPM	1337	354	26.5	20	768	57.4	23	215	16.1	27
		Not FRPM	6955	1612	23.2	29	3800	54.6	31	1543	22.2	37
7	1	FRPM	7958	2902	36.5	41	4449	55.9	40	607	7.6	50
		Not FRPM	3904	1503	38.5	45	2094	53.6	44	307	7.9	53
	2	FRPM	4003	1272	31.8	23	2369	59.2	26	362	9.0	36
		Not FRPM	4943	1444	29.2	30	2924	59.2	34	575	11.6	38
	3	FRPM	1905	574	30.1	23	1130	59.3	26	201	10.6	35
		Not FRPM	4607	1331	28.9	30	2636	57.2	32	640	13.9	35
	4	FRPM	1100	327	29.7	24	628	57.1	26	145	13.2	34
		Not FRPM										

2024 Grade	2023 PL	Meal Eligibility Status 2023	Total Matched Students	0 IABs Taken			1-3 IABs Taken			4 or more IABs Taken		
				N	%	Mean Gain	N	%	Mean Gain	N	%	Mean Gain
		Not FRPM	6292	1919	30.5	29	3279	52.1	29	1094	17.4	33
8	1	FRPM	8371	3365	40.2	36	4464	53.3	36	542	6.5	40
		Not FRPM	4241	1591	37.5	37	2337	55.1	43	313	7.4	47
	2	FRPM	3615	1200	33.2	22	2104	58.2	23	311	8.6	32
		Not FRPM	4572	1340	29.3	28	2697	59.0	31	535	11.7	32
	3	FRPM	1881	644	34.2	21	1059	56.3	23	178	9.5	31
		Not FRPM	5017	1494	29.8	28	2893	57.7	30	630	12.6	31
	4	FRPM	1077	353	32.8	21	593	55.1	26	131	12.2	30
		Not FRPM	6235	2410	38.7	29	3079	49.4	30	746	12.0	31

Figure 5: Mean Scale Score Gain on Math Summative Assessment from Spring 2023 to Spring 2024 Based on Math IAB Participation (Performance Levels 1 and 2 Only)

