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**UNDERSTANDING EDUCATION  
ANALYTICS' LINKING STUDY BETWEEN  
SC READY AND I-READY ASSESSMENT,  
GRADES 3-8**

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# OVERVIEW

In the spring of 2023, the South Carolina Education Oversight Committee (SC EOC), in collaboration with the South Carolina Department of Education (SCDE), partnered with Education Analytics (EA) to complete a linking study between the South Carolina College- and Career-Ready Assessment (SC READY) in Mathematics and English Language Arts (ELA) and Curriculum Associates' i-Ready Growth assessment in Mathematics and Reading, respectively. Linking studies are used to statistically connect state summative test scores and interim test scores within the same grade level to facilitate comparisons of proficiency status on the two tests. Such linking studies help to answer the question, *what would my students' proficiency status on the spring state test likely be based on how they performed on the i-Ready assessment?*

The SC EOC enlisted EA to provide updated linked results based on the most current assessment data available (Spring 2023) and validate the results provided by interim assessment vendors, offering an independent evaluation of the alignment between interim assessments and state-level assessments. In cases where an interim vendor's studies are more recent than those presented here or utilize the same assessment year as our own results, **we recommend prioritizing the use of the vendor's results.** This approach ensures that educators and policymakers have access to the most up-to-date and aligned data and resources for making informed decisions regarding student learning and achievement.

In the following sections, we will provide a general overview of the linking study results and guidance on their interpretation, including limitations and cautions associated with linking studies. By providing an overview of EA's linking study results, methods, and considerations, this document aims to facilitate informed decision-making and promote transparency in assessment practices.

## LINKING STUDIES

### *Data & Methods*

Data from students who took both the SC READY and Curriculum Associate's i-Ready Mathematics and ELA/Reading assessments in Spring 2023 were included in the linking study. Furthermore, only matched students who took the i-Ready assessments within 30 days of SC READY<sup>1</sup> in Spring 2023 were included. This ensures more comparability in students' exposure to the curriculum when they were tested.

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<sup>1</sup> The SC READY data do not include the actual test administration dates, so this is an approximation based on [SCDE's 2022–23 Assessment Schedule](#).

Linking studies establish the relationship between the two assessments by identifying corresponding percentile ranks across the test scores. Through this process we obtain scores on the spring i-Ready assessment that correspond to the three SC READY achievement level cut scores (i.e., cut score between Does Not Meet Expectations and Approaches Expectations, cut score between Approaches Expectations and Meets Expectations, and cut score between Meets Expectations and Exceeds Expectations) for mathematics and ELA at grades 3-8.

## *Results*

Tables 1 and 2 present the linking results between SC READY and i-Ready spring tests for mathematics and ELA, respectively. The top panel shows the ranges of SC READY scale scores at each proficiency level and grade level in 2023. The bottom panel shows the corresponding i-Ready scores.

Table 1. SC READY and i-Ready Cut Score Equivalents (Spring): Mathematics

| Grade | SC READY                      |                         |                    |                      |
|-------|-------------------------------|-------------------------|--------------------|----------------------|
|       | Does Not Meet Expectations    | Approaches Expectations | Meets Expectations | Exceeds Expectations |
| 3     | 100-359                       | 360-437                 | 438-542            | 543-825              |
| 4     | 100-400                       | 401-480                 | 481-562            | 563-850              |
| 5     | 100-447                       | 448-534                 | 535-621            | 622-875              |
| 6     | 100-452                       | 453-542                 | 543-626            | 627-900              |
| 7     | 100-487                       | 488-576                 | 577-648            | 649-925              |
| 8     | 100-526                       | 527-614                 | 615-682            | 683-950              |
|       | Curriculum Associates i-Ready |                         |                    |                      |
|       | Does Not Meet Expectations    | Approaches Expectations | Meets Expectations | Exceeds Expectations |
| 3     | 100-426                       | 427-446                 | 447-468            | 469-800              |
| 4     | 100-447                       | 448-468                 | 469-485            | 486-800              |
| 5     | 100-453                       | 454-483                 | 484-505            | 506-800              |
| 6     | 100-464                       | 465-497                 | 498-519            | 520-800              |
| 7     | 100-474                       | 475-508                 | 509-527            | 528-800              |
| 8     | 100-486                       | 487-520                 | 521-540            | 541-800              |

Table 2. SC READY and i-Ready Cut Score Equivalents (Spring): ELA

| Grade | SC READY                      |                         |                    |                      |
|-------|-------------------------------|-------------------------|--------------------|----------------------|
|       | Does Not Meet Expectations    | Approaches Expectations | Meets Expectations | Exceeds Expectations |
| 3     | 100-358                       | 359-451                 | 452-539            | 540-825              |
| 4     | 100-418                       | 419-508                 | 509-591            | 592-850              |
| 5     | 100-448                       | 449-556                 | 557-652            | 653-875              |
| 6     | 100-454                       | 455-574                 | 576-666            | 667-900              |
| 7     | 100-511                       | 512-614                 | 615-703            | 704-925              |
| 8     | 100-536                       | 537-641                 | 642-736            | 737-950              |
|       | Curriculum Associates i-Ready |                         |                    |                      |
|       | Does Not Meet Expectations    | Approaches Expectations | Meets Expectations | Exceeds Expectations |
| 3     | 100-488                       | 489-525                 | 526-555            | 556-800              |
| 4     | 100-508                       | 509-547                 | 548-576            | 577-800              |
| 5     | 100-527                       | 528-569                 | 570-602            | 603-800              |
| 6     | 100-530                       | 531-580                 | 581-613            | 614-800              |
| 7     | 100-548                       | 549-595                 | 596-627            | 628-800              |
| 8     | 100-560                       | 561-604                 | 605-638            | 639-800              |

Linked i-Ready test scores were also extended from the spring to the fall and winter terms for the scores reaching the “Meets Expectations” performance level. These scores are summarized in Table 3. Note that these linked scores were calculated based on the mean i-Ready scores within each term among all South Carolina students who took the i-Ready test. Therefore, they reflect expected score equivalents **on average** among these students and **should not** be interpreted as accurate estimations for every individual student. The level of error around the fall and the winter scores will be larger than those around the spring scores as a result of extending these analyses to the fall and winter when SC READY is not administered.

Table 3. i-Ready Cut Score Equivalents

| Grade | Mathematics |        |        | ELA  |        |        |
|-------|-------------|--------|--------|------|--------|--------|
|       | Fall        | Winter | Spring | Fall | Winter | Spring |
| 3     | 420         | 435    | 447    | 493  | 513    | 526    |
| 4     | 447         | 458    | 469    | 522  | 537    | 548    |
| 5     | 465         | 475    | 484    | 549  | 561    | 570    |
| 6     | 483         | 491    | 498    | 567  | 575    | 581    |
| 7     | 496         | 503    | 509    | 583  | 590    | 596    |
| 8     | 507         | 514    | 521    | 590  | 598    | 605    |

### Interpretation & Limitations

Classification accuracy statistics are used to evaluate the degree to which the linked scores from the spring i-Ready assessment to the SC READY achievement level cut scores can be used to accurately classify students’ proficiency status. An evaluation of these diagnostics provides strong evidence of good classification accuracy for using the linked i-Ready scores to estimate students’ proficiency status on the SC READY assessments at grades 3-8.

While we do see this high level of classification accuracy, it is still important to consider the appropriate uses and limitations of these results. Figure 1 displays a scatterplot of scores for all grade 8 students who took the SC READY ELA and i-Ready Reading tests in Spring 2023. The black dashed line represents the best-fitting curve, which signifies how i-Ready Reading scores correspond to the SC READY ELA scores for students **on average**. For example, a score of 642 on the SC READY ELA test is the cut score for “Meets Expectations” at grade 3; this corresponds to a i-Ready Reading score of 605. Yet as with any statistical methods, there is a level of error associated with the results. The narrow black bands plotted around the dashed curve show the 95% confidence intervals around the average, which represent the range of values within which the linked scores could fall.

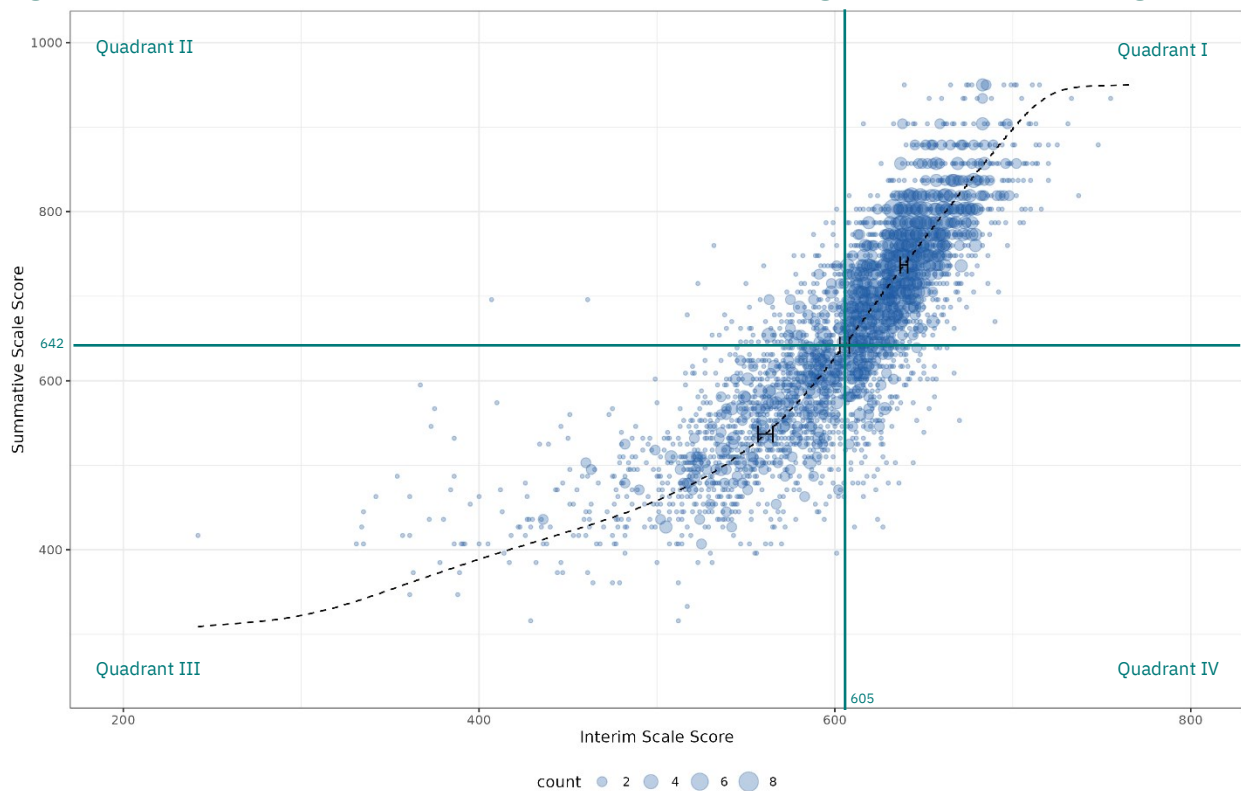
We see from this narrow band and the strong classification accuracy diagnostics that our statistical model is strong. However, it is important to keep in mind that the linked scores are based on a 50% likelihood estimation. This means that not all students who reach a

proficiency cut score on i-Ready will necessarily reach the associated score on SC READY. The results are more accurate for students on average than as associated with individual students.

Take the example of the SC READY 642 cut score for “Meets Expectations” in grade 8 and the corresponding i-Ready Reading score of 605. This represents how students performed on average. In reality, there is a wide range of i-Ready scores among students who reached a 642 on SC READY. Not all students who scored 605 and above on the i-Ready Reading test also scored 642 or higher on the SC READY ELA test in Spring 2023. Specifically, students in the bottom right box in Figure 1 (i.e., Quadrant IV) scored lower than 642. Similarly, students who met or exceeded expectations (i.e., scored 642 or above) on the SC READY ELA test had a wide range of scores on the i-Ready Reading test. Students in the top left box on the graph (i.e., students in Quadrant II) scored below a 605 on i-Ready Reading.

The interpretation of this estimated average is: 3<sup>rd</sup> grade students who scored 605 on i-Ready Reading have a 50% chance of scoring 642 or higher (i.e., reaching “Meets Expectations”) on the SC READY ELA test. We recommend thinking about this scatterplot of the real student test scores when using and interpreting the linking results. Knowing the associated limitations of the results will allow educators to take the appropriate caution when using the results to answer the question, *what would my students’ proficiency status on the spring state test likely be based on how they performed on the i-Ready assessment?*

Figure 1. Scatterplot of the SC READY ELA and i-Ready Reading Scores, Grade 8, Spring 2023



# CONCLUSIONS

EA conducted linking studies between the spring 2023 SC READY Mathematics and ELA assessments and the Curriculum Associates i-Ready Mathematics and Reading assessments for the purpose of providing updated results based on the most current assessment data available in order to facilitate interpretation of scores between the two assessments. Once again, we recommend that in cases where interim vendors' studies are more recent or utilize the same assessment year as our own results, that educators prioritize the use of the vendors' results and resources.

Despite good classification accuracy results from this study, there are still important notes of caution to call out when interpreting and using the linked scores. As with any statistical procedure, there is associated error and limitations of the results. Additionally, the two tests are constructed differently with regard to test content, design, and purpose. For example, the i-Ready Diagnostic Reading test measures students' reading strategies and skills in the following domains – “High-Frequency Words, Phonics, Phonological Awareness, Reading Comprehension: Literature, Reading Comprehension: Informational Text, and Vocabulary” (Curriculum Associates, 2019, p.11). The SC READY ELA assessment is composed of two subtests – writing and reading, and measures student performance on Reading – Literary Text, Reading – Informational Text, Inquiry, and Writing (SCDE, 2022). The statistical adjustments in linking do not adjust for differences in content.

Therefore, scores on the SC READY and Curriculum Associates i-Ready assessments should not be used interchangeably. The linked scores facilitate comparisons of proficiency status between two assessments, but do not imply equivalence.

# ADDITIONAL INFORMATION

More information about this study can be found in Education Analytics' February 2024 technical report titled “Linking Study Between South Carolina College- And Career-Ready Assessment (SC Ready) and i-Ready Assessment, Grades 3-8”. That report can be found at the following link:

[SC READY and i-Ready Linking Study Technical Report Final - February 2024 \(PDF\)](#)

# ABOUT EDUCATION ANALYTICS

Professor Robert Meyer formed EA in late 2012 with the objective of conducting research and developing policy and management analytics to support reform and continuous improvement in American education. This institutional mission—to identify ways that analytics can make education systems better—has been central to our work with the federal government, school districts, states, non-profits, and policymakers. EA serves as a partner, and not just a vendor, by engaging in hands-on analytics support and thought partnership around how to address potential shifts in the policy landscape.

EA is a 501(c)(3) non-profit organization headquartered in Madison, Wisconsin, and employs approximately one hundred research scientists, programmers, data engineers, data strategists, and support staff. EA's areas of expertise include student growth metrics, human capital analytics, predictive analytics, technical assistance, data preparation and reporting services, and more. Our deeply knowledgeable and experienced team not only offers a full range of education analytics knowledge to our partners to support new systems, but also strives to co-build each system with stakeholders to match the available data and meet the desired policy requirements.

## REFERENCES

Curriculum Associates. (2019). *i-Ready Assessments Technical Manual*. North Billerica, MA: Author.

South Carolina Department of Education. (2022). *SC READY and SCPASS Score Report User's Guide: For Use with Spring 2022 Score Reports*. Columbia, SC: Author.