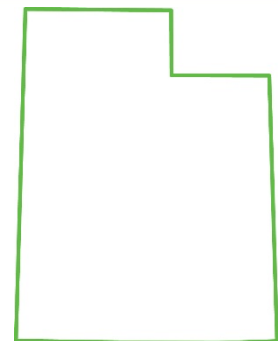


Pathway to Proficiency: Linking Star Reading® to the Utah Readiness Improvement Success Empowerment (RISE)



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Introduction

At Renaissance, we know that as an educator, chief among your responsibilities is making decisions about how to allocate limited resources to best serve diverse student needs. A good assessment system supports your efforts, by providing timely, relevant information to help address key questions about which students are on track to meet important standards and who may need additional assistance.

Assessments that identify early any students at risk of missing academic standards are especially useful, as they inform instructional decisions to improve student performance and reduce gaps in achievement. Assessments that do this while taking little time away from instruction are particularly valuable. *Interim assessments*, one of three broad categories of educational assessment,¹ indicate which students are on track to meet later expectations (Perie, Marion, Gong, & Wurtzel, 2007).

This linking study applied results from one interim assessment, Renaissance Star Reading®, to help you predict whether individual students are on track or need more assistance to succeed on the year-end summative SAGE (RISE)² test in English Language Arts (ELA) in grades 3 through 8.³

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Main Findings

Results from the linking analysis revealed that Star Reading is an accurate predictor of the SAGE, meaning as an educator you can use Star scores to:

1. Identify early in the year students likely to miss reading yearly progress goals in time to make meaningful adjustments to instruction well before the year-end test.
2. Forecast the percent of students at each SAGE performance level to serve as an early warning system for building and district administrators and allow redirection of resources as needed.

Study

To determine if Star Reading can predict student achievement on the end-of-year SAGE tests in ELA, we began by linking the score scales for each assessment.

1 Formative assessments are short and frequent processes, embedded in instruction, that support learning and provide specific feedback on what students know and can do versus where gaps in knowledge exist. Summative assessments evaluate whether students have met a set of standards, and serve most commonly as year-end state-mandated tests. Interim assessments represent the middle ground, in terms of duration and frequency and can serve purposes including informing instruction, evaluating curriculum and student responsiveness to intervention, and forecasting performance on high-stakes summative year-end tests.

2 The original study was conducted when the test was called SAGE. It was renamed to RISE for the 2019–2020 school year. Although the name changed, the scale and cut scores remained consistent. Because the study was originally conducted with SAGE, we'll refer to SAGE throughout the remainder of this report.

3 Technical manual is available for Star Reading by request to research@renaissance.com.

School-Level Data collection

To find a sample of students who were assessed by both the SAGE and Star Reading, we began by gathering all Star Reading test records from 2013–2014 and 2014–2015 for Utah. Then, each school's Star Reading data were aggregated by grade. The next step was to match Star Reading data with the SAGE data from the same school year by district and school name. To do this, performance level distribution data from the SAGE was obtained from the public data provided by the Utah State Office of Education. The file included the number of students tested in each grade and the percentage of students who were: *Level 1: Below Proficient, Level 2: Approaching Proficient, Level 3: Proficient, and Level 4: Highly Proficient*.

Sample characteristics

Once we determined how many students in each grade at a school were tested on the SAGE ELA and took a Star Reading assessment, we calculated the percentage of students assessed on both tests. In each grade at each school, if between 95% and 105% of the students who tested on the SAGE had taken a Star assessment, that grade was included in the sample. This method of sample selection ensured that our sample consisted of cases in which all or nearly all the enrolled students who took the SAGE also took a Star test within the specified window of time. If a total of approximately 1,000 or more students per grade met the sample criteria, that grade's sample was considered sufficiently large for analysis.

The reading sample included 12,528 Star Reading students from 49 schools. Table 1 displays by-grade test summaries for the reading sample. It also includes percentages of students in the *Level 1: Below Proficient, Level 2: Approaching Proficient, Level 3: Proficient, and Level 4: Highly Proficient* performance levels, both for the sample and statewide.

Table 1. Performance characteristics of reading sample

Star Reading® sample performance										
Grade	Star Reading® students	SAGE ELA students	Level 1: Below Proficient		Level 2: Approaching Proficient		Level 3: Proficient		Level 4: Highly Proficient	
			Sample	State	Sample	State	Sample	State	Sample	State
3	1,692	1,647	23%	32%	22%	23%	38%	34%	17%	11%
4	2,331	2,262	21%	31%	25%	27%	33%	28%	21%	14%
5	1,536	1,506	23%	32%	26%	25%	31%	27%	20%	17%
6	3,713	3,619	34%	36%	21%	20%	28%	28%	17%	16%
7	1,878	1,793	32%	35%	24%	22%	30%	28%	14%	15%
8	1,378	1,357	31%	34%	23%	24%	27%	26%	19%	16%

Results

Scale linkage

Renaissance linked the Star test scale to the SAGE by applying equipercentile linking analysis (Kolen & Brennan, 2004). First, we aggregated the sample of schools to calculate the percentage of students categorized as *Level 1: Below Proficient, Level 2: Approaching Proficient, Level 3: Proficient, and Level 4: Highly Proficient* for each grade. Then we analyzed the distribution of Star scores to determine the scaled score

corresponding to the same percentile as specific SAGE level. For example, as shown in Table 1, our third-grade reading sample, 23% of students were at *Level 1: Below Proficient*, 22% at *Level 2: Approaching Proficient*, 38% at *Level 3: Proficient*, and 17% at *Level 4: Highly Proficient*. Therefore, the cutscores for achievement levels in the third grade are at the 23rd percentile for *Level 2: Approaching Proficient*, the 45th percentile for *Level 3: Proficient*, and the 83rd percentile for *Level 4: Highly Proficient*.

SAGE cut scores and corresponding Star score equivalents

SAGE results are reported in scaled scores that are split into four achievement levels: *Level 1: Below Proficient*, *Level 2: Approaching Proficient*, *Level 3: Proficient*, and *Level 4: Highly Proficient*. The main purpose in linking Star Reading to the SAGE was to identify Star scores at the time of the state test that are approximately equivalent to the cut-off scores that separate the SAGE levels. Table 2 displays these equivalent Star scores at the time of the state test for grades 3-8.⁴ The corresponding SAGE cut scores can be found in Appendix B.

Table 2. Star Reading[®] score equivalents for each SAGE achievement level

Star Reading [®] cut-score equivalents				
Grade	Level 1: Below Proficient	Level 2: Approaching Proficient	Level 3: Proficient	Level 4: Highly Proficient
3	< 379	379	464	600
4	< 454	454	559	713
5	< 533	533	645	861
6	< 651	651	790	996
7	< 706	706	873	1139
8	< 789	789	974	1208

⁴ The Star Reading cut-score equivalents presented in Table 2 apply only to the time of the state test. Some Renaissance reports adjust the Star Reading cut-score equivalents based on date.

Appendix A: About Star Reading®

The computer-adaptive Star Reading assessments serve multiple purposes including screening, progress monitoring, instructional planning, forecasting proficiency, standards mastery, and measuring growth. These highly reliable, valid, and efficient standards-based measures of student performance in reading provide valuable information regarding the acquisition of skills along a continuum of learning expectations. The assessments can be completed in about 20 minutes, and we recommend administering them two to five times a year for most purposes and more frequently when used for progress monitoring.

RENAISSANCE
Star Reading®

Star Reading is highly rated for academic screening and academic progress monitoring by the National Center on Intensive Intervention.

National Center on
INTENSIVE INTERVENTION

at American Institutes for Research ■

Appendix B: Utah SAGE achievement levels

Table B1. SAGE achievement level scores

SAGE achievement level score ranges: ELA				
Grade	Level 1: Below Proficient	Level 2: Approaching Proficient	Level 3: Proficient	Level 4: Highly Proficient
3	< 291	291	334	406
4	< 323	323	378	442
5	< 361	361	410	465
6	< 394	394	434	493
7	< 404	404	450	514
8	< 416	416	471	533

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