

Correlation and Forecast Accuracy Analyses between Imagine Galileo K–12 Assessments and the Missouri Assessment Program (MAP) Tests

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A primary function of Imagine Galileo assessments is to align with and forecast student performance on state tests. In the state of Missouri, the target state tests are the Missouri Assessment Program (MAP) tests. In order to evaluate the accuracy of the alignment between the scores on Imagine Galileo assessments and the scores on a target state test, the Imagine Learning Assessment team calculates the correlation coefficients between student scores on both sets of assessments as well as the accuracy with which the Imagine Galileo assessments forecast student performance on the target state test. In recent years, two school districts in the state of Missouri provided the student-level state test score data files that are required to conduct the correlation and forecast accuracy analyses. District A shared the spring, 2019 student MAP data, so that correlation and forecast analyses could be conducted for the 2018–19 Imagine Galileo assessments. District B provided student level MAP data from both 2018 and 2019, enabling the Imagine Learning Assessment team to evaluate the alignment of the Imagine Galileo assessments from both 2017–18 and 2018–19. The current report summarizes the results from all these analyses.

Table 1 lists the combined student count from the analyses for the two districts.

A correlation analysis indicates the degree to which student scores on the Imagine Galileo assessment covary with the scores obtained by those same students on the MAP assessment. Correlation coefficients of 0.60 or higher indicate a strong alignment between the two tests. Pearson correlation coefficients were calculated separately for each Imagine Galileo assessment administered by the two participating districts. Tables 2 through 5 report the Pearson correlation coefficients that were obtained for each of the assessments. As is typical, the correlations indicate a strong alignment between the Imagine Galileo and MAP assessments.

Table 1. Student count totals for the assessments included in the analyses

Subject	Grade	Student Count
ELA	3	1,222
	4	1,143
	5	1,161
	6	1,133
	7	1,106
	8	1,097
Math	3	1,185
	4	1,120
	5	1,089
	6	1,156
	7	1,090
	8	1,170
Total		13,672

Table 2. Correlation coefficients between Imagine Galileo and MAP assessments: District A, ELA

District	Subject	Grade Level	Test Title	Correlation Coefficient
MO District A	ELA	3	2018-19 ATI MO ELA 03 Gr. Pretest	0.70
MO District A	ELA	3	2018-19ATI MO ELA03 Gr. CBAS #1	0.78
MO District A	ELA	3	2018-19ATI MO ELA03 Gr. CBAS #2	0.79
MO District A	ELA	3	2018-19ATI MO ELA03 Gr. Posttest	0.60
MO District A	ELA	4	2018-19 ATI MO ELA 04 Gr. Pretest	0.82
MO District A	ELA	4	2018-19 ATI MO ELA 04 Gr. CBAS #1	0.86
MO District A	ELA	4	2018-19 ATI MO ELA 04 Gr. CBAS #2	0.84
MO District A	ELA	4	2018-19ATI MO ELA 04 Gr. Posttest	0.77
MO District A	ELA	5	2018-19 A TI MO ELA 05 Gr. Pretest	0.74
MO District A	ELA	5	2018-19 ATI MO ELA 05 Gr. CBAS #1	0.75
MO District A	ELA	5	2018-19ATI MO ELA 05 Gr. CBAS #2	0.71
MO District A	ELA	5	2018-19ATI MO ELA 05 Gr. Posttest	0.76
MO District A	ELA	6	2018-19 ATI MO ELA 06 Gr. _Pretest	0.75
MO District A	ELA	6	2018-19 ATI MO ELA 06 Gr. CBAS #1	0.78
MO District A	ELA	6	2018-19 ATI MO ELA 06 Gr.CBAS #2	0.73
MO District A	ELA	7	2018-19 ATI MO ELA 07 Gr. _Pretest	0.74
MO District A	ELA	7	2018-19 ATI MO ELA 07 Gr. CBAS #1	0.75
MO District A	ELA	7	2018-19 ATI MO ELA 07 Gr. CBAS #2	0.71
MO District A	ELA	8	2018-19 ATI MO ELA 08 Gr. Pretest	0.76
MO District A	ELA	8	2018-19 ATI MO ELA 08 Gr. CBAS #1	0.80
MO District A	ELA	8	2018-19 ATI MO ELA 08 Gr. CBAS #2	0.79

Table 3. Correlation coefficients between Imagine Galileo and MAP assessments: District A, Math

District	Subject	Grade Level	Test Title	Correlation Coefficient
MO District A	MATH	3	2018-19 ATI MO Math 03 Gr. Pretest	0.67
MO District A	MATH	3	2018-19 ATI MO Math 03 Gr. CBAS #1	0.77
MO District A	MATH	3	2018-19 ATI MO Math 03 Gr. CBAS #2	0.83
MO District A	MATH	3	2018-19 A TI MO Math 03 Gr. Posttest	0.71
MO District A	MATH	4	2018-19 A TI MO Math 04 Gr. Pretest	0.72
MO District A	MATH	4	2018-19 ATI MO Math 04 Gr. CBAS #1	.078
MO District A	MATH	4	2018-19 ATI MO Math 04 Gr. CBAS #2	0.80
MO District A	MATH	4	2018-19 ATI MO Math 04 Gr. Posttest	0.63
MO District A	MATH	5	2018-19 ATI MO Math 05 Gr. Pretest	0.58
MO District A	MATH	5	2018-19 A TI MO Math 05 Gr. CBAS #1	0.69
MO District A	MATH	5	2018-19 ATI MO Math 05 Gr. C8AS #2	0.74
MO District A	MATH	5	2018-19 ATI MO Math 05 Gr. Posttest	0.67
MO District A	MATH	6	2018-19 ATI MO Math 06 Gr. Pretest	0.56
MO District A	MATH	6	2018-19 ATI MO Math 06 Gr. CBAS #1	0.75
MO District A	MATH	6	2018-19 ATI MO Math 06 Gr. CBAS #2	0.73
MO District A	MATH	7	2018-19 A TI MO Math 07 Gr. _Pretest	0.67
MO District A	MATH	7	2018-19 A TI MO Math 07 Gr. CBAS #1	0.76
MO District A	MATH	7	2018-19 ATI MO Math 07 Gr. CBAS #2	0.62
MO District A	MATH	8	2018-19 ATI MO Math 08 Gr. Pretest	0.75
MO District A	MATH	8	2018-19 ATI MO Math 08 Gr. CBAS #1	0.80
MO District A	MATH	8	2018-19 ATI MO Math 08 Gr. CBAS #2	0.88
MO District A	MATH	8	2018-19 ATI MO Math 08 Gr. Posttest	0.46

Table 4. Correlation coefficients between Imagine Galileo and MAP assessments: District A, ELA

District	Subject	Grade Level	Test Title	Correlation Coefficient
MO District B	ELA	3	2017-18 ATI MO ELA 03 Gr. BM #1	0.76
MO District B	ELA	3	2017-18ATI MO ELA03 Gr.CBAS BM#2	0.75
MO District B	ELA	3	2017-18 ATI MO ELA 03 Gr. CBAS BM #3	0.77
MO District B	ELA	3	2017-18 A TI MO ELA 03 Gr. Pretest	0.71
MO District B	ELA	3	2018-19 ATI MO ELA 03 Gr. Pretest	0.74
MO District B	ELA	3	2018-19ATI MO ELA03 Gr.CBAS #1	0.74
MO District B	ELA	3	2018-19 ATI MO ELA 03 Gr. CBAS #2	0.78
MO District B	ELA	3	2018-19 ATI MO ELA 03 Gr. Posttest	0.78
MO District B	ELA	4	2017-18ATI MO ELA 04 Gr. BM #1	0.73
MO District B	ELA	4	2017-18 ATI MO ELA 04 Gr. CBAS BM #2	0.73
MO District B	ELA	4	2017-18 ATI MO ELA 04 Gr. CBAS BM #3	0.77
MO District B	ELA	4	2017-18 ATI MO ELA 04 Gr. Pretest	0.68
MO District B	ELA	4	2018-19 ATI MO ELA 04 Gr. Pretest	0.76
MO District B	ELA	4	2018-19 ATI MO ELA 04 Gr. CBAS #1	0.83
MO District B	ELA	4	2018-19 ATI MO ELA 04 Gr. CBAS #2	0.76
MO District B	ELA	4	2018-19 A TI MO ELA 04 Gr. Posttest	0.75
MO District B	ELA	5	2017-18ATI MO ELA 05 Gr. BM#1	0.8
MO District B	ELA	5	2017-18 ATI MO ELA 05 Gr. CBAS BM #2	0.84
MO District B	ELA	5	2017-18 ATI MO ELA 05 Gr. CBAS BM #3	0.85
MO District B	ELA	5	2017-18 ATI MO ELA 05 Gr. Pretest	0.76
MO District B	ELA	5	2018-19 ATI MO ELA 05 Gr. Pretest	0.81
MO District B	ELA	5	2018-19 ATI MO ELA 05 Gr. CBAS #1	0.75
MO District B	ELA	5	2018-19ATI MO ELA05 Gr. CBAS #2	0.78
MO District B	ELA	5	2018-19 ATI MO ELA 05 Gr. Posttest	0.82
MO District B	ELA	6	2017-18 ATI MO ELA 06 Gr. _Pretest	0.78
MO District B	ELA	6	2017-18 ATI MO ELA 06 Gr. BM #1	0.82
MO District B	ELA	6	2017-18 ATI MO ELA 06 Gr. CBAS BM #2	0.81
MO District B	ELA	6	2017-18 ATI MO ELA 06 Gr. CBAS BM #3	0.84
MO District B	ELA	6	2018-19 ATI MO ELA 06 Gr. Pretest	0.81
MO District B	ELA	6	2018-19 ATI MO ELA 06 Gr. CBAS #1	0.78
MO District B	ELA	6	2078-79 ATI MO ELA 06 Gr. CBAS #2	0.8
MO District B	ELA	6	2018-19 ATI MO ELA 06 Gr. Posttest	0.8
MO District B	ELA	7	2017-18 ATI MO ELA 07 Gr. _Pretest	0.79
MO District B	ELA	7	2017-18 ATI MO ELA 07 Gr. BM #7	0.75
MO District B	ELA	7	2017-18ATI MO ELA 07 Gr.CBAS BM #2	0.87
MO District B	ELA	7	2017-18 ATI MO ELA 07 Gr. CBAS BM #3	0.77
MO District B	ELA	7	2018-19 ATI MO ELA 07 Gr. Pretest	0.8
MO District B	ELA	7	2018-19 ATI MO ELA 07 Gr. CBAS #1	0.79
MO District B	ELA	7	2018-19 ATI MO ELA 07 Gr. CBAS #2	0.76
MO District B	ELA	7	2018-19 ATI MO ELA 07 Gr. Posttest	0.75
MO District B	ELA	8	2017-18 ATI MO ELA 08 Gr. BM #1	0.76
MO District B	ELA	8	2017-18 ATI MO ELA 08 Gr. CBAS BM #2	0.75
MO District B	ELA	8	2017-18 ATI MO ELA 08 Gr. CBAS BM #3	0.81
MO District B	ELA	8	2017-18 ATI MO ELA 08 Gr. Pretest	0.77
MO District B	ELA	8	2018-19 ATI MO ELA 08 Gr. Pretest	0.78
MO District B	ELA	8	2018-79 ATI MO ELA 08 Gr. CBAS #1	0.82
MO District B	ELA	8	2018-19 ATI MO ELA 08 Gr. CBAS #2	0.78
MO District B	ELA	8	2018-19 ATI MO ELA 08 Gr. Posttest	0.80

Table 5. Correlation coefficients between Imagine Galileo and MAP assessments: District B, Math

District	Subject	Grade Level	Test Title	Correlation Coefficient
MO District B	Math	3	2017-18 ATI MO Math 03 Gr. _Pretest	0.73
MO District B	Math	3	2017-78 ATI MO Math 03 Gr. BM #1	0.76
MO District B	Math	3	2017-18 ATI MO Math 03 Gr. CBAS BM #2 v.2	0.78
MO District B	Math	3	2017-18 ATI MO Math 03 Gr. CBAS BM #3	0.82
MO District B	Math	3	2018-19 ATI MO Math 03 Gr. Pretest	0.7
MO District B	Math	3	2018-19 ATI MO Math 03 Gr. CBAS #1	0.76
MO District B	Math	3	2018-19 ATI MO Math 03 Gr. CBAS #2	0.76
MO District B	Math	3	2018-19 ATI MO Math 03 Gr. Posttest	0.79
MO District B	Math	4	2017-18 ATI MO Math 04 Gr. _Pretest	0.69
MO District B	Math	4	2017-18 ATI MO Math 04 Gr. BM #1	0.72
MO District B	Math	4	2017-18 ATI MO Math 04 Gr. CBAS BM #2	0.76
MO District B	Math	4	2017-18 ATI MO Math 04 Gr. CBAS BM #3	0.78
MO District B	Math	4	2018-19 ATI MO Math 04 Gr. Pretest	0.77
MO District B	Math	4	2018-19 ATI MO Math 04 Gr. CBAS #1	0.79
MO District B	Math	4	2018-19 ATI MO Math 04 Gr. CBAS #2	0.79
MO District B	Math	4	2018-19 ATI MO Math 04 Gr. Posttest	0.8
MO District B	Math	5	2017-18 ATI MO Math 05 Gr. _Pretest	0.68
MO District B	Math	5	2017-18 ATI MO Math 05 Gr. BM #1	0.77
MO District B	Math	5	2017-18 ATI MO Math 05 Gr. CBAS BM #2	0.82
MO District B	Math	5	2017-18 ATI MO Math 05 Gr. CBAS BM #3	0.83
MO District B	Math	5	2018-19 ATI MO Math 05 Gr. Pretest	0.67
MO District B	Math	5	2018-19 ATI MO Math 05 Gr. CBAS #1	0.75
MO District B	Math	5	2018-19 ATI MO Math 05 Gr. CBAS #2	0.79
MO District B	Math	5	2018-19 ATI MO Math 05 Gr. Posttest	0.81
MO District B	Math	6	2017-18 ATI MO Math 06 Gr. _Pretest	0.7
MO District B	Math	6	2017-18 ATI MO Math 06 Gr. BM #1	0.79
MO District B	Math	6	2017-18 ATI MO Math 06 Gr. CBAS BM #2	0.83
MO District B	Math	6	2017-18 ATI MO Math 06 Gr. CBAS BM #3	0.82
MO District B	Math	6	2018-19 ATI MO Math 06 Gr. Pretest	0.72
MO District B	Math	6	2018-19 ATI MO Math 06 Gr. CBAS #1	0.81
MO District B	Math	6	2018-19 ATI MO Math 06 Gr. CBAS #2	0.83
MO District B	Math	6	2018-19 ATI MO Math 06 Gr. Posttest	0.84
MO District B	Math	7	2017-18 ATI MO Math 07 Gr. _Pretest	0.75
MO District B	Math	7	2017-18 ATI MO Math 07 Gr. BM #1	0.81
MO District B	Math	7	2017-18 ATI MO Math 07 Gr. CBAS BM #2	0.82
MO District B	Math	7	2017-18 ATI MO Math 07 Gr. CBAS BM #3	0.8
MO District B	Math	7	2018-19 ATI MO Math 07 Gr. Pretest	0.75
MO District B	Math	7	2018-19 ATI MO Math 07 Gr. CBAS #1	0.82
MO District B	Math	7	2018-19 ATI MO Math 07 Gr. CBAS #2	0.8
MO District B	Math	7	2018-19 ATI MO Math 07 Gr. Posttest	0.84
MO District B	Math	8	2017-18 ATI MO Math 08 Gr. _Pretest	0.49
MO District B	Math	8	2017-18 ATI MO Math 08 Gr. BM #1	0.83
MO District B	Math	8	2017-18 ATI MO Math 08 Gr. CBAS BM #2	0.79
MO District B	Math	8	2017-18ATI MO Math 08Gr.CBAS B M # 3	0.85
MO District B	Math	8	2017-18 ATI MO Math 08 Gr. Posttest	0.83
MO District B	Math	8	2018-19 ATI MO Math 08 Gr. Pretest	0.72
MO District B	Math	8	2018-19 ATI MO Math 08 Gr. CBAS #1	0.78
MO District B	Math	8	2018-19 ATI MO Math 08 Gr. CBAS #2	0.77
MO District B	Math	8	2018-19 ATI MO Math 08 Gr. Posttest	0.81

Having demonstrated that the student scores on the Imagine Galileo assessments correspond well with student scores on the MAP assessment, the Imagine Learning Assessment team evaluated the accuracy with which Imagine Galileo assessments and reports forecast student performance on the MAP assessment. The Imagine Galileo Risk Assessment report classifies students according to their likely risk of not being able to score at or above the Proficient level on the target MAP assessment. Students are classified into four risk levels: High Risk, Moderate Risk, Low Risk, and On Course. For the purposes of the forecast accuracy analysis, students who are classified as On Course or at Low Risk are expected to score at or above Proficient on the MAP assessment. Students classified as being at Moderate or High Risk are expected to score below the Proficient cut score on the MAP assessment.

Figures 1 and 2 present the average forecast accuracy results for each grade level and subject in ELA and Math, respectively. As expected, forecast accuracy was highest for the High Risk and On Course groups, whose performance was consistently below or above the Proficient cut score on the Imagine Galileo assessments. In ELA, 88.8% of students classified as On Course scored at or above Proficient on the MAP assessment, and 91.9% of students classified as High Risk scored below Proficient on the MAP assessment. For the Math assessments, 89.2% of On Course students scored at or above Proficient on the MAP assessment, and 92.4% of High Risk students scored below Proficient on MAP. Accuracy for the Low and Moderate Risk groups was lower, as was also expected, because these groups are comprised of the so called “bubble” students who tend to waver between scoring above and below proficiency. Overall though, looking at all students in all the risk groups, forecast accuracy remained high. On average, the Imagine Galileo assessments accurately forecast the MAP performance for 84.3% of students in ELA, and 85.3% of students in math.

Figure 1. Percent of students whose performance on the MAP assessment as accurately predicted by the Imagine Galileo assessments in ELA Forecast accuracy of the Imagine Galileo Assessments. Percent of Students in Each Risk Group Who Performed as Predicted on the MAP Test.

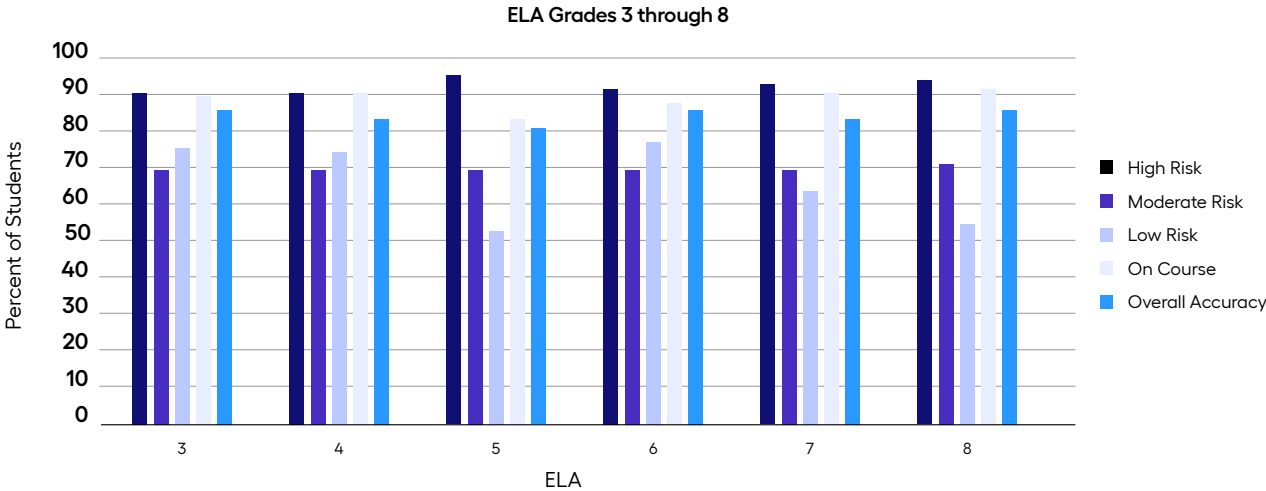
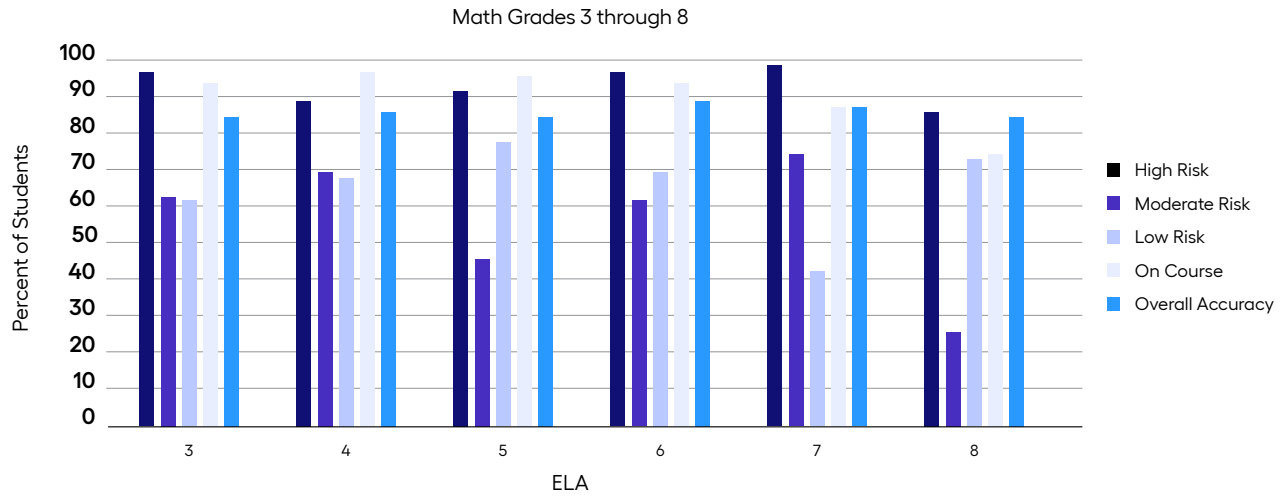


Figure 2. Percent of students whose performance on the MAP assessment was accurately predicted by the Imagine Galileo assessments in Math

Forecast accuracy of the Galileo Assessments. Percent of Students in Each Risk Group Who Performed as Predicted on the MAP Test.



Overall, it can be concluded that the Imagine Galileo assessments in ELA and Math align well with the MAP assessments and accurately forecast student performance on them.