COVID-19 Academic Impact in Rhode Island

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Background

The COVID-19 pandemic has and continues to disrupt the lives of people worldwide. The disruptions occurring were multifaceted including economic, physical, and emotional impacts. Across the United States, one area seeing widespread disruption was K-12 education. Student education was disrupted in numerous ways including where students actually learned (e.g., in person or remote). Beginning in Spring 2020, remote education — where students attended class virtually from home — became widely utilized across the United States. Mode of education coupled with a myriad of other impediments including masks in schools and outbreaks leading to school shutdowns, brought on by the pandemic in Rhode Island led to a once in a lifetime crisis hitting the state's education system and adversely impacting its students.

The Rhode Island Department of Education (RIDE) is committed to understanding the various ways in which the pandemic impacted students. Fundamental to assisting students recover from the pandemic is to derive a clear understanding of what those impacts were. Targeted support to address impacts due to the pandemic and accelerating learning requires an understanding of *who* to help, in *what* subject to help, and *how* much to help. Specifically,

Who Who were the students impacted academically by the pandemic?

What In what content areas/subjects/fields were students impacted?

How Much How much were students academically impacted?

Rhode Island is well positioned to answer these three questions by examining data derived from annual standardized assessments that are administered broadly to students throughout the state. The Rhode Island RICAS assessment in English Language Arts (ELA) and mathematics are given annually to students in grades 3 to 8 and provide high quality academic achievement data that can be used to understand the academic impact the pandemic has had on students. Similarly, the WIDA-ACCESS English Language Proficiency test is given annually to multi-lingual learners in kindergarten through grade 12.

This report presents detailed analyses conducted using RICAS and WIDA-ACCESS data to assess the academic impact that the pandemic has had on Rhode Island students. Detailed analyses of these type can often obfuscate overall findings of a report. To that end we have included an executive Summary of the findings of this report in the Appendix beginning on Page 170 noting it will likely require three to five years for students to overcome. The large overall impact, however, masks important variability that is important to understand in order to target recovery resources effectively and efficiently.

Data and Analyses

Data utilized for these analyses were supplied by the Rhode Island Department of Education. Student assessment data from the annual state summative assessment (RICAS) were supplied in Summer 2021. These data were combined with previous years' RICAS data to perform the necessary pre-pandemic to pandemic comparisons. Data for the RICAS assessment includes results in both ELA and mathematics for grades 3, 4, 5, 6, 7, and 8. WIDA-ACCESS data were supplied for grades K to 12 and combined with WIDA-ACCESS data from previous years to perform the academic impact analyses.

Any examination of pandemic related academic impact requires an understanding of how students were doing academically before the pandemic. Due to the pandemic, RICAS testing was canceled in spring 2020. Given that the pandemic had just started at the time, it is doubtful that were spring 2020 RICAS data collected, they would have been of any use in assessing academic impact. Thus this study utilizes RICAS assessment results from 2019 and earlier in order to compare them to pandemic results (2021 and later).

The situation is different for WIDA-ACCESS testing. Administered in late winter of each year, WIDA-ACCESS testing occurred in Rhode Island prior to the onset of the pandemic in spring 2020. Thus, this study utilizes WIDA-ACCESS results from 2020 and earlier in order to compare them to pandemic results in 2021.

Conceptually, understanding academic impact is not difficult. In essence, the pandemic and all the disruptions that it caused to student education served as an academic headwind for students, slowing their learning. Academic impact refers to the extent to which learning slowed down (deceleration) — the difference between where students would have been absent the pandemic versus where they ended up due to the pandemic. This is analogous to the way in which a headwind slows down forward velocity when one is driving. Non-pandemic outcomes are often referred to as counter-factuals.

With RICAS and WIDA-ACCESS assessment data, we consider two approaches to calculating these counter-factuals:

Status Compare the academic status (i.e. academic attainment) of similar groups of pre-pandemic students with pandemic students. For example, compare the pre-pandemic status (e.g., percent proficient in 2019) of Grade 5 students in ELA with their pandemic counterparts in 2021.

Growth Compare the growth of students from 2019 to 2021 (pandemic impacted growth in learning) with the growth of students from 2017 to 2019 (non-pandemic impacted growth in learning). For example, compare the median SGP in 2019 of Grade 5 students in ELA with their pandemic counterparts in 2021.

The two approaches are consistent with and complement one another in that both attempt to quantify the extent to which student learning *decelerated*. Whereas decrease in student growth (i.e., the decrease in learning velocity) directly quantifies the extent to which learning decelerated, the analysis status looks at an outcome of lower rates of learning — lower student attainment (i.e. status). Whereas growth is analogous to a speedometer status is analogous to an odometer. If deceleration occurs (decrease in speed), then the decrease in the speedometer will yield a commensurate decrease in the odometer.

Each approach has advantages and disadvantages. From a perspective of maximizing accuracy, decrease in growth is a better indicator as it examines a single group of students and any deceleration of their growth over the course of the pandemic. Analysis of growth, however, requires that the student has a growth score. Due to the cancellation of RICAS state testing in spring 2020, RICAS

growth is only available for students in grades 5, 6, 7, and 8 in 2021. For WIDA-ACCESS growth is available for students in grade 1 through 12.

A distinct advantage for status comparisons is that they are available for all RICAS and WIDA-ACCESS grades. However, a disadvantage is that status comparisons necessarily utilize two groups of students on which to base the comparison. Using two groups of students (pre-pandemic group versus pandemic group) raises the question of whether the two groups are comparable. Because of changing student composition in the state as well as greater than usual non-participation in state assessments in 2021, there is concern that comparisons will yield biased results and incorrect conclusions about academic impact. Discussed later, we employed multiple imputation as a method of determining the impact that non-participation had on results.

To address the question of who was impacted and in what, analyses were conducted in each content area for each of several relevant demographic/academic groupings including:

- Content Area by Grade
- Content Area by Grade by Ethnicity
- Content Area by Grade by Special Education Status
- Content Area by Grade by Socio-Economic Status
- Content Area by Grade by English Language Learner Status
- Content Area by Grade by Gender
- Content Area by Grade by District

The sheer number of permutations possible in examining academic impact yields an overwhelming amount of information for Rhode Island stakeholders to understand, communicate and take action on. To make the results of these analyses as understandable as possible, several visualizations were developed specifically for these analyses to help communicate academic impact in a way that avoids much of the technical background associated with the analyses. The report contains all technical details associated with analyses but summarizes the academic impact results in as parsimonious a manner as possible so that all audiences can understand the outcomes.

Despite the simple conceptual heuristic of an “academic headwind" used earlier to motivate the idea of academic impact, quantifying the deceleration in student learning can be tricky to implement analytically and to understand the results from such analyses. Whereas status and growth are common metrics reported as part of Rhode Island accountability, acceleration/deceleration are not generally calculated nor reported.

Figure 1 illustrates academic impact using the Rhode Island RICAS data in terms of growth (left column sub-figures) and status (right column sub-figures). In the following subsections we discuss how these growth and status are used to quantify deceleration and using these metrics quantify the academic impact associated with Rhode Island students.

Status

Status comparisons utilize two distinct cohorts (one pre-pandemic from 2019 and the other pandemic from 2021) in the same grade and content area to see how much lower student attainment is in 2021 than in 2019. Decrease in student attainment (i.e. reported as decrease in the percentage of students at/above proficient) is the most common way in which academic impacts has been reported.

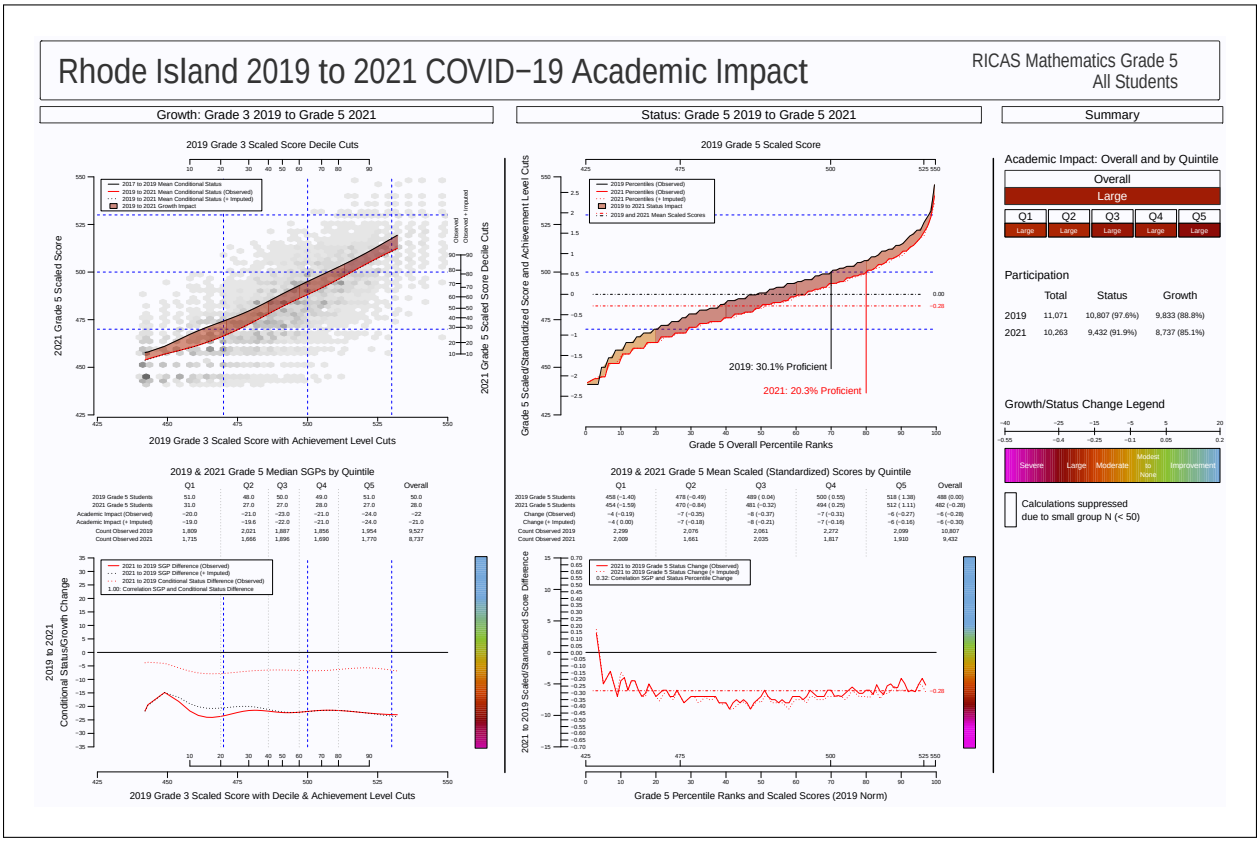


Figure 1: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics.

We extend this approach substantially by computing the decrease in status between two cohorts (pre-pandemic and pandemic) as a function of the percentile of each distribution:

$$\text{Status Impact} \equiv (\text{Scale Score}_{2019} - \text{Scale Score}_{2021} | \text{Percentile Rank})$$

For example, the status impact illustrated in Figure 1 indicates the the decrease in attainment between the 2019 Grade 5 cohort in mathematics and the 2021 Grade 5 cohort in mathematics. That is, the 2019 Grade 5 cohort is used as the counter-factual to indicate where the 2021 cohort of students would have been had the pandemic not occurred. There are obvious issues with this approach in that is doesn't take account of any improvement in the system nor does it take account of possible changes to student cohorts that occur. But given, in general, small system improvements for percent proficient and minor changes occurring at the state level in terms of the population of students, these issues are likely to be minor.

The upper right panel of Figure 1 illustrate the status impact in mathematics for grade 5. The 2019 and 2021 empirical cumulative distribution functions (ECDFs) are plotted showing the decease/increase in scale score from 2019 to 2021 as a function of the percentile between the two cohorts of students. The area between the two ECDFs is shaded red to illustrate the observed decreases in scale scores between the two cohorts.

The upper right panel additionally shows the achievement level cutscores for grade 5 math as horizontal dashed lines. Decrease in percent proficient is thus indicated as the (horizontal) distance between the points of intersection of the two ECDFs and the proficiency level cutscore line. Decrease in percent proficient is the most commonly used metric currently in use to communicate academic

impact. Though the decrease in percent proficient metric is not conceptually wrong, one can see that using the horizontal distance between the two ECDFs at that scale score could, in some cases, provide an inaccurate view of the distance between the two ECDFs (which is one measure of academic impact).

Additionally, the upper right panel associated with Figure 1 depicts the mean scale score of the 2019 and 2021 cohorts and the (vertical) distance between the two lines indicates the average scale score decrease. This, like the percent proficient difference is a point estimate of the overall differences between the two ECDFs. If the two ECDFs are a equivalent up to a scale shift, then both percent proficient decrease and mean scale score decrease will accurately capture the distance between the two ECDFs. A quick look at the ECDFs indicates that very few would be considered a scale shift of the other leaving the percent proficient metric to characterize the academic impact of students as an inferior summarization.

The lower right panel of Figure 1 illustrates the actual scaled score and standardized scaled score differences depicted in the top right panel shaded area indicating academic impact. The top axis for the bottom right figure provides summaries by grade 5 quintile level of academic achievement and overall. The benefit of looking at the range of academic impact across the achievement percentile range is to investigate whether academic impacts in that grade and content area varied by the achievement level of the student. That is, was it low, middle, or high achieving students in the grade who demonstrated greater academic impact. Because these results provide average of all students, at the individual level there is a range of academic impact associated with students. The results shown demonstrate what was shown on average.

Assessment Participation

Participation in the RICAS assessment in 2021 was not as high as in previous years. Whereas participation rates usually exceed 95 percent of students, in 2019, participation ranged between 80 and 90 percent, with lower rates of participation in the higher grades tested. Lower testing rates raise concern that the students who did test might be systematically different than those who did such that summaries derived from those who did test are biased estimates of the population total and thus lead to erroneous conclusions about student academic impact for all students in the grade or content area in the state.

To address the bias impact of missing data we applied multiple imputation to the 2021 test score data to impute missing scores as part of the academic impact investigations. Multiple imputation utilized all available demographic data on students as well as prior scores (if available) to impute scores for students with missing test scores. One hundred imputations were performed and the mean of the imputations was used as the estimate for summarization purposes.[1]

To illustrate results associated with missing data, the upper right panel in Figure 1 has an additional dotted ECDF indicating the 2021 ECDF associate with observed and imputed student records. Similarly, the lower right panel has a dotted line indicating the academic impact based upon the difference between the 2019 observed results and the 2021 observed plus imputed results. Because Rhode Island's participation rates in 2021 varied by grade, the observed + imputed results differ more in some grades than in other. Overall, we find, missing data does not change the overall finding that academic impact was large.

[1] Though multiple imputation provides imputed, individual level scores for missing data, the purpose is not to create individual level scores for students. The goal is to impute the missing data for purposes of overall summarization indicating the potential impact that missing data has on observed results.

Growth

Analyzing student growth provides a technically superior way to assess the impact of the pandemic due to the fact that growth conditions on prior achievement making it less susceptible to bias induced from any missing data or changing composition of the population. Using baseline referenced student growth percentiles we assess the academic impact of the pandemic by quantifying the decreases the median SGP from 2019 to 2021.[2]

$$\text{Growth Impact} \equiv \text{Median SGP}_{2019} - \text{Median SGP}_{2021}$$

Student growth percentiles (SGPs) are conditional status percentiles utilizing up to two prior achievement scores. For RICAS data the prior scores are from two and three-years prior. For WIDA-ACCESS, the prior scores are from one and two-years prior. The upper left panel of Figure 1 is a scatterplot illustrating the grade 3 2019 versus grade 5 2021 scores of students. Superimposed on the scatter plot is are two conditional splines: 2017 to 2019 (pre-pandemic) and 2019 to 2021 (pandemic). The conditional spline indicates where, based upon the students prior score, the student were on average two-years later.

As Figure 1 illustrates, pre-pandemic the observed grade 5 conditional scores exceeded those of what was seen in 2021 during the pandemic. That is, the pre-pandemic academic growth of students was greater than that observed during the pandemic. The difference between these curves represents the academic impact of the pandemic on student academic growth. For both the horizontal and vertical axis scales, the cutscores between the 4 RICAS performance levels are also indicated.

To help better visualize the academic impact across the grade 3 achievement continuum, the lower left panel illustrates the decrease observed between the two conditional splines. Median student growth percentiles by quintile and overall associated with the pre-pandemic (2017 to 2019) and pandemic (2019 to 2021) two year spans are shown in the upper axis of the lower left panel. In Figure 1 the academic impact line is fairly horizontal indicating a constant level of academic impact across the achievement continuum. That is, academic impact appears is constant and large for low, middle and high achieving students.

Like with the status plots, the growth plots also show imputed data in terms of a 2021 conditional spline that is based on both the observed plus imputed scores. The lower panel shows the results for the imputed values as well. In general, because growth analyses conditional upon prior scores, they are more robust to missing data than are status analyses (right column plots).

Status and Growth

As mentioned previously, both the status approach and the growth approach have distinct advantages and disadvantages. Whereas the attainment comparison (i.e., status) is universally applicable across all grades and content areas, the growth comparison is only applicable when there is growth data. For the annual RICAS assessment, student growth in 2021 is only available for grades 5, 6, 7 and 8. For the WIDA-ACCESS assessment, growth data is available for Grade 1 to 12. The growth comparison examines only a single set of students whereas attainment comparisons compare two different cohorts of students which may potentially include selection bias if the cohorts are fundamentally different. Growth analyses are less impacted by selection bias and are the superior technical approach to examine academic impact when available. The analyses in this study apply both approaches.

[2]Growth norms were derived from 2017 to 2019, pre-pandemic RICAS data and 2018 to 2019 WIDA-ACCESS data in order to report growth (i.e., student academic learning) on the pre-pandemic scale. Pre-pandemic median SGPs by grade and content area will, by definition, be 50. Median baseline SGPs from 2019 to 2021 below 50 will indicate the extent to which learning has slowed over the two year span from 2019 to 2021.

To simplify interpretation, academic impact was categorized into one of five categories depending upon the magnitude of impact. Academic impact for each group was provided overall as well as by achievement quintile. The latter breakdown helps to understand whether academic impact was uniform across levels of achievement within each group. Academic impact was categorized as follows:

Severe Growth Impact ≤ -25 or Status Impact ≤ -0.4.

Large $-25 <$ Growth Impact ≤ -15 or $-0.4 <$ Status Impact ≤ -0.25.

Moderate $-15 <$ Growth Impact ≤ -5 or $-0.25 <$ Status Impact ≤ -0.1.

Modest to None $-5 <$ Growth Impact ≤ 5 or $-0.1 <$ Status Impact ≤ 0.05.

Improvement Growth Impact > 5 or Status Impact > 0.05.

The creation of these five categories was based upon effect size nomenclature for the status impacts and based upon experience with growth as used in accountability for the growth impacts. For example, pre-pandemic system growth has median SGP of 50. Median SGPs associated with severe academic impact would be below 25. Under normal circumstances with school accountability, schools demonstrating median SGPs below 25 are rare and some of the most in need schools in the education system. For an entire state in a grade and content area to demonstrate that level of student learning is indicative of an unprecedented slow down in student learning.

In general, impacts classified as Severe or Large are of a magnitude such that recovery from those impacts (i.e., academic achievement increases that return student achievement to where it would have been absent the pandemic) will likely take three to five years to occur and likely require substantial academic interventions to bring about the acceleration necessary to catch-up. For example, for a grade and content area with a 2019 to 2021 SGP of 25, in order to bring about a recovery back to where typical student growth (i.e., median SGP of 50) would have led, 2021 to 2023 student growth would need to be 75. Historically, schools demonstrating a median SGP of 75 are rare and are exemplary in terms of their high rates of learning. For an entire state in a grade and content area to demonstrate that level of student learning will be unprecedented and almost certainly require unprecedented resources and effort.

Impacts classified as Modest to None or Improvement are of a magnitude such that recovery (when necessary) is small enough so that recovery can reasonably be expected to occur within an academic year possibly with some academic interventions. Impacts classified as moderate are between Modest to None and Large and likely will require at least a year with academic interventions to catch students back up. The following sections provide results indicating the level of academic impact observed.

Results

RICAS

To synthesize all the disparate results associated with the academic impact analyses, Figures 2 and 3 illustrate the results of all the different analyses in a single visualization. The figures show RICAS academic impact data using the 5 categories (severe, large, moderate, modest to none, and improvement) discussed previously. Figure 2 presents results by each grade and content area for the RICAS overall as well as by the numerous demographic subgroups discussed. Closer examination of the figure yields some critical insights into the nature of the pandemic on student achievement.

- In ELA impacts were, in general, moderate to large. In mathematics impacts were large to severe.

- The impacts in mathematics were larger than in English language arts.
- The impacts varied by demographic subgroups. Hispanic students, for example, demonstrated the largest impacts in mathematics.
- Impacts are large or larger in the higher grades than in the lower grades.
- Examination of the results by quintile in Figure 3 indicates greater academic impact for higher achieving students than lower achieving students in some grades, content areas and subgroups.

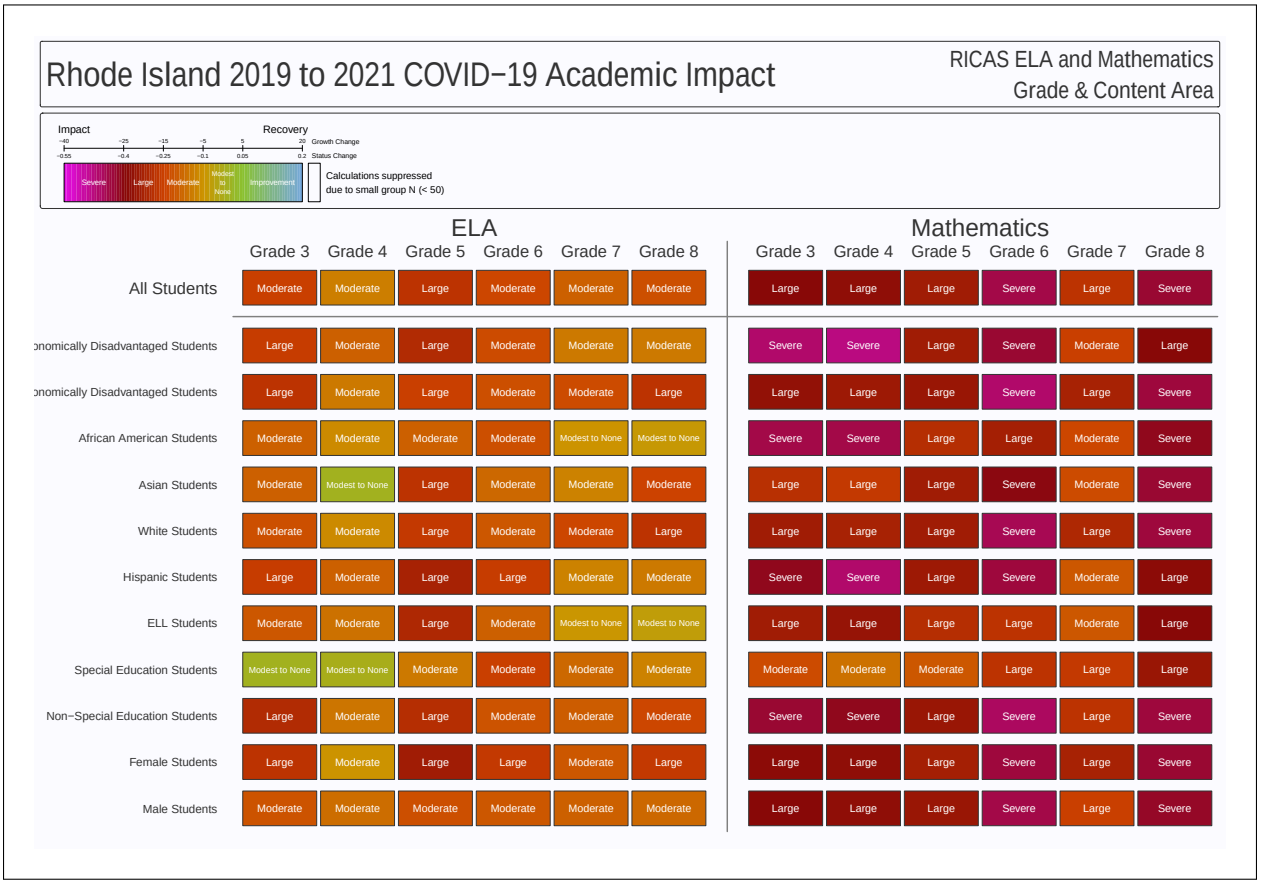


Figure 2: RICAS Academic Impact Overview for all students and student subgroups by grade and content area

Note that each of the academic impact rectangles shown in Figure 2 has a corresponding detailed status and growth academic impact result figure in the Appendix beginning on page 19. For example, the overall results for Grade 8, mathematics can be examined in greater depth in Figure 24 on page 31.

Overall academic impact in Figure 2 can be further broken down by achievement quintiles for each of the grade by content areas represented. Breaking groups up by academic quintile is intended to help understand whether academic impact varied by the level of student achievement. That is, were lower achieving students more impacted by the pandemic than high achieving students. Figure 3 illustrates these results.

Note that examination of impact by achievement quintile shows that academic impact occurred across the entire achievement spectrum. That is, in some grades and content areas it was the highest achieving students who demonstrated the largest impacts whereas in other grades and content areas

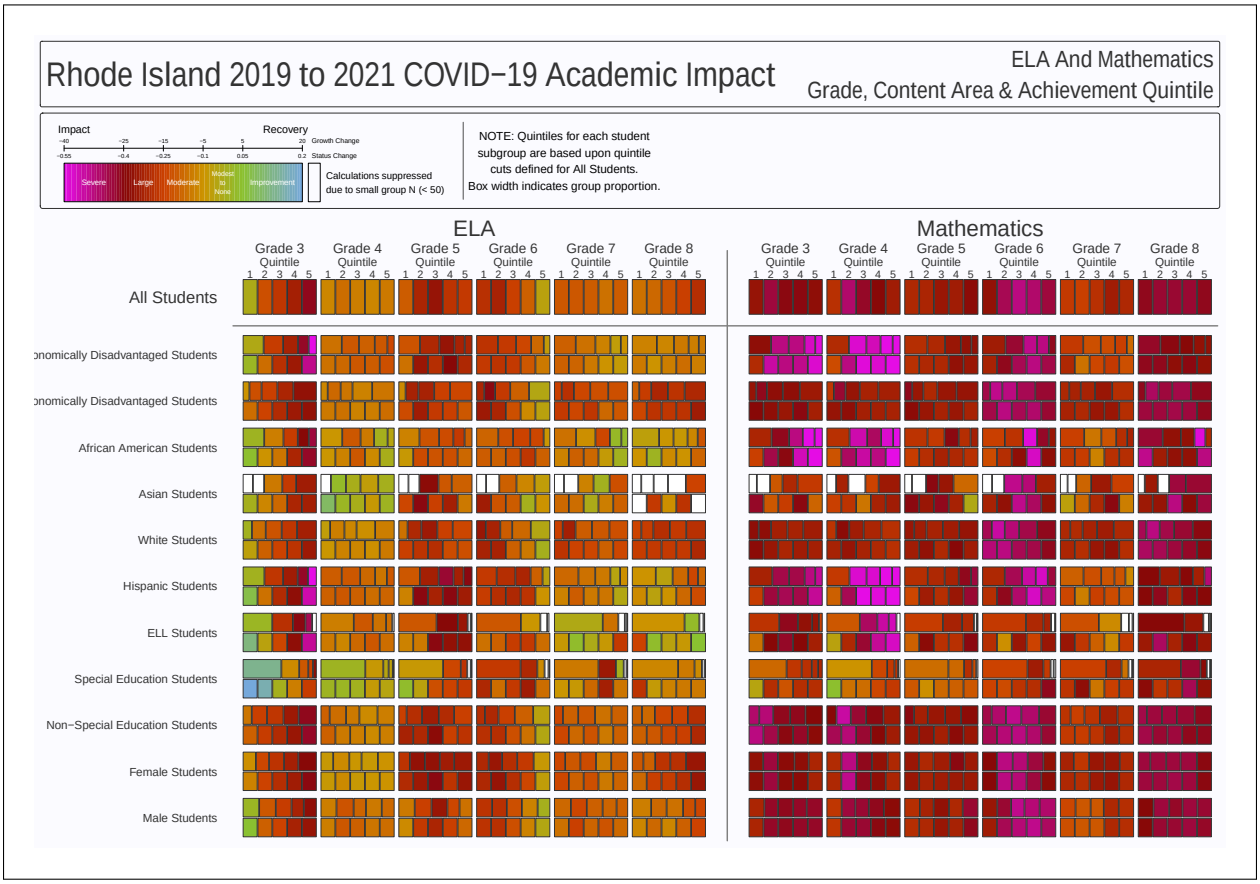


Figure 3: RICAS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

lower achieving students were impacted the most. A deeper understanding of how the interruptions due to the pandemic interacted with different grade level content will be necessary to help understand and validate these results. Results showing differential impact by achievement level are corroborated by results observed in 10 states.

We also conducted academic impact analyses by District. We restricted results to those districts with more than 250 students/grade x content area. The results of these analyses are presented in Figures 4. The district level results are consistent with what was observed at the state level indicating, on average large overall impacts and larger impacts in mathematics than in ELA. Not surprisingly, the district level results also show variability of overall academic impact. None of the districts made it through 2021 unscathed, but some faired better than others.

WIDA-ACCESS

Overall and by quintile overview figures (5 and 6) for WIDA-ACCESS analyses are provided. Due to the relatively small number of students taking the WIDA-ACCESS test, academic impact results by demographic subgroup are not calculated.

Close examination of the results in Figure 5 show moderate to large academic impact in the elementary and middle school grades with lesser impact in the high school grades. The results are consistent with results seen in six other WIDA-ACCESS states with larger impacts in the lower grades diminishing to little to no impact in the higher grades.

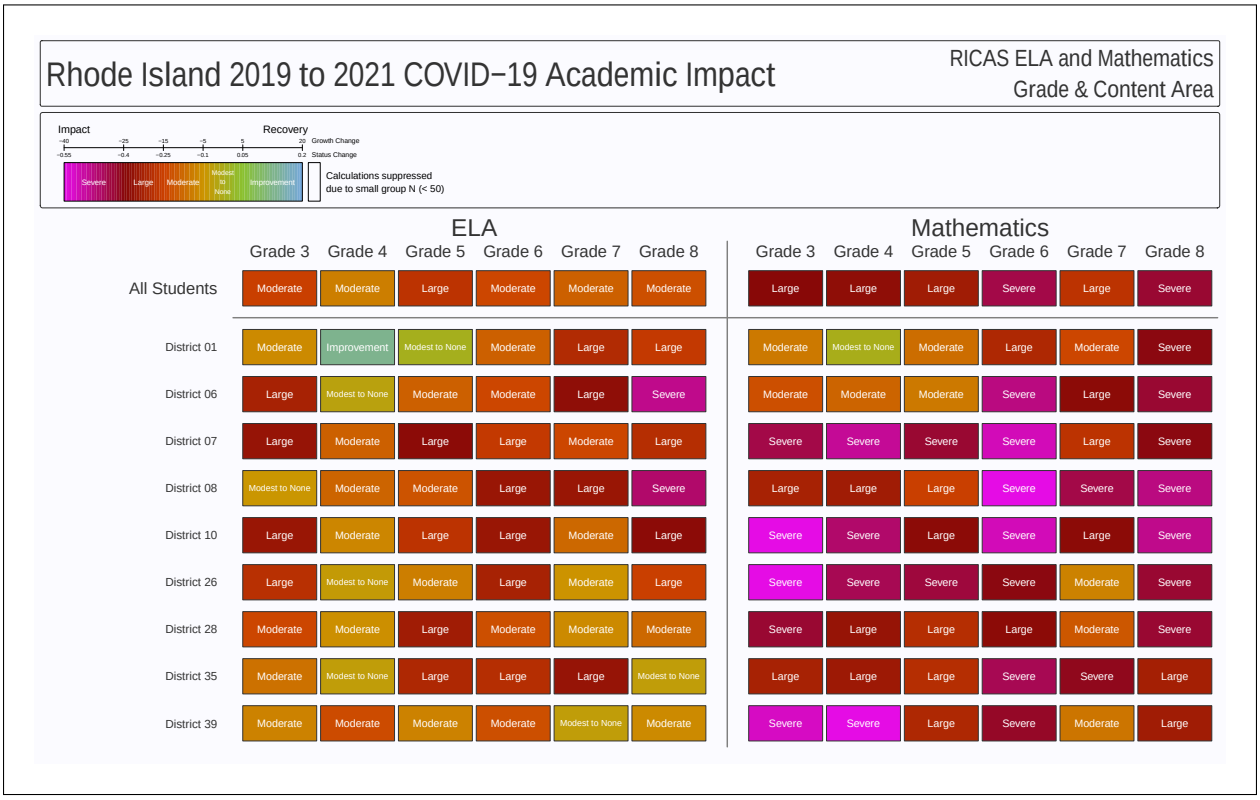


Figure 4: RICAS Academic Impact Overview for all students and student subgroups by grade, content area, and district (greater than 250 students/grade and content area)

Recall that academic impact is synonymous with deceleration in student learning. The absence of academic impact implies learning for those students showed modest to no deceleration. This result is more startling when we see that for students in lower grades, academic impact was large (i.e., learning decelerated appreciably). There are two competing hypotheses for this situation:

- Student, pre-pandemic, typical rates of learning were supported through some combination of factors.
- Student, pre-pandemic, typical rates of learning were low to begin with such that deceleration couldn't occur.

Given that these little results are consistent across seven states, it seems likely that the latter hypothesis holds.

As with the RICAS analyses, all the summary academic impact results associated with WIDA-ACCESS presented in Figures 5 and 6 have associated detailed breakdowns by grade and content area beginning on page 157.

Conclusion

2021 Rhode Island RICAS and WIDA-ACCESS data was successfully used in combination with historical Rhode Island RICAS and WIDA-ACCESS data to model the academic impact the pandemic has had on Rhode Island students. The results demonstrate substantial negative academic impacts on students with larger impacts in mathematics than in ELA. Results, in general, show larger impacts in higher grades than lower grades. Academic impact was, in general, constant by prior achievement

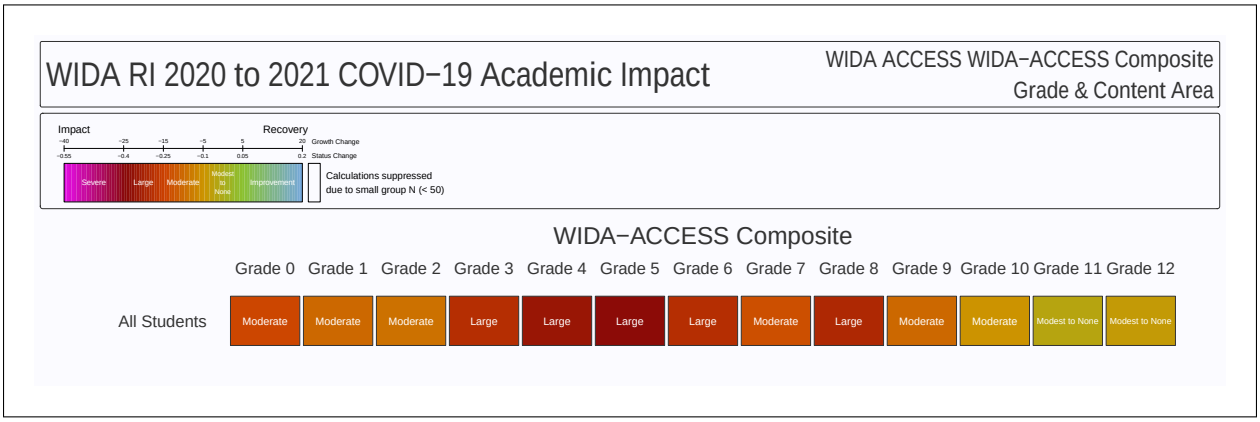


Figure 5: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade and content area

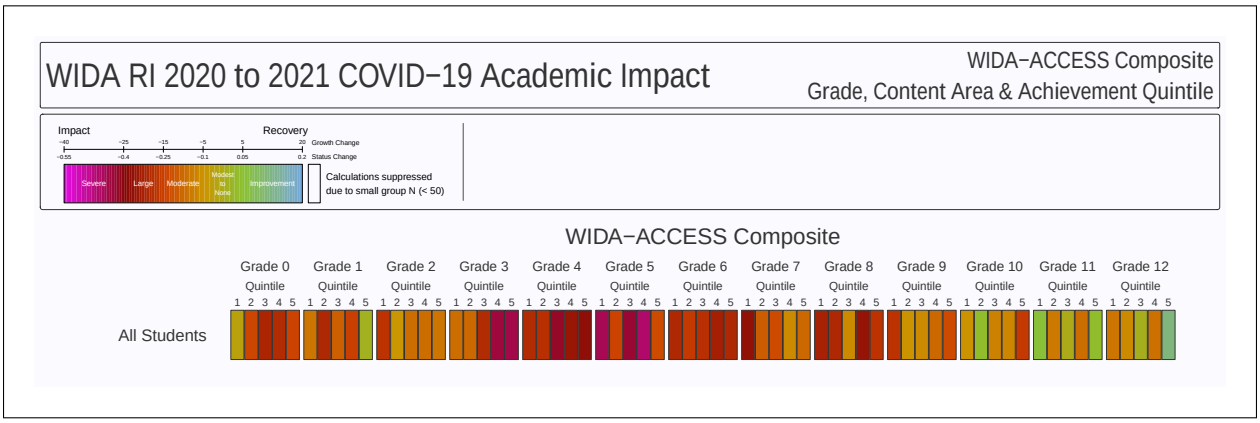


Figure 6: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

in content area and grade. However, in some grade and content areas there were uneven impacts. There was also considerable variability by demographic subgroup, academic subgroup and by district.

In general, the magnitude of the impacts suggest high rates of learning will need to be supported for a substantial amount of time (three to five years) in order for recovery to pre-pandemic levels to take place. RICAS data from 2022 assessment will be critical to determine to what extent academic recovery is taking place currently.

Appendix

Each of the following figures shows the academic impact associated with the pandemic on student RICAS assessments. Each figure shows status based impact and figures associated with grades 5, 6, 7, and 8 show growth impact. Summary results (overall and by quintile) for the subgroup analyzed are provided at the right of the figure. Summary results for grades 5, 6, 7, and 8 utilize the growth impact results for academic impact determinations and grades 3 and 4 utilize the status impact results.

Academic Impact was separated into 5 categories based upon the growth impact (or status impact in grades 3 and 4) observed.

Severe Growth Impact ≤ -25 or Status Impact ≤ -0.4.

Large $-25 <$ Growth Impact ≤ -15 or $-0.4 <$ Status Impact ≤ -0.25.

Moderate $-15 <$ Growth Impact ≤ -5 or $-0.25 <$ Status Impact ≤ -0.1.

Modest to None $-5 <$ Growth Impact ≤ 5 or $-0.1 <$ Status Impact ≤ 0.05.

Improvement Growth Impact > 5 or Status Impact > 0.05.

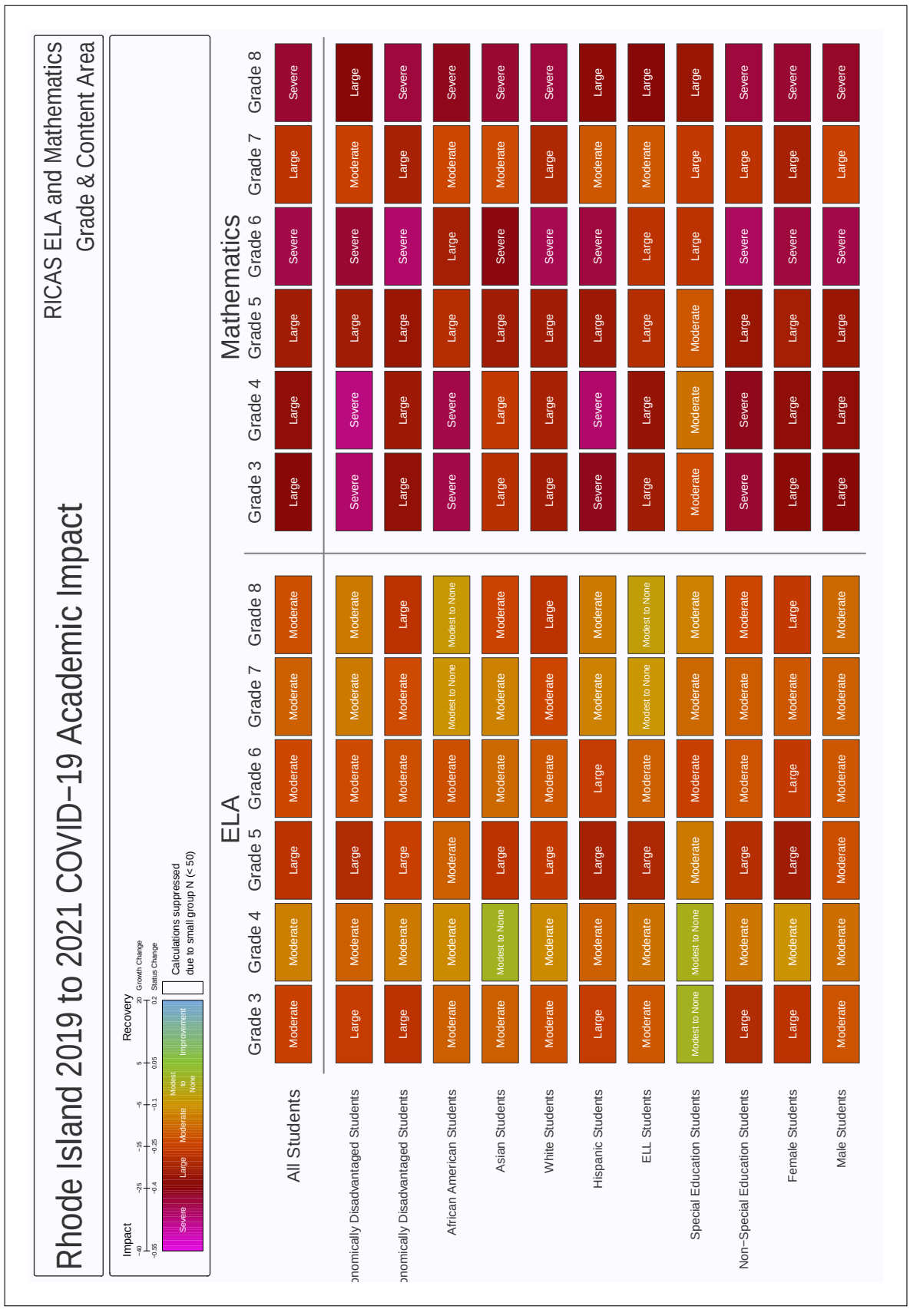


Figure 7: RICAS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

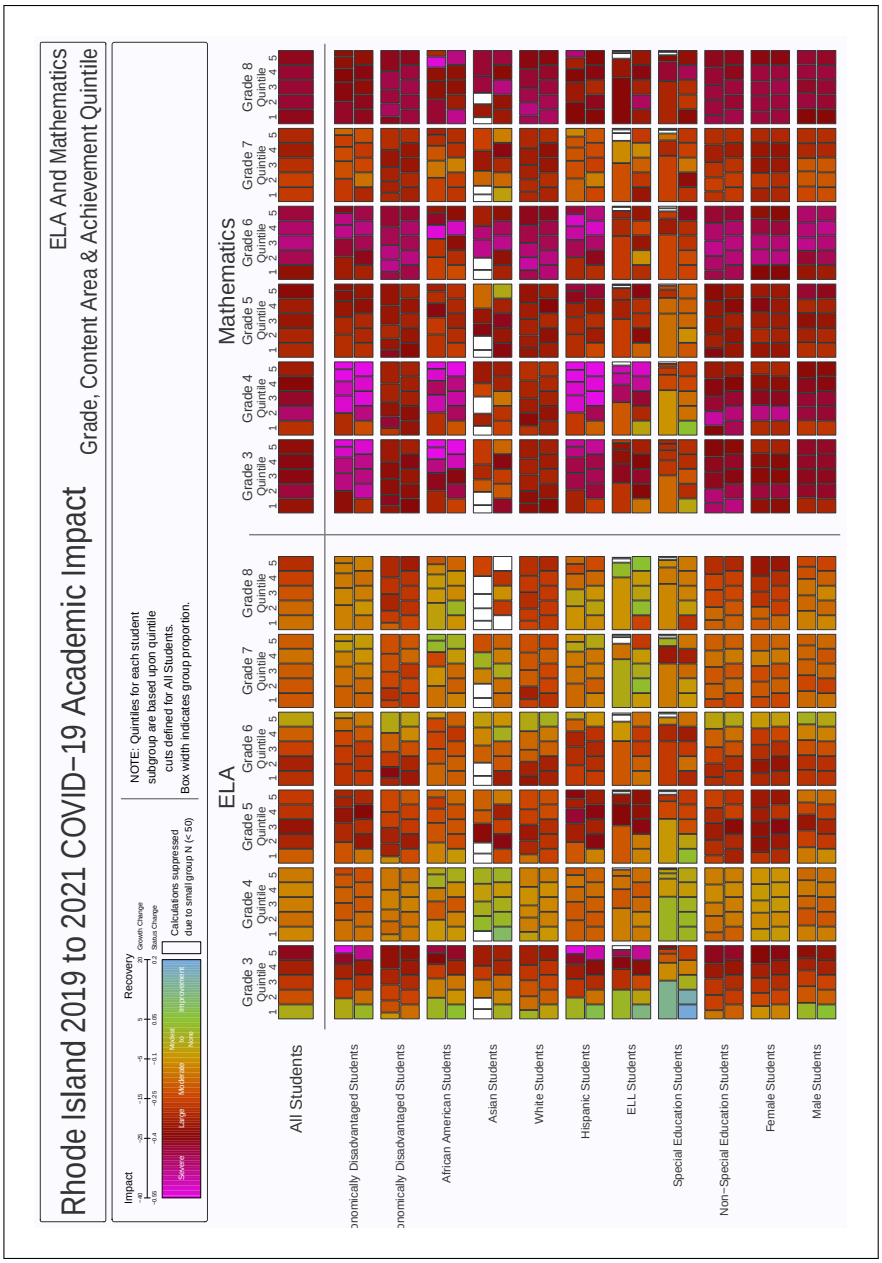


Figure 8: RICAS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

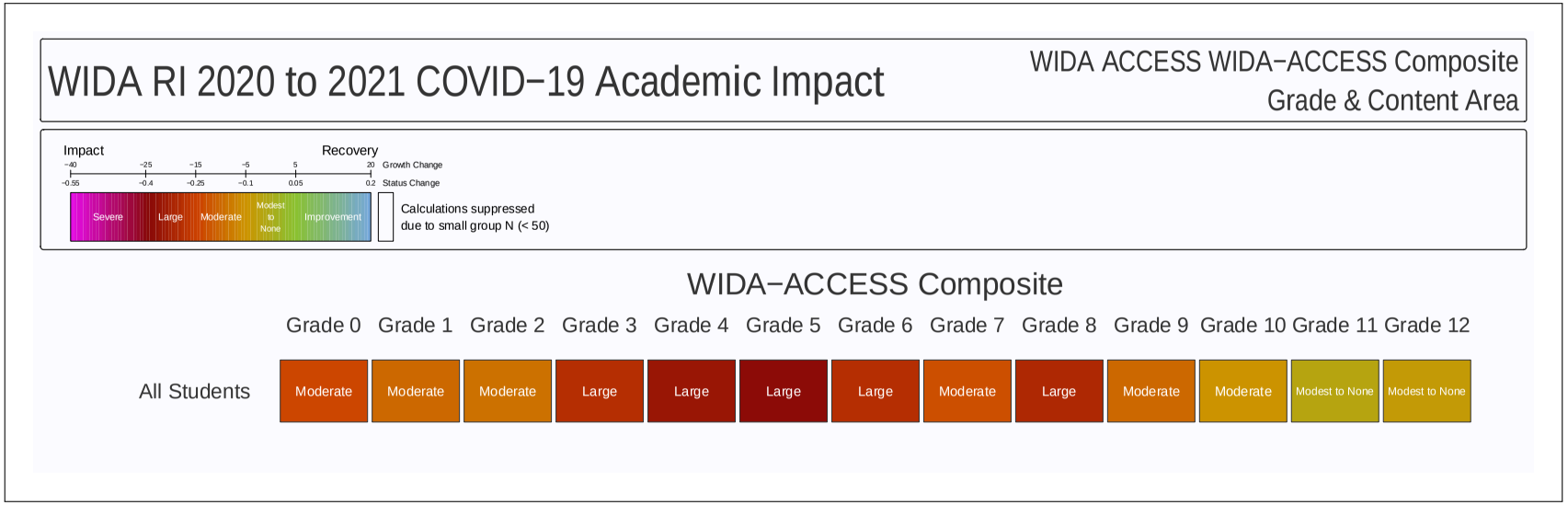


Figure 9: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

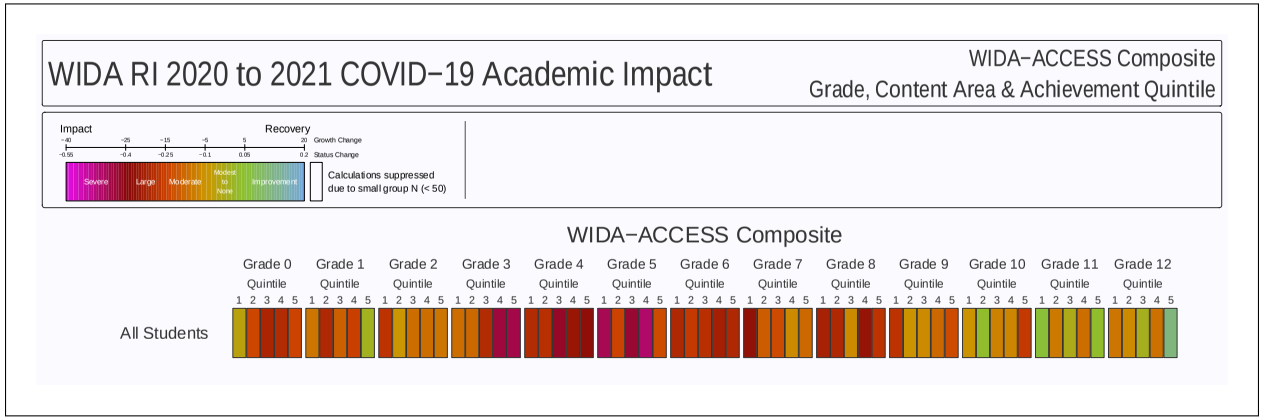


Figure 10: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

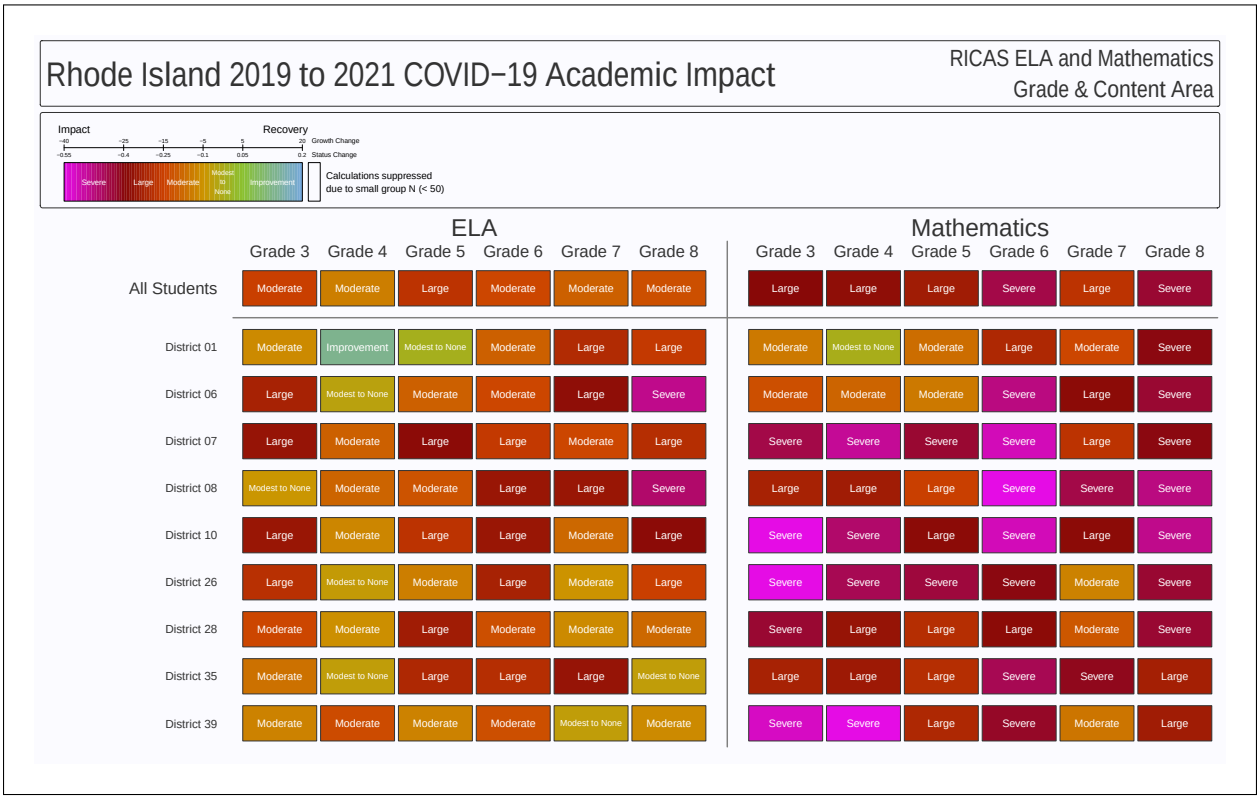


Figure 11: RICAS Academic Impact Overview for all students and student subgroups by grade, content area, and district (greater than 250 students/grade and content area)

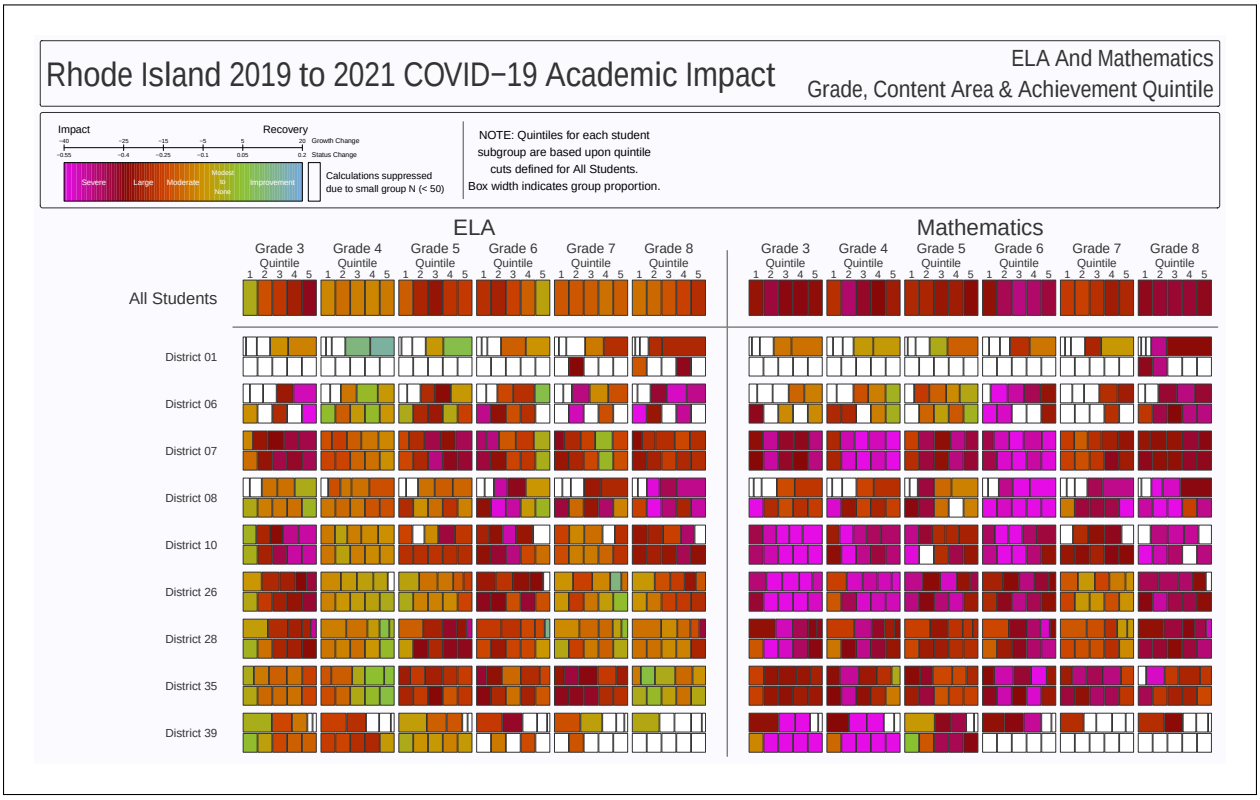
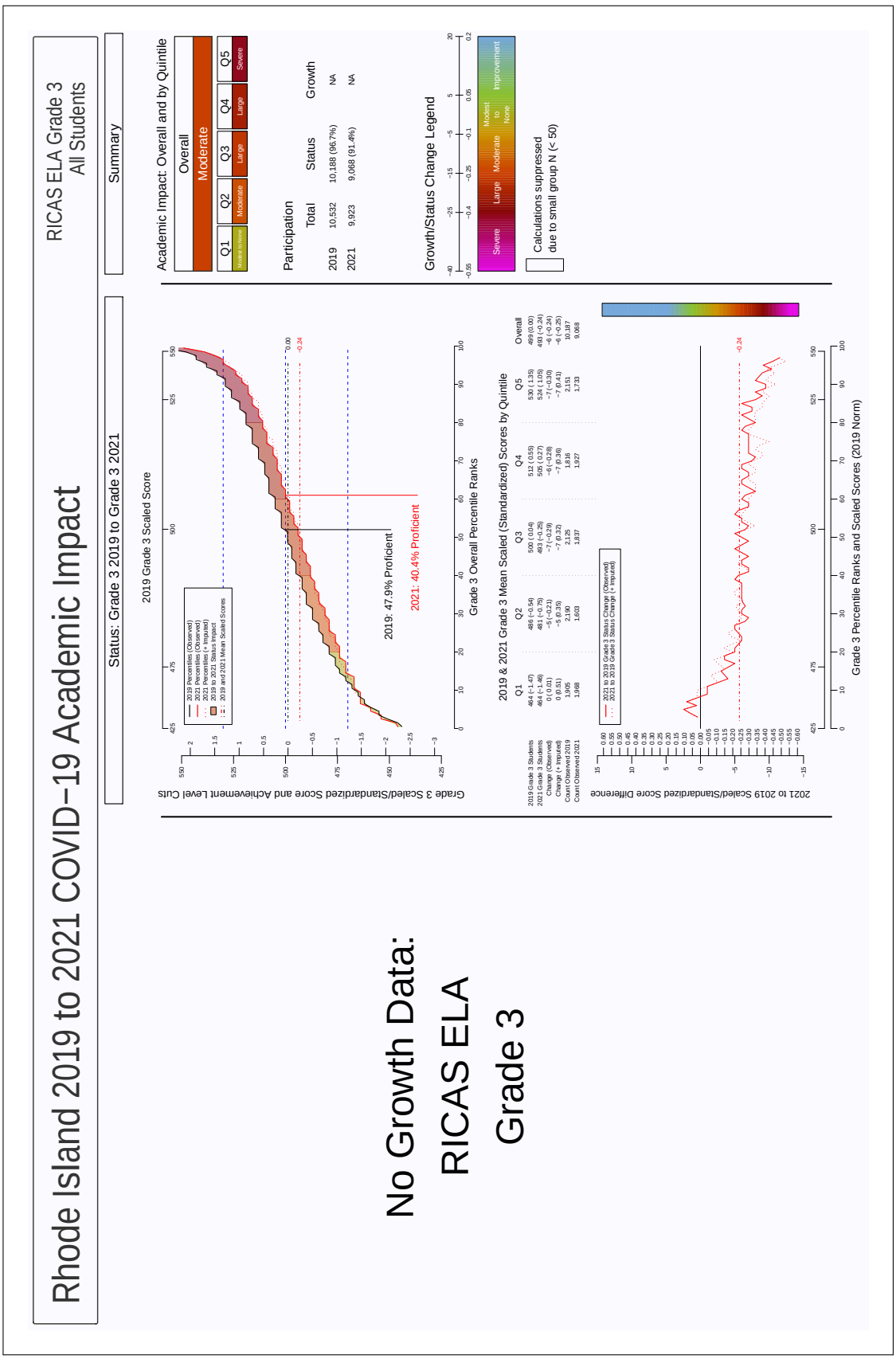


Figure 12: RICAS Academic Impact Overview for all students and student subgroups by grade, content area, and district (greater than 250 students/grade and content area) by quintiles

Grade by Content Area

The figures on the following pages illustrate pandemic related academic impact for students grouped by grade (3, 4, 5, 6, 7 or 8) and content area (ELA or mathematics)



No Growth Data:
RICAS ELA
Grade 3

Figure 13: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA

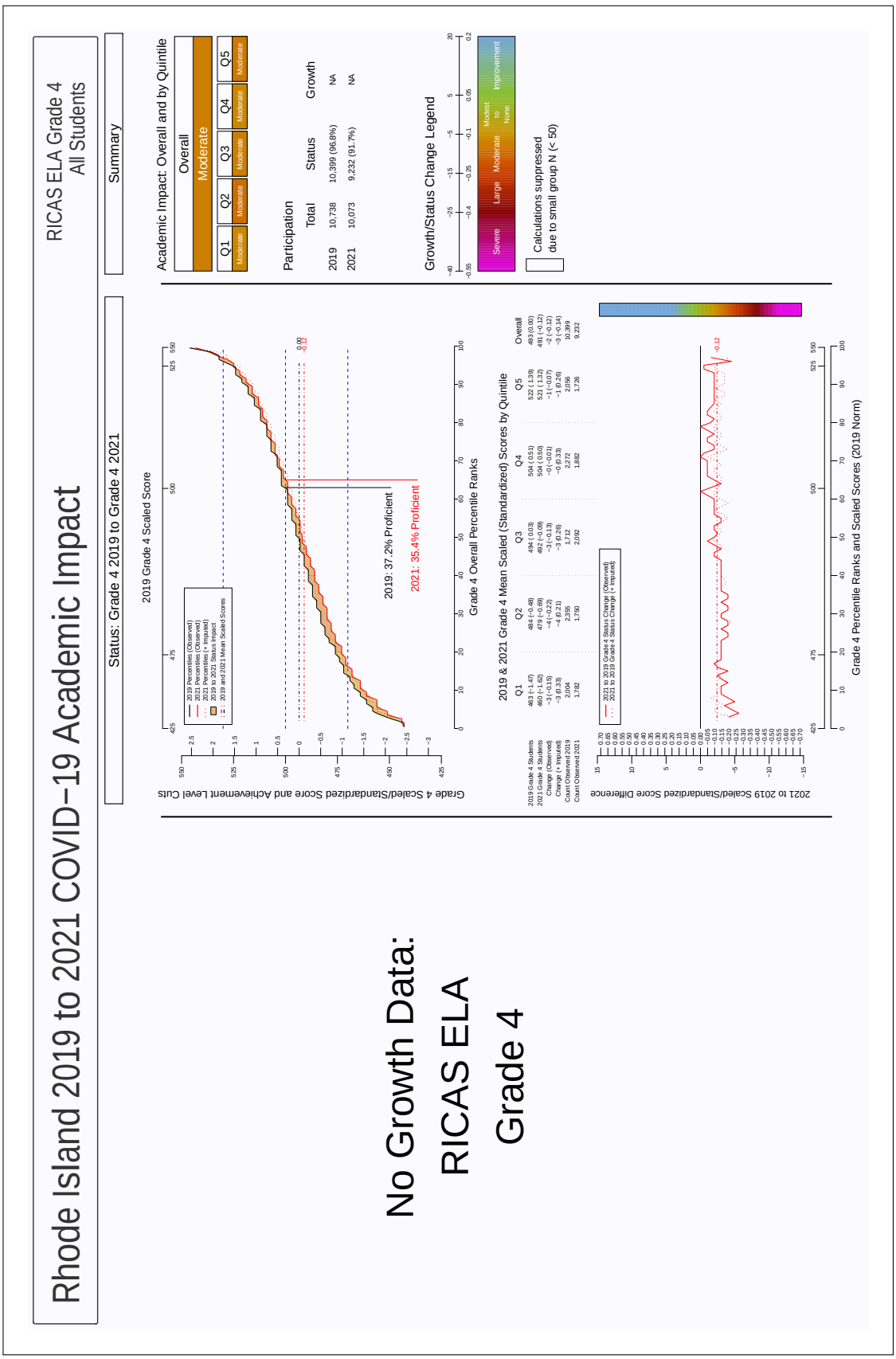


Figure 14: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA

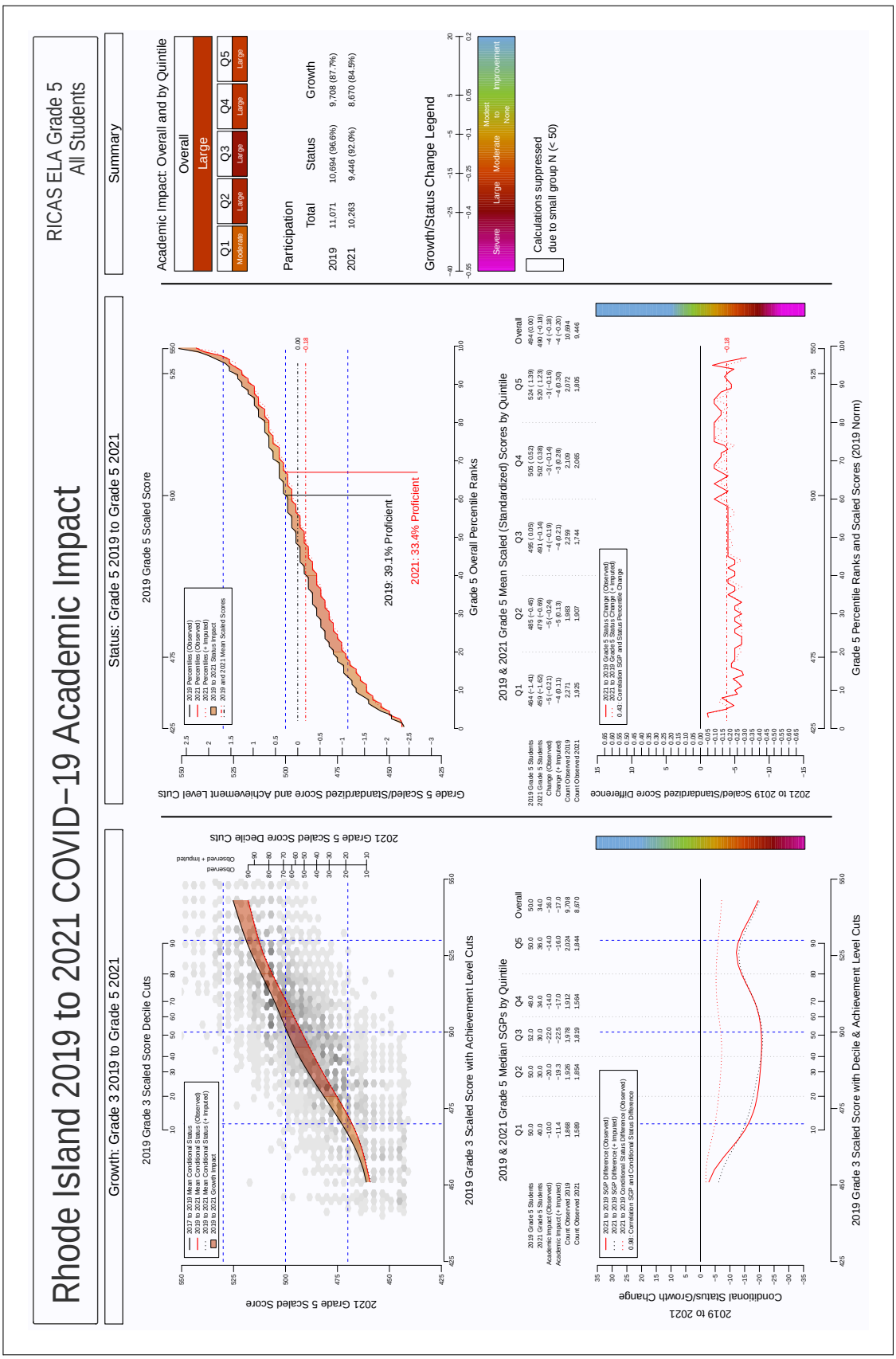


Figure 15: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA

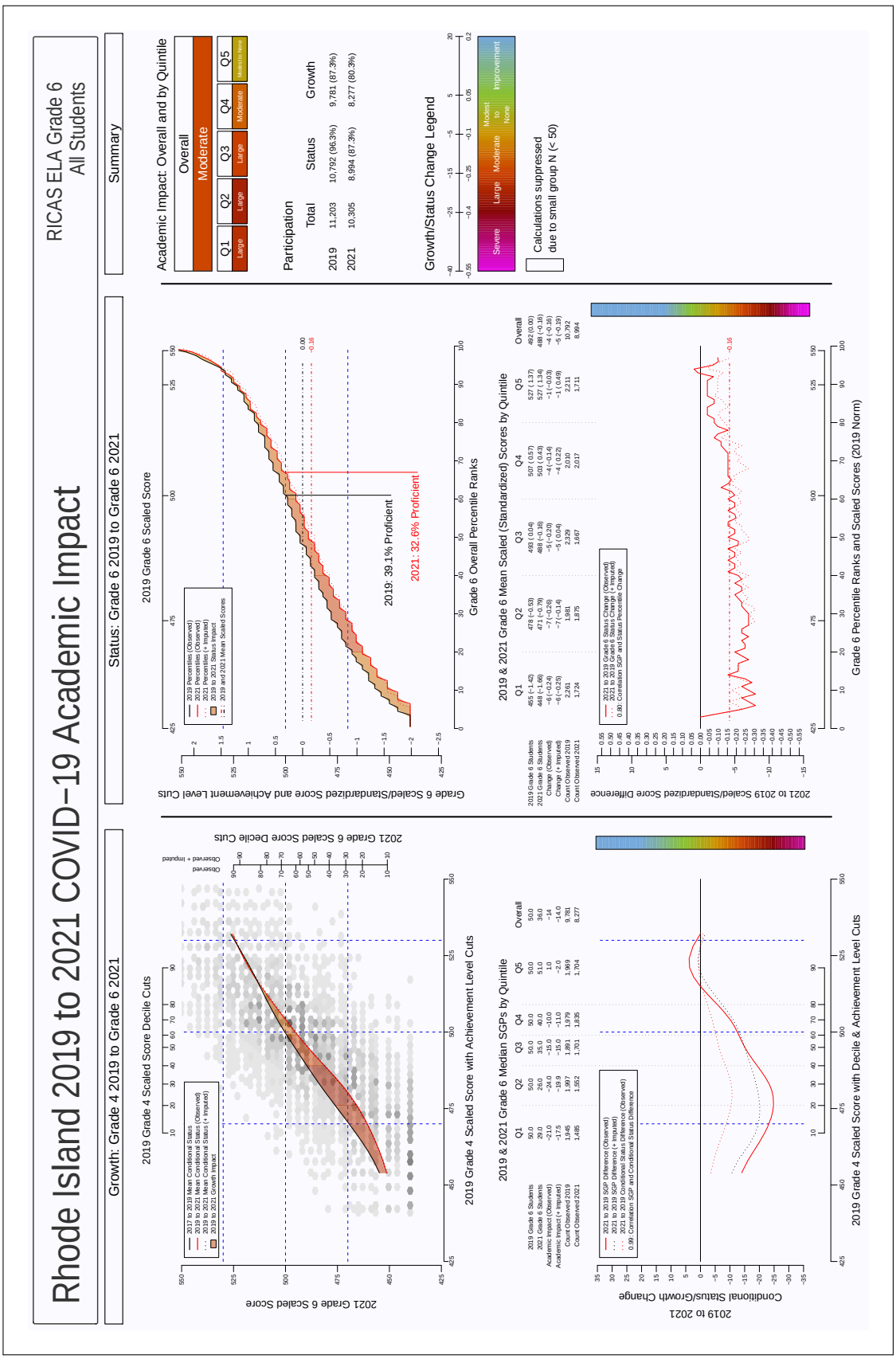


Figure 16: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA

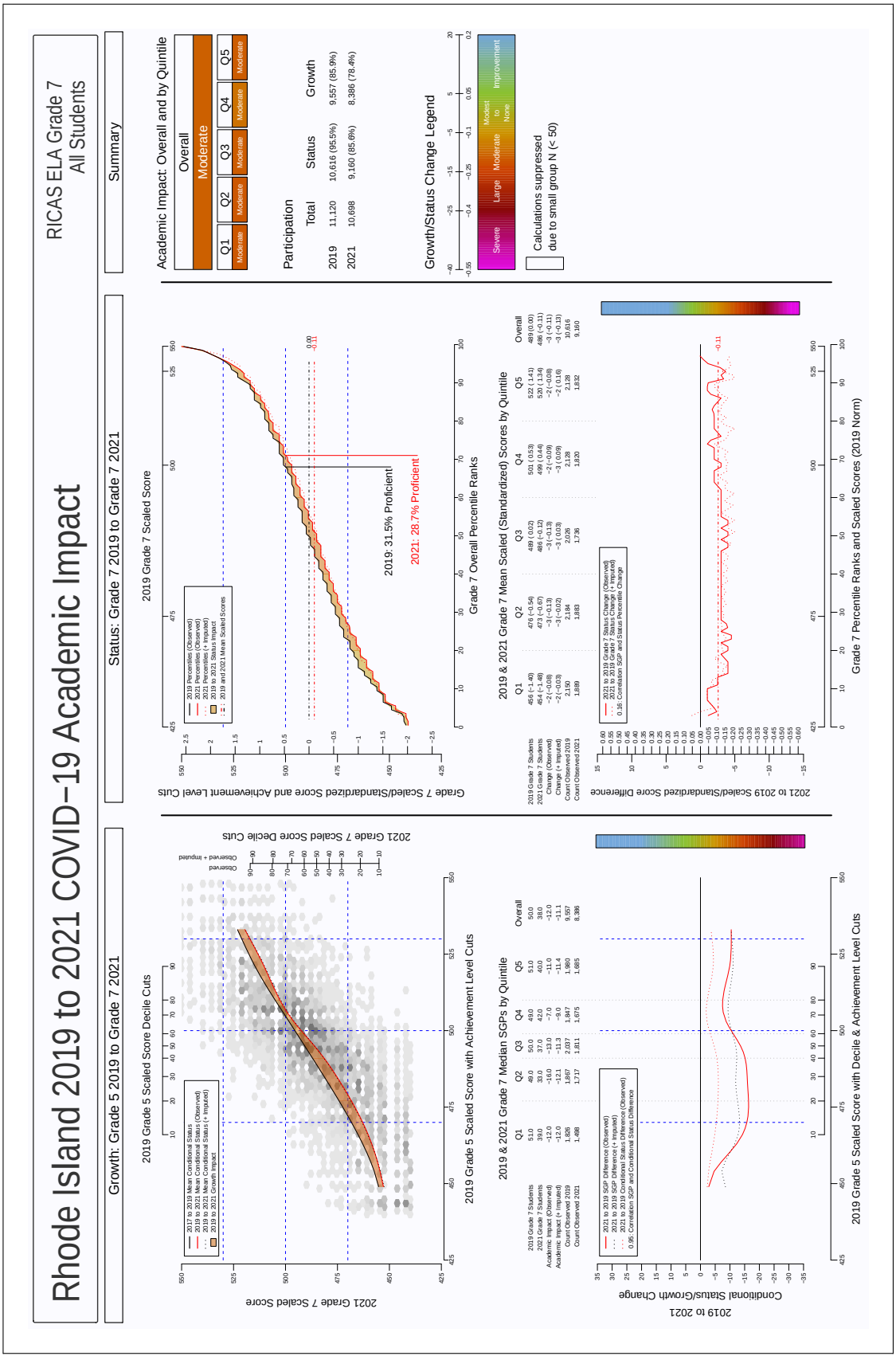


Figure 17: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA

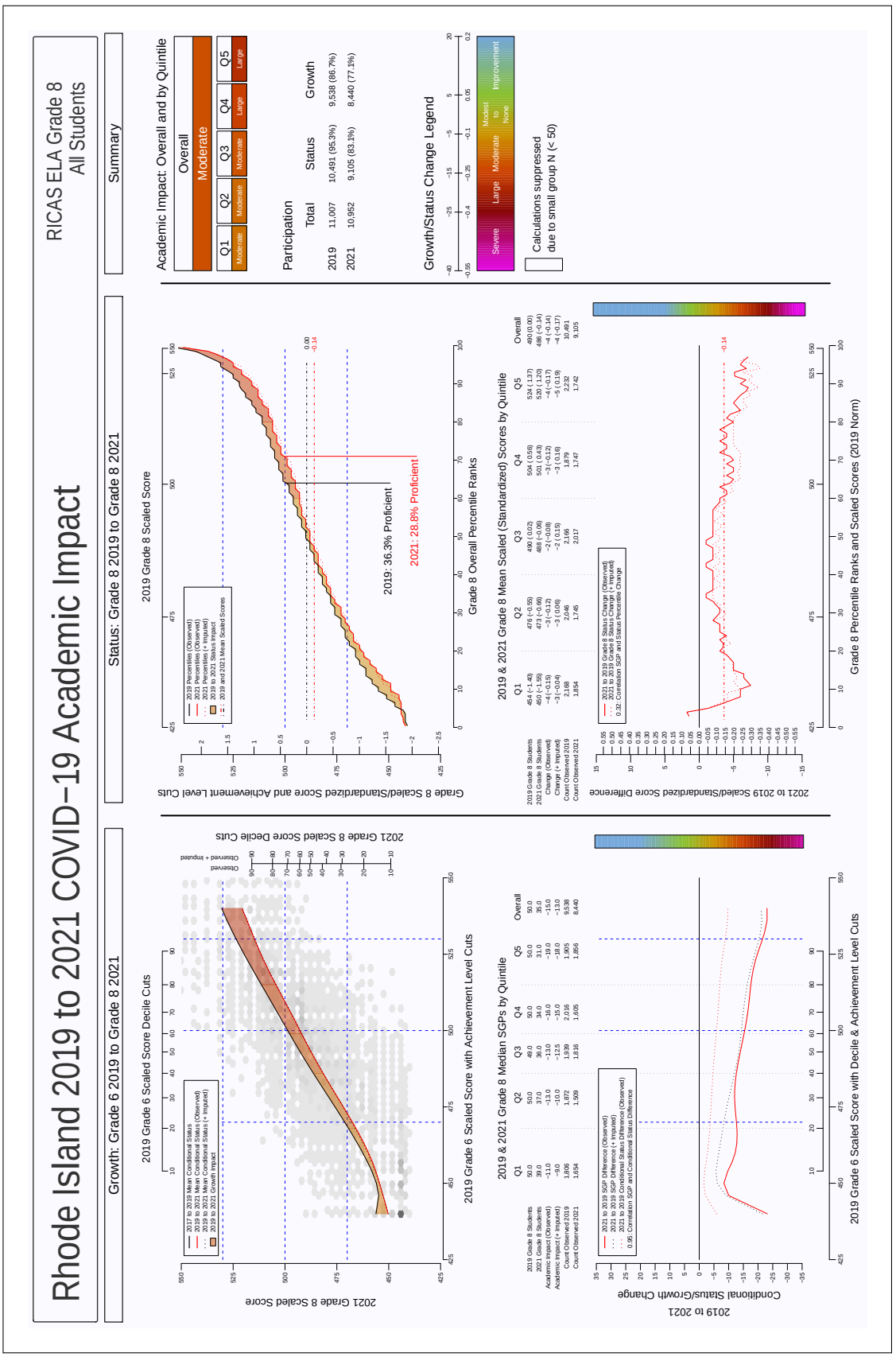


Figure 18: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA

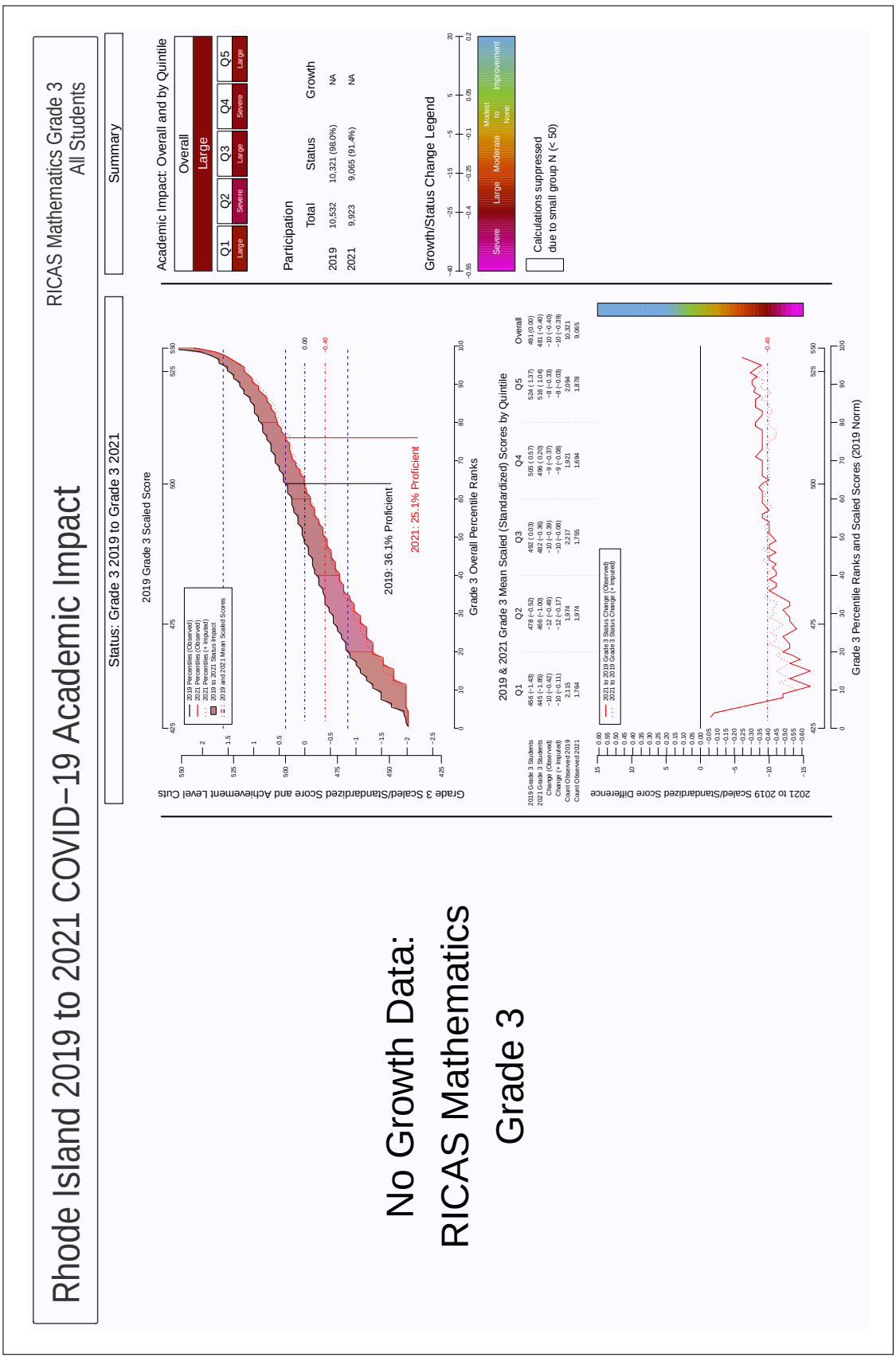


Figure 19: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics

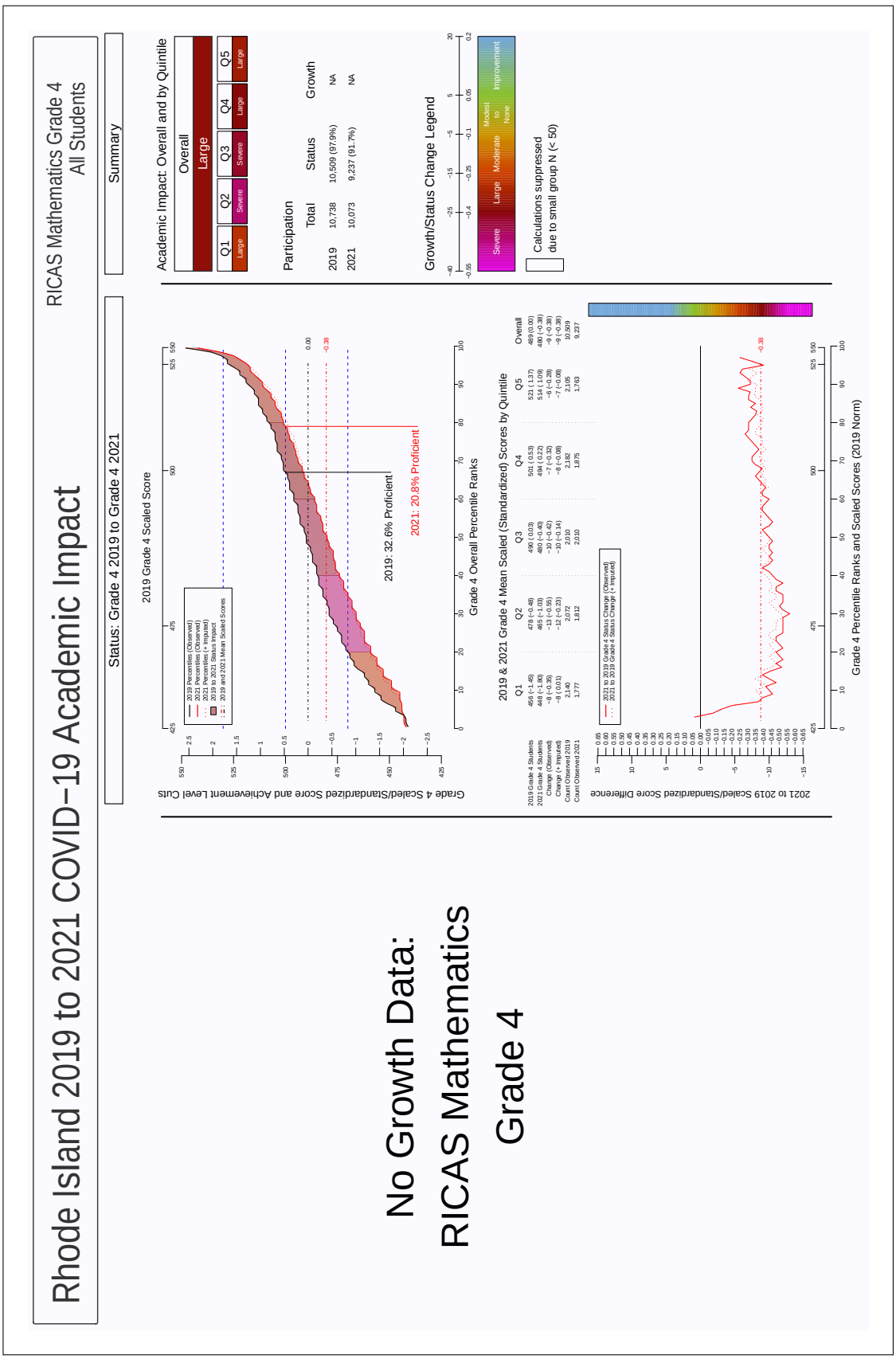


Figure 20: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics

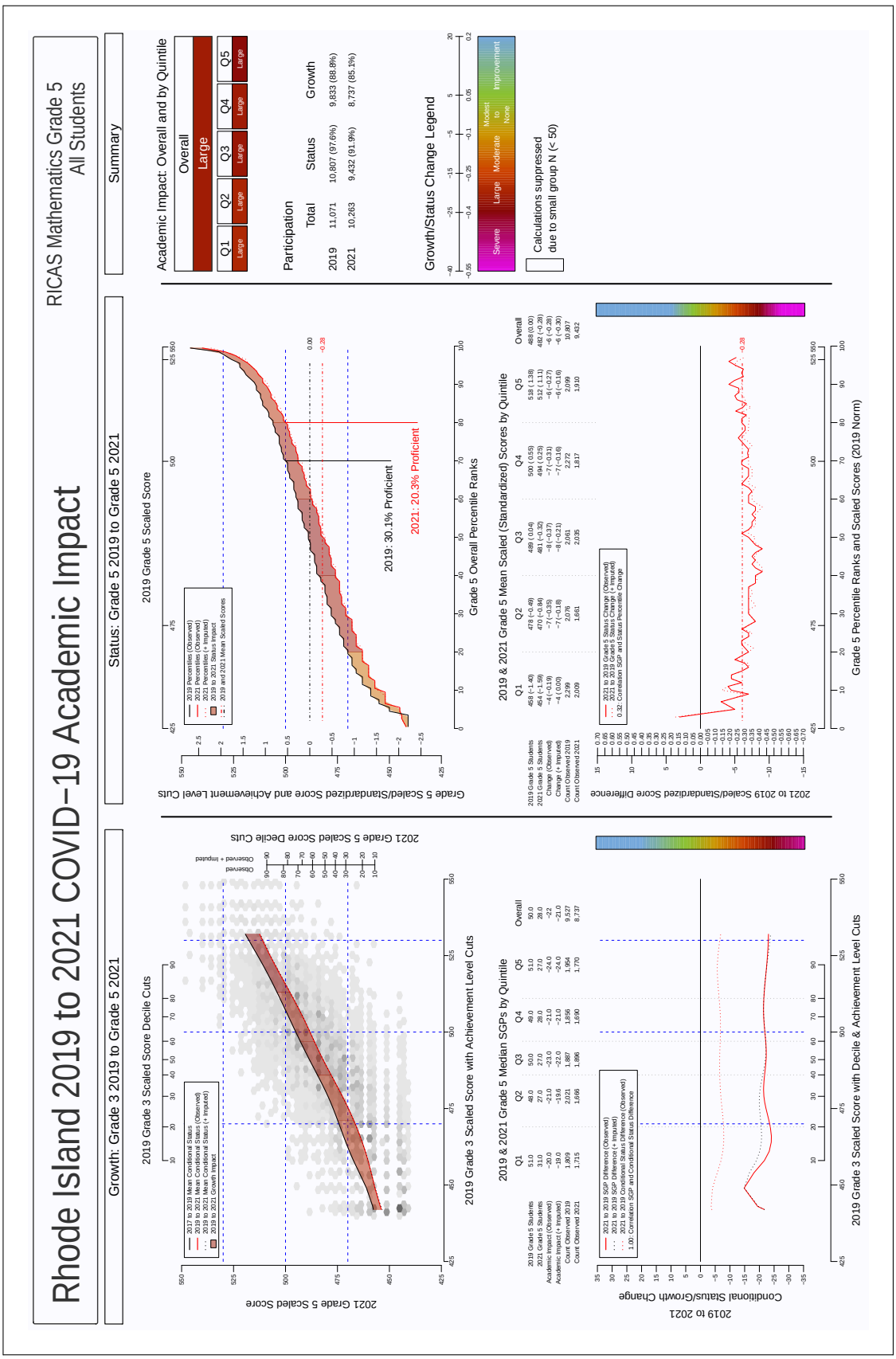


Figure 21: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics

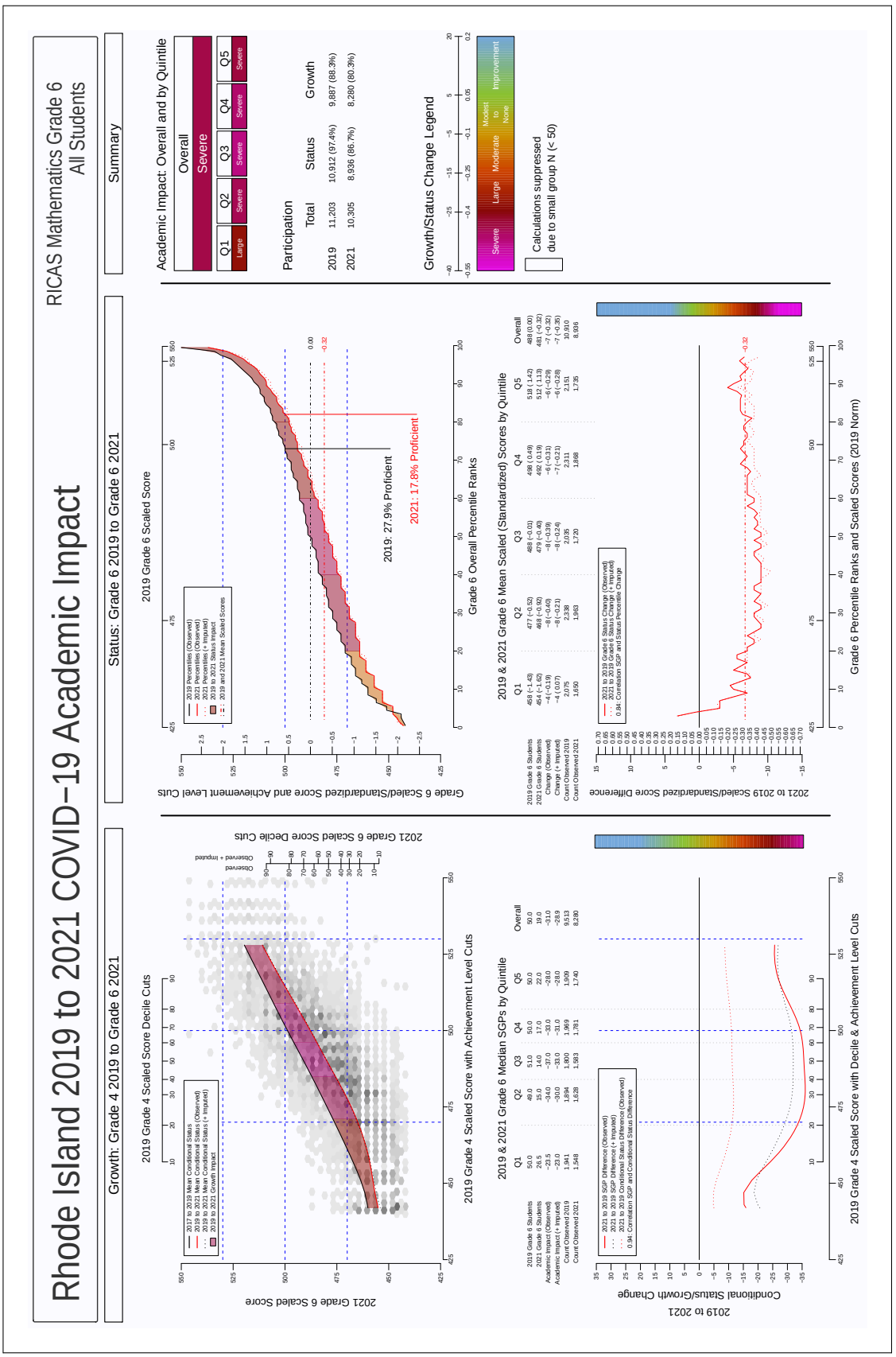


Figure 22: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics

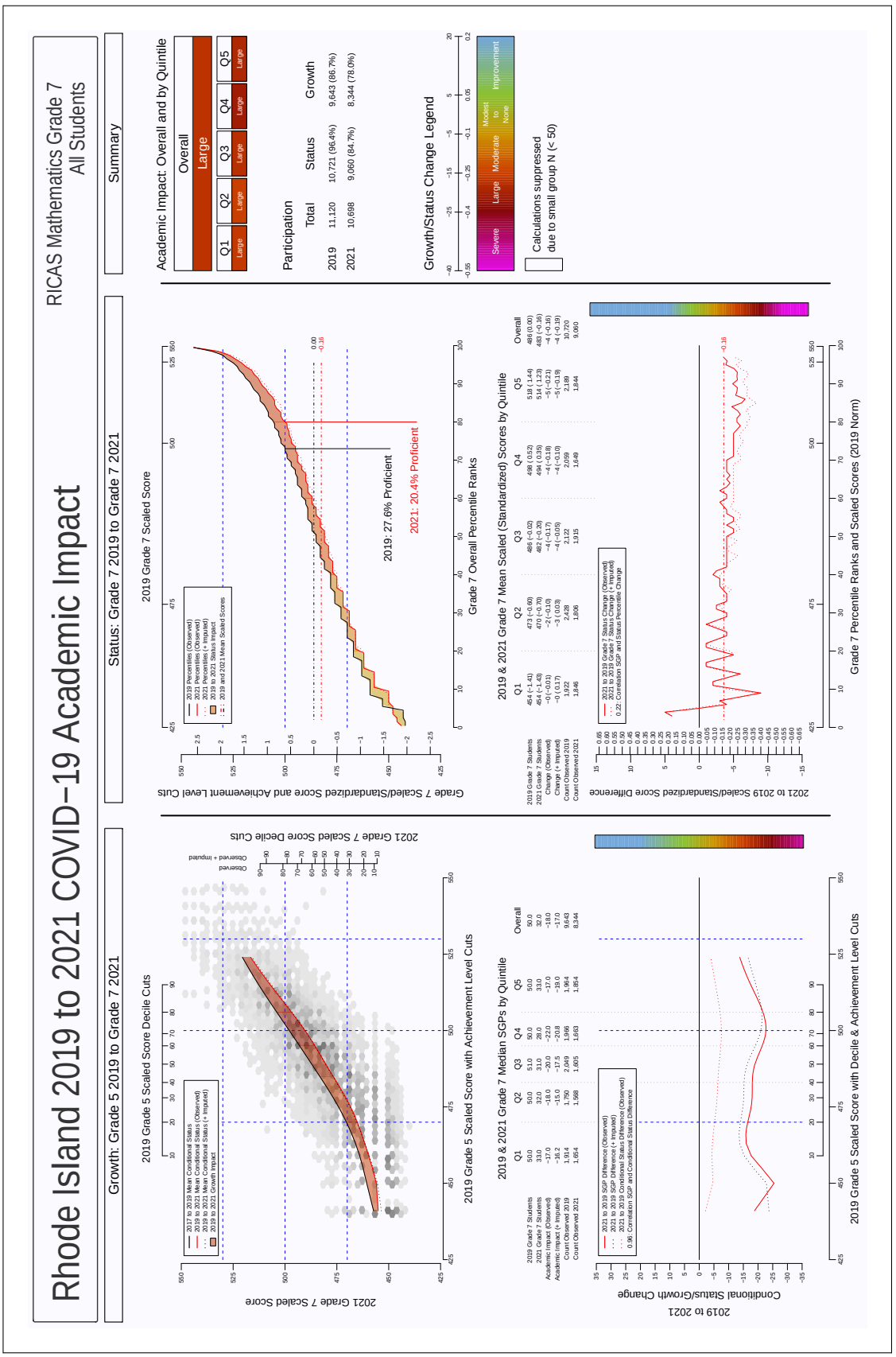


Figure 23: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics

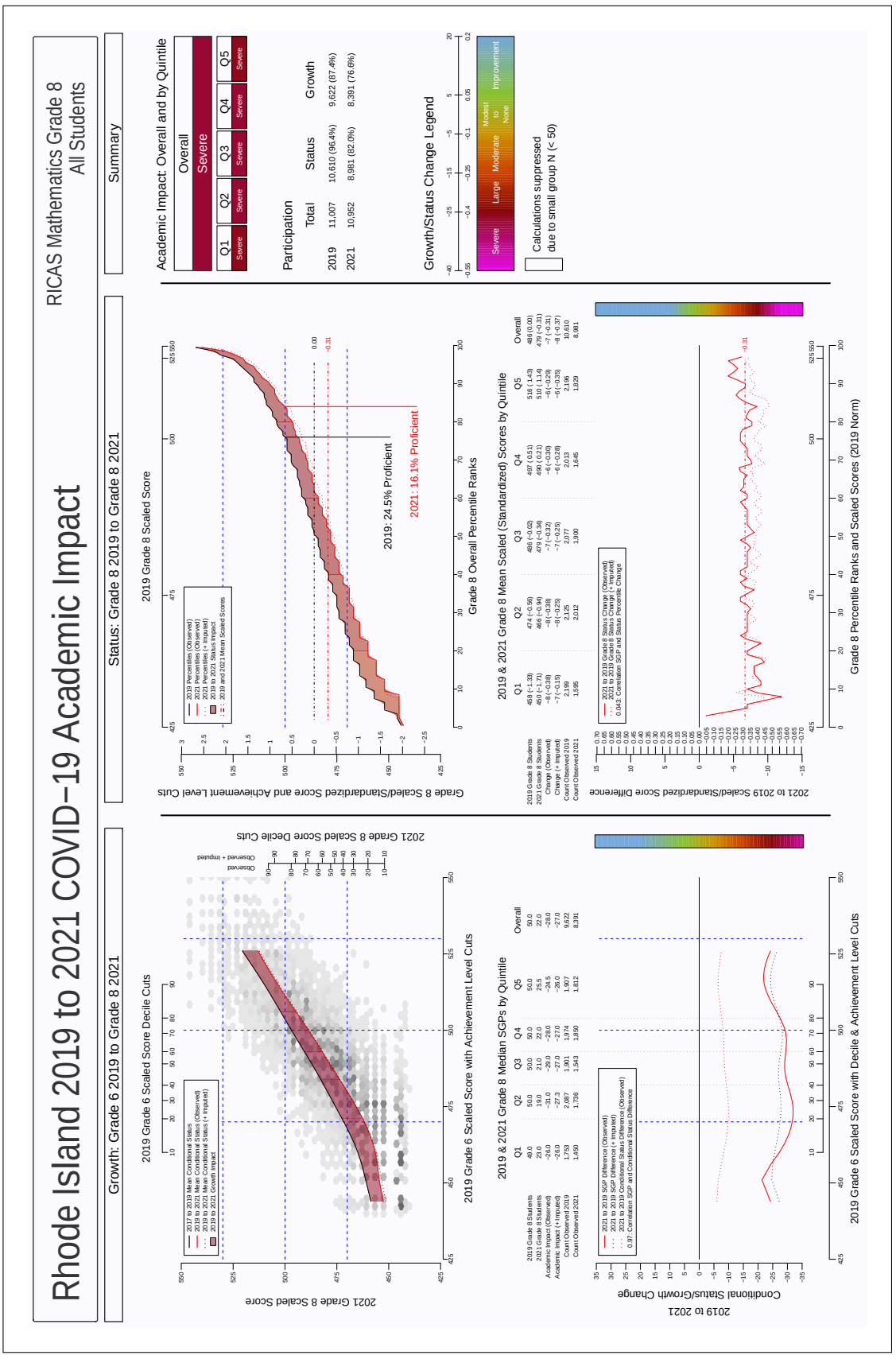


Figure 24: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics

Grade by Content Area by Ethnicity

The figures on the following pages illustrate pandemic related academic impact for students grouped by grade (3, 4, 5, 6, 7 or 8), content area and ethnicity (ELA or mathematics for Asian, African American, Hispanic, and white students)

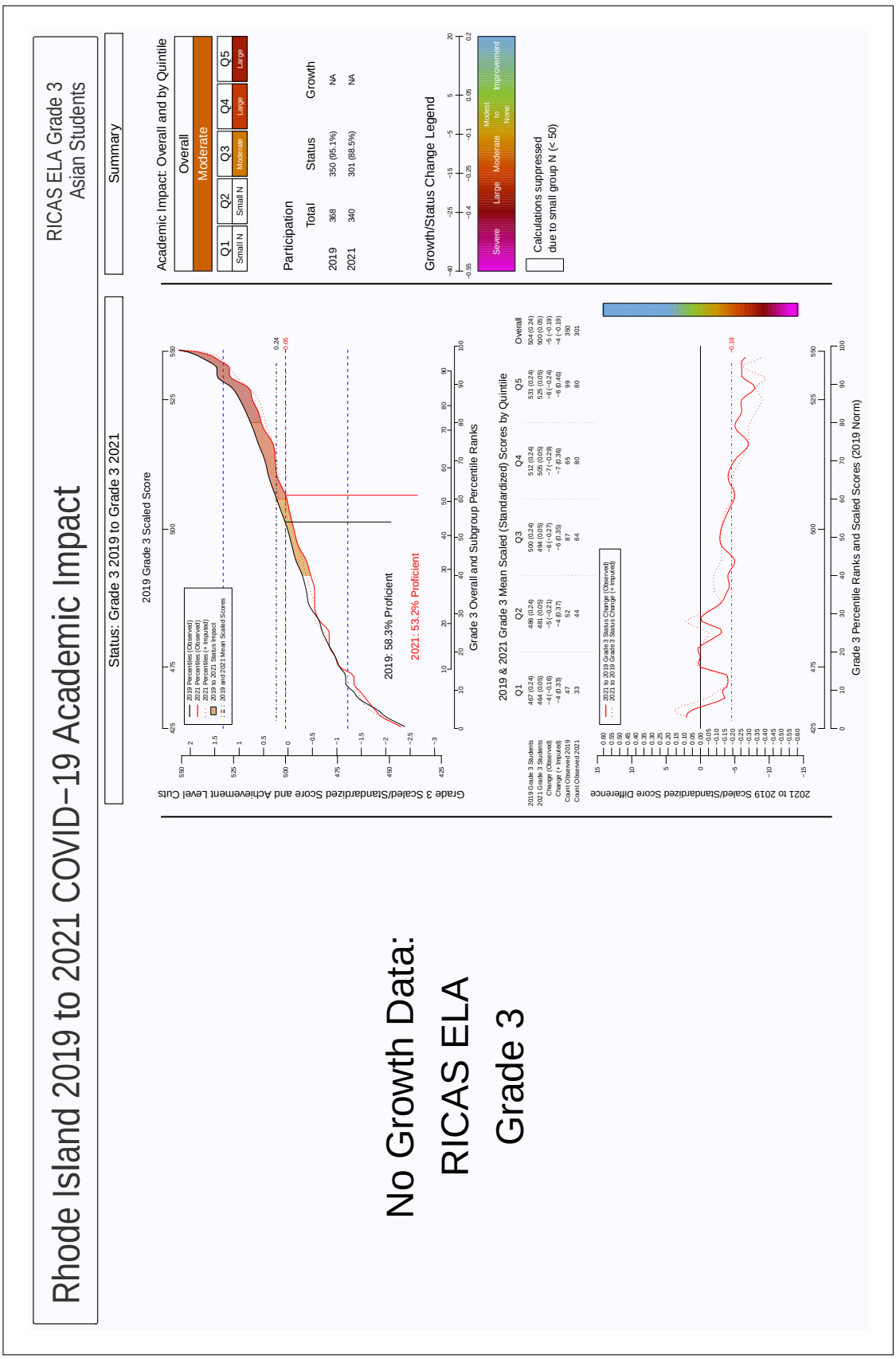


Figure 25: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, Asian students

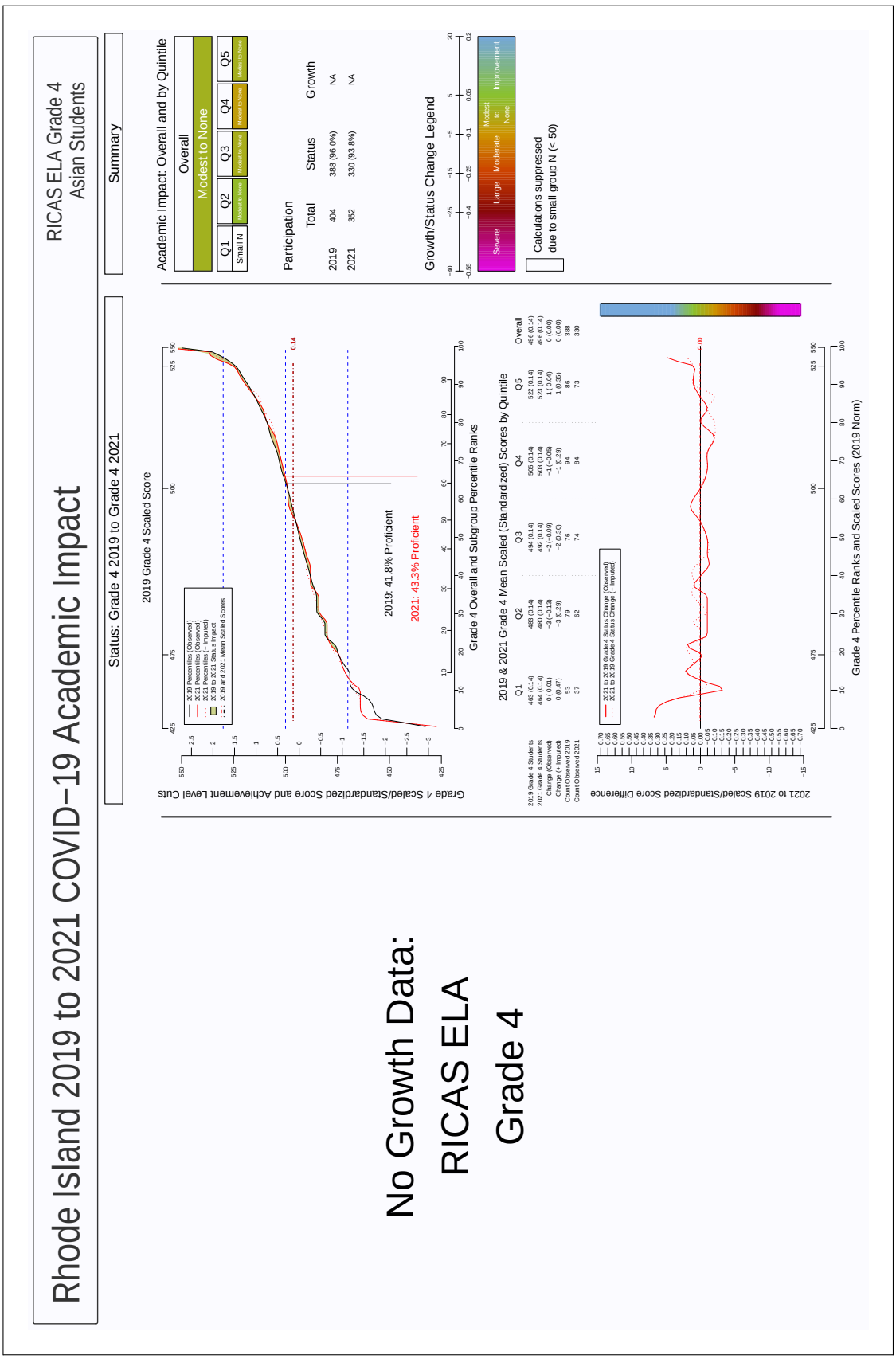


Figure 26: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, Asian students

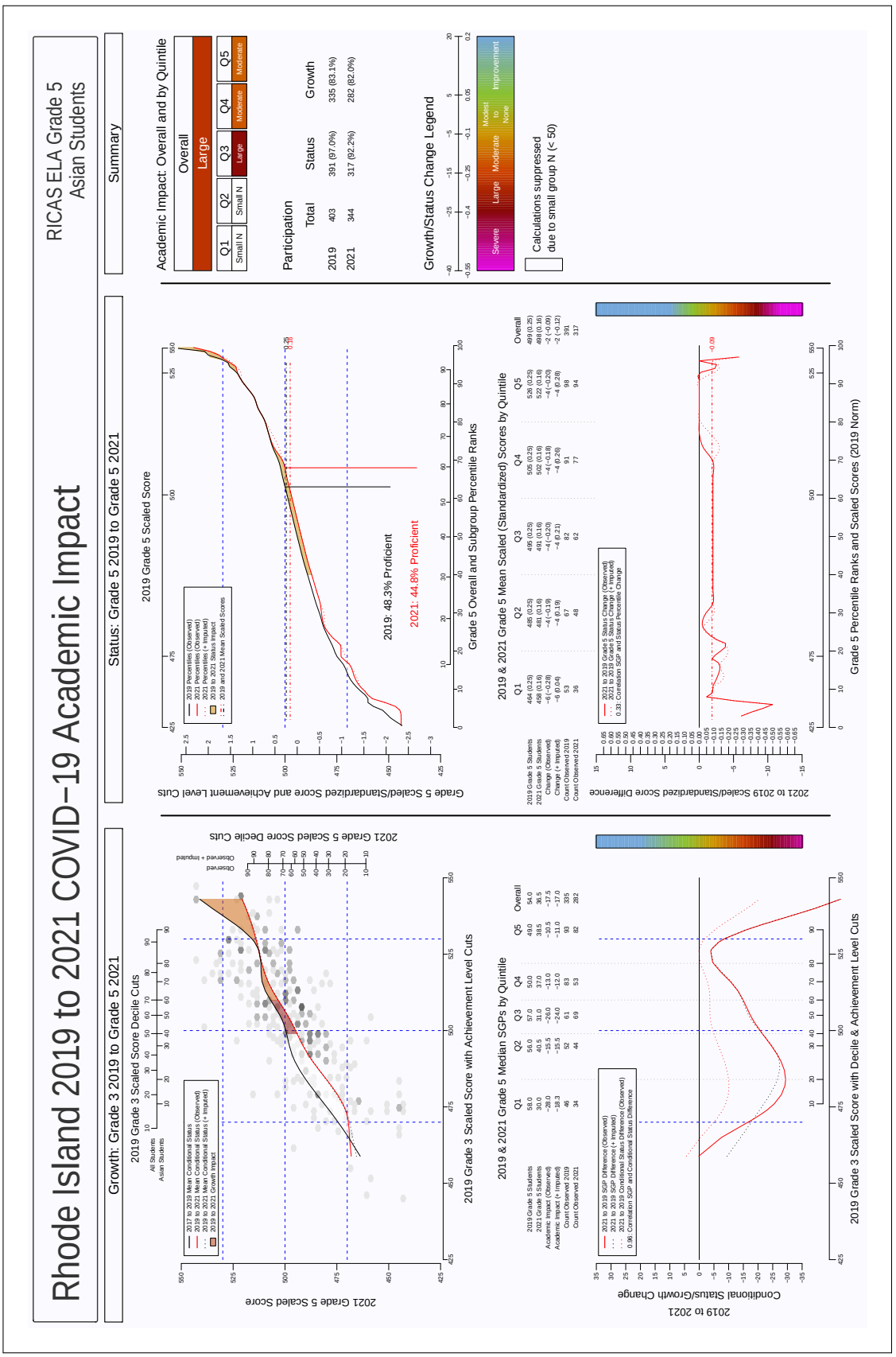


Figure 27: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, Asian students

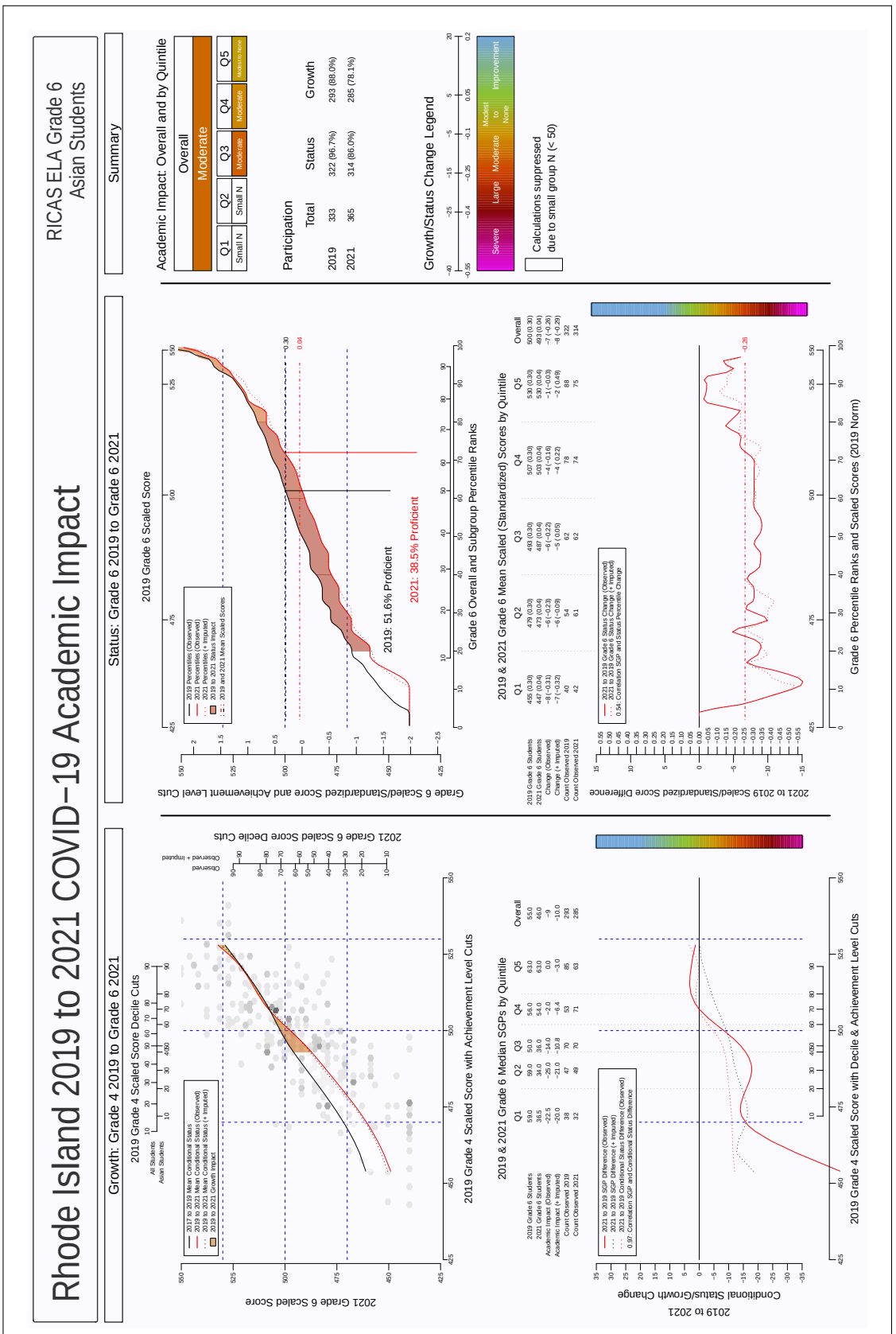


Figure 28: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, Asian students

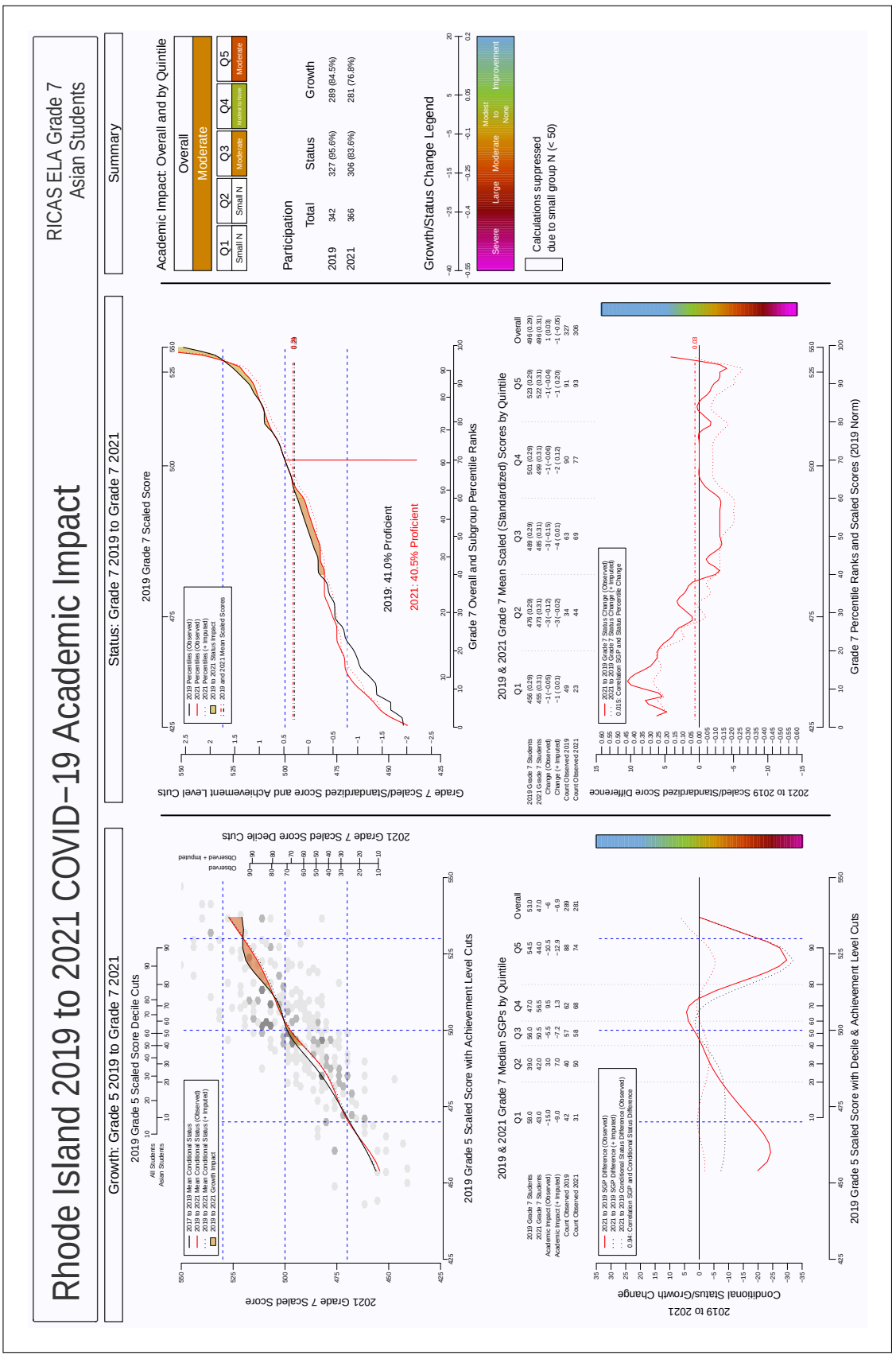


Figure 29: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, Asian students

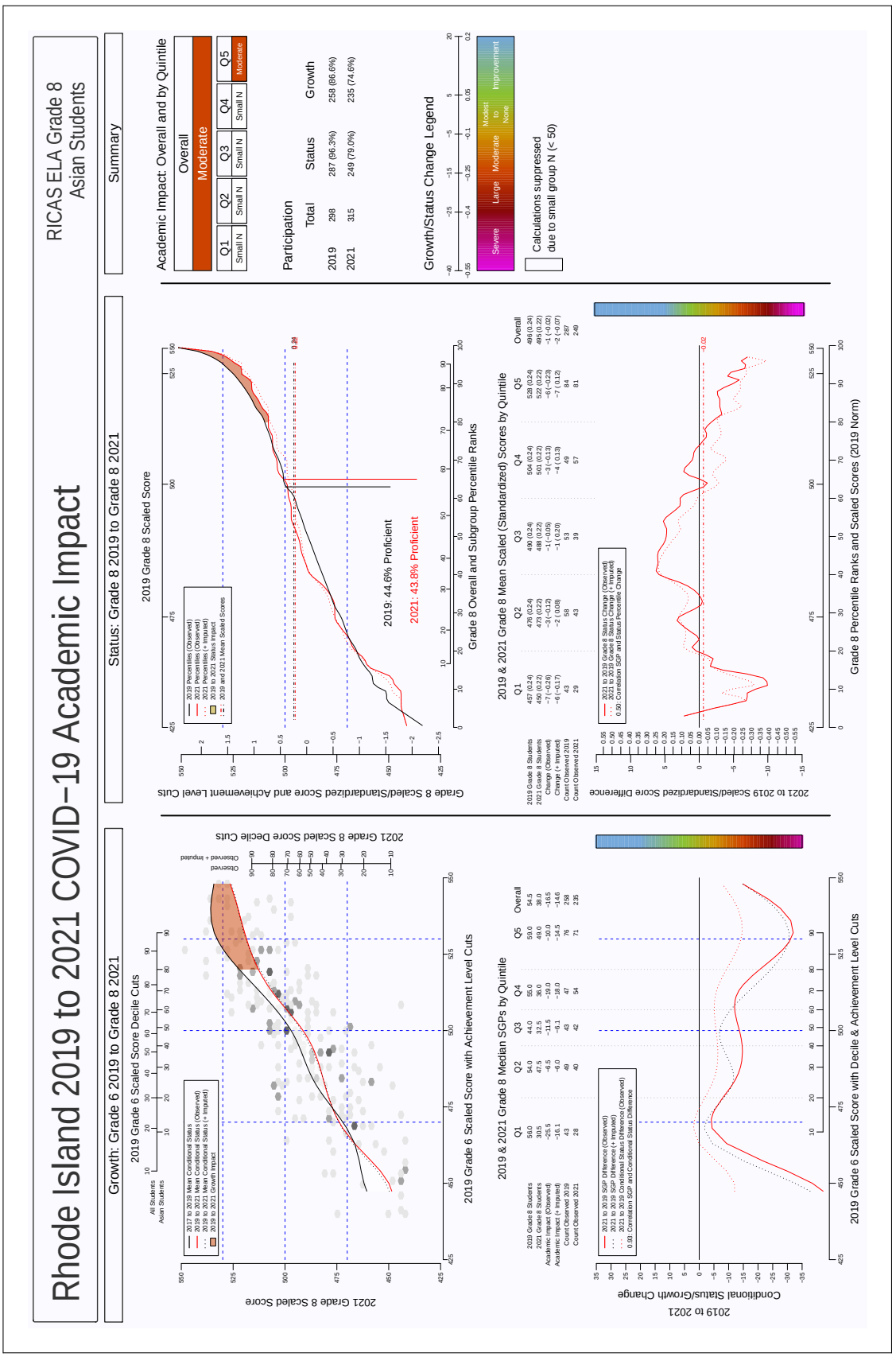


Figure 30: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, Asian students

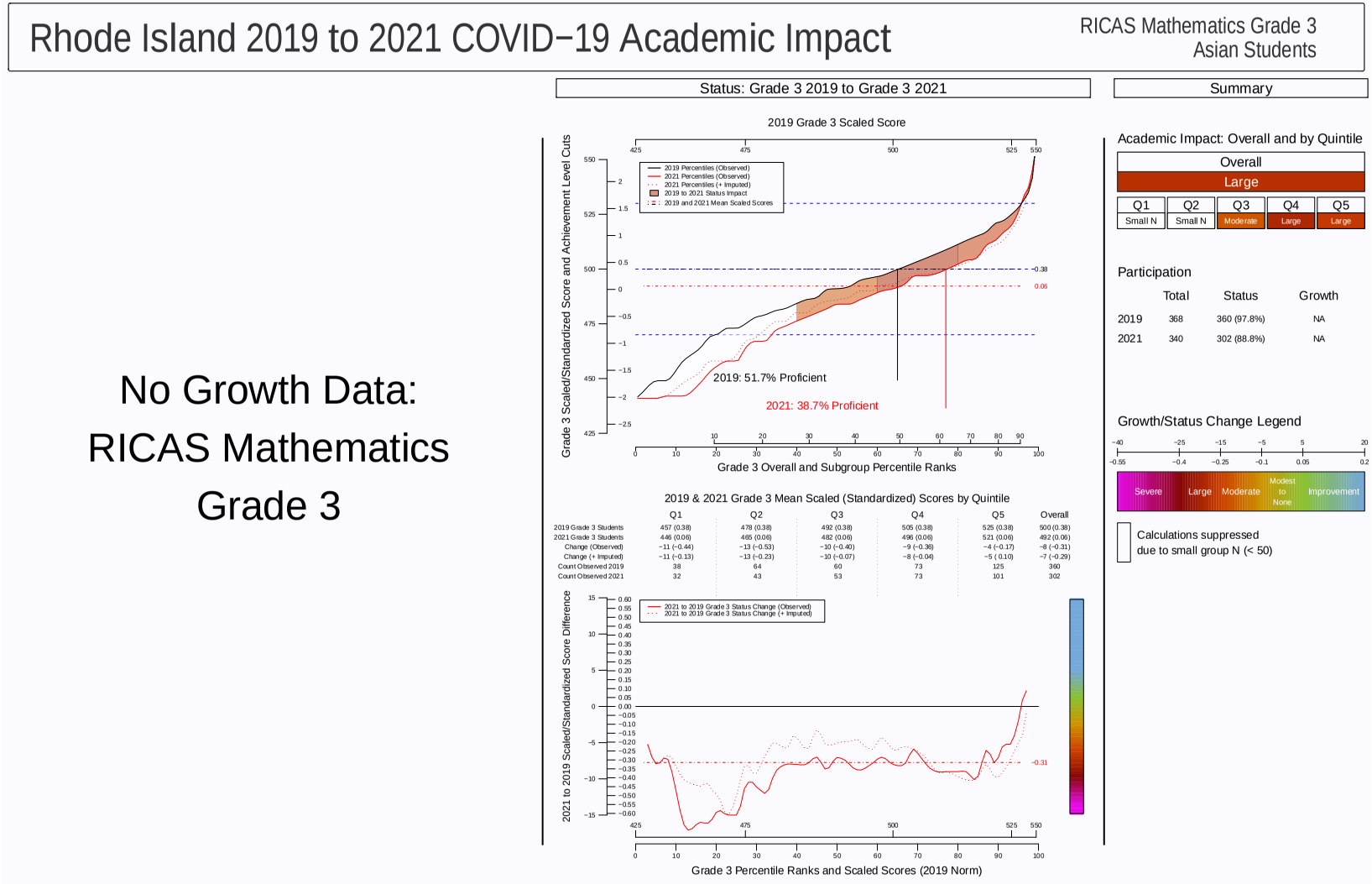


Figure 31: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, Asian students

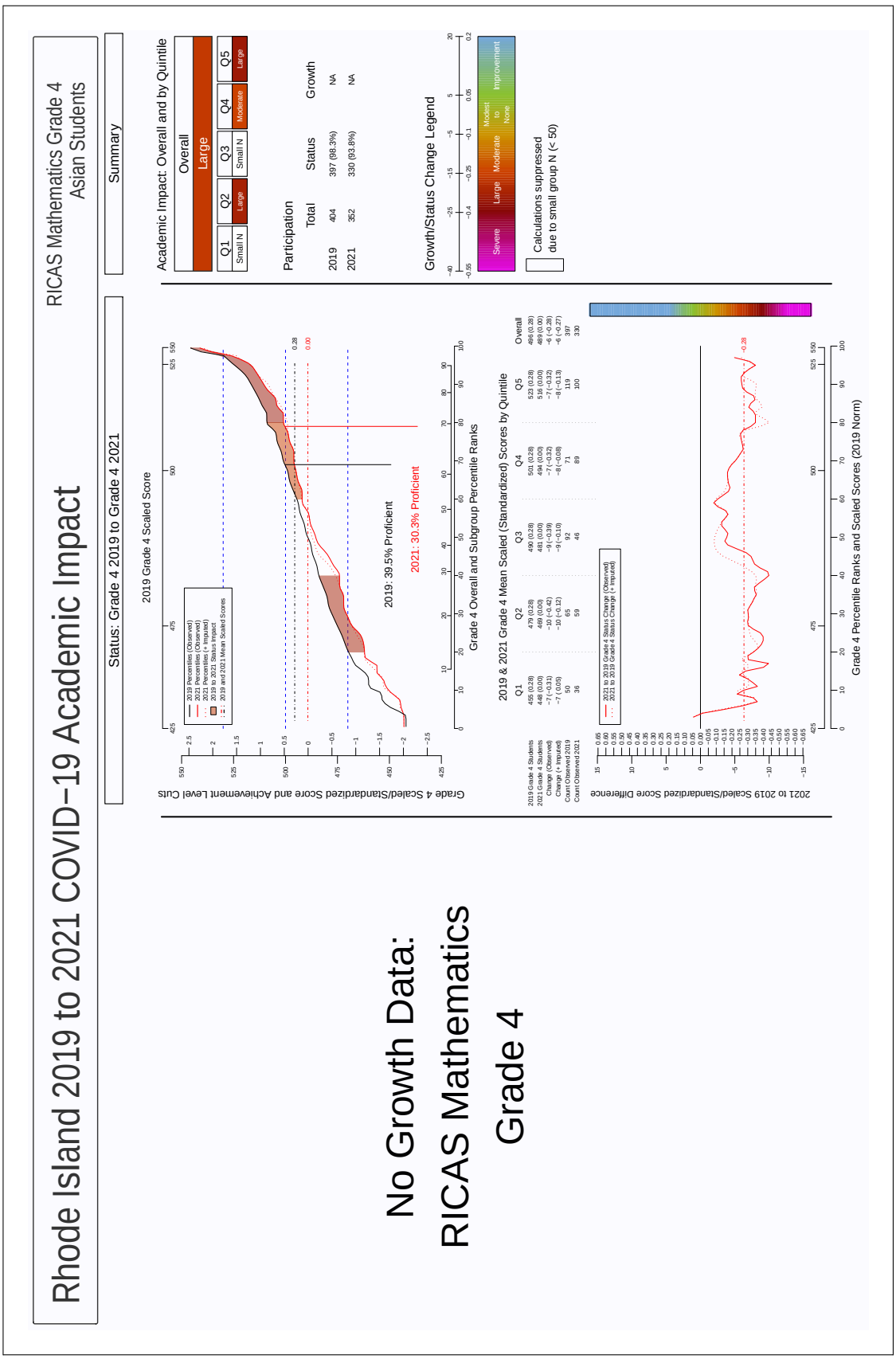


Figure 32: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, Asian students

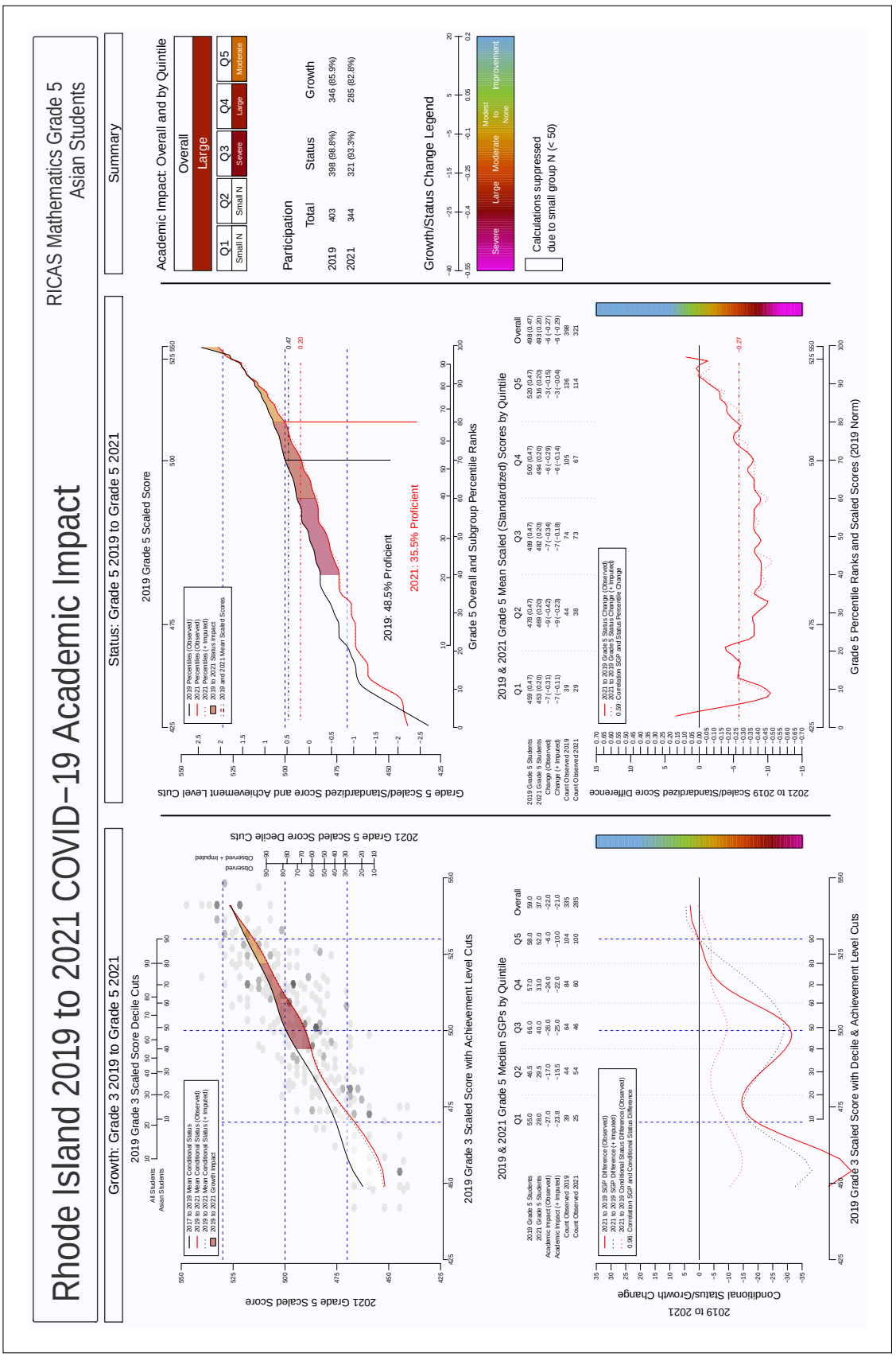


Figure 33: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, Asian students

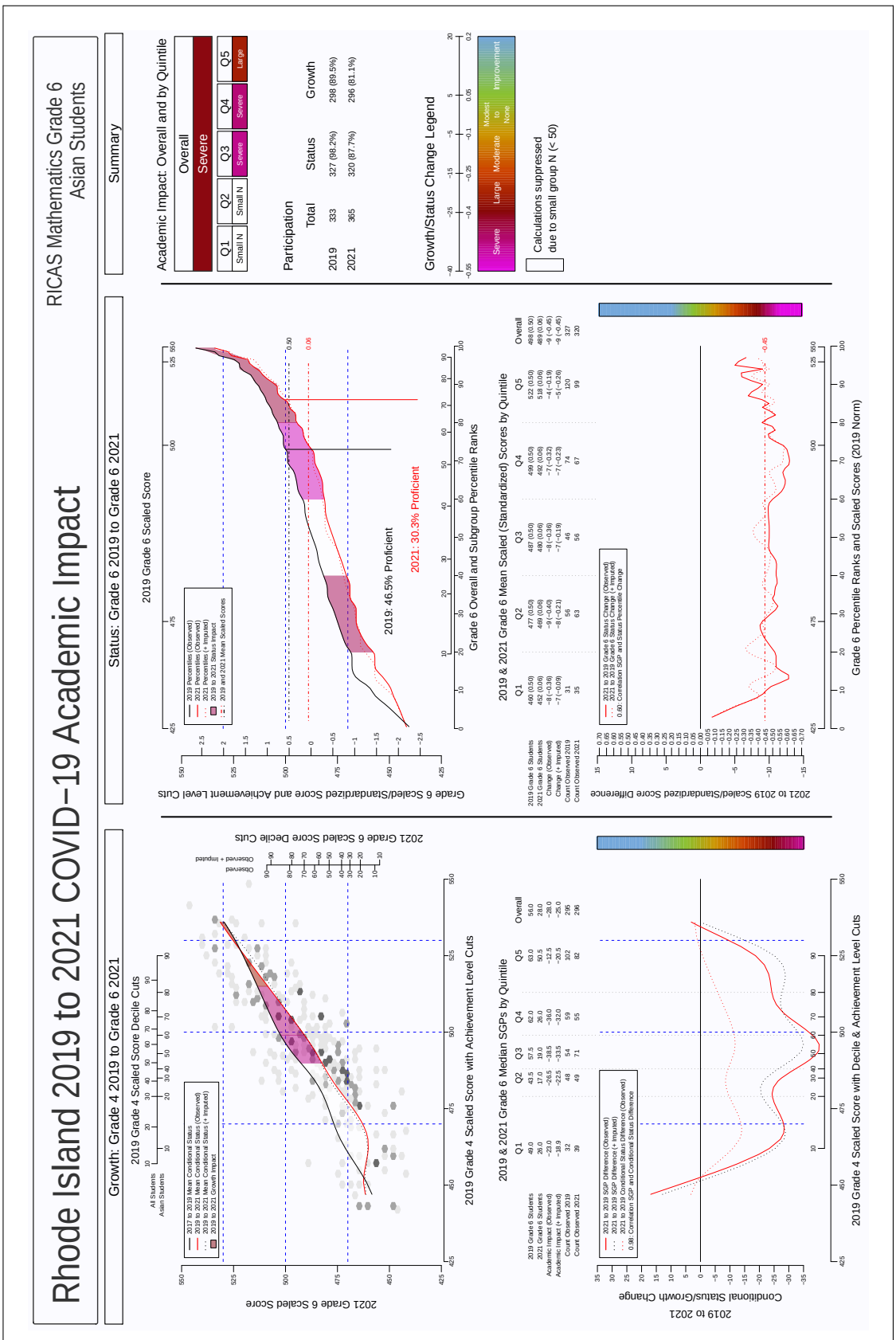


Figure 34: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, Asian students

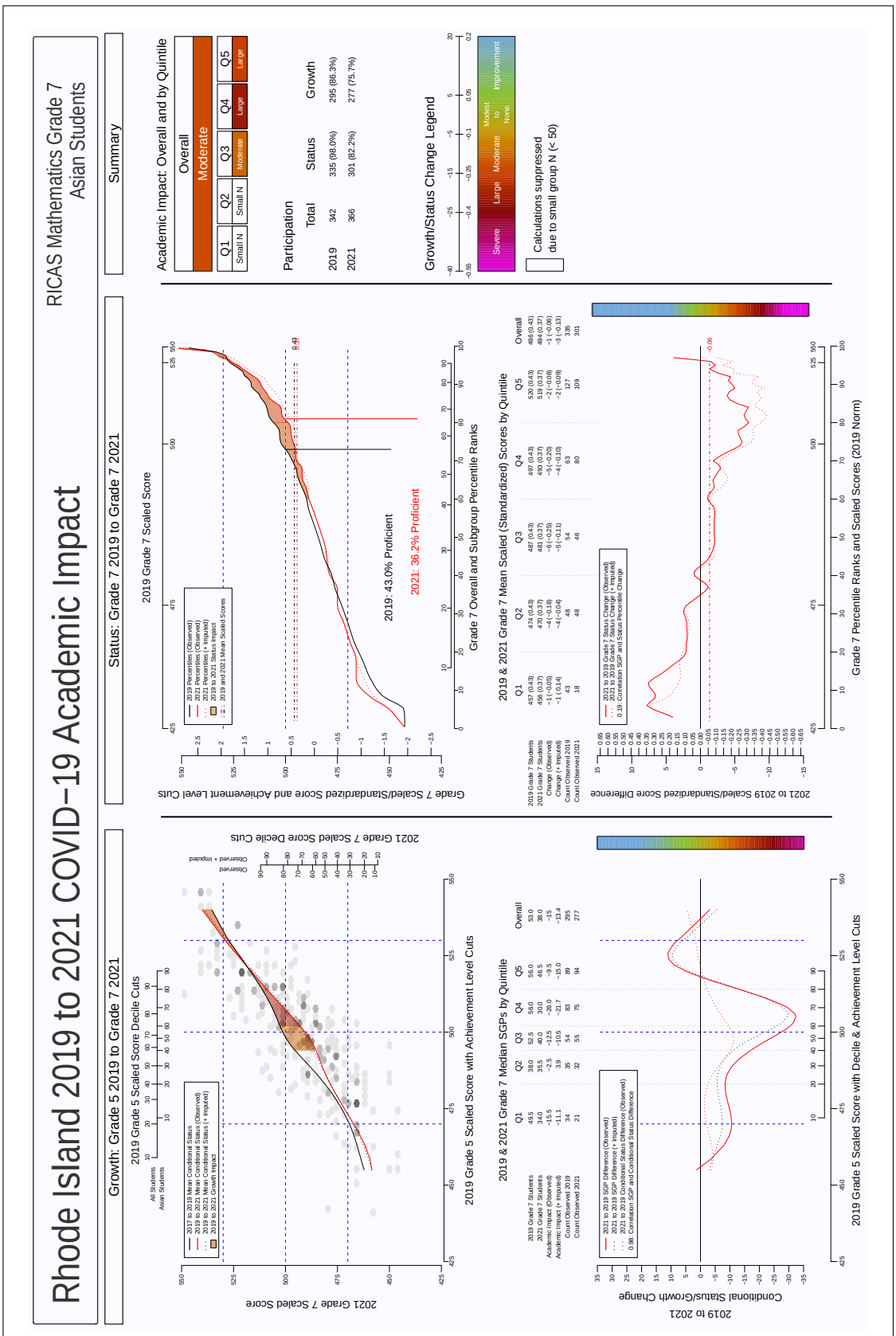


Figure 35: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, Asian students

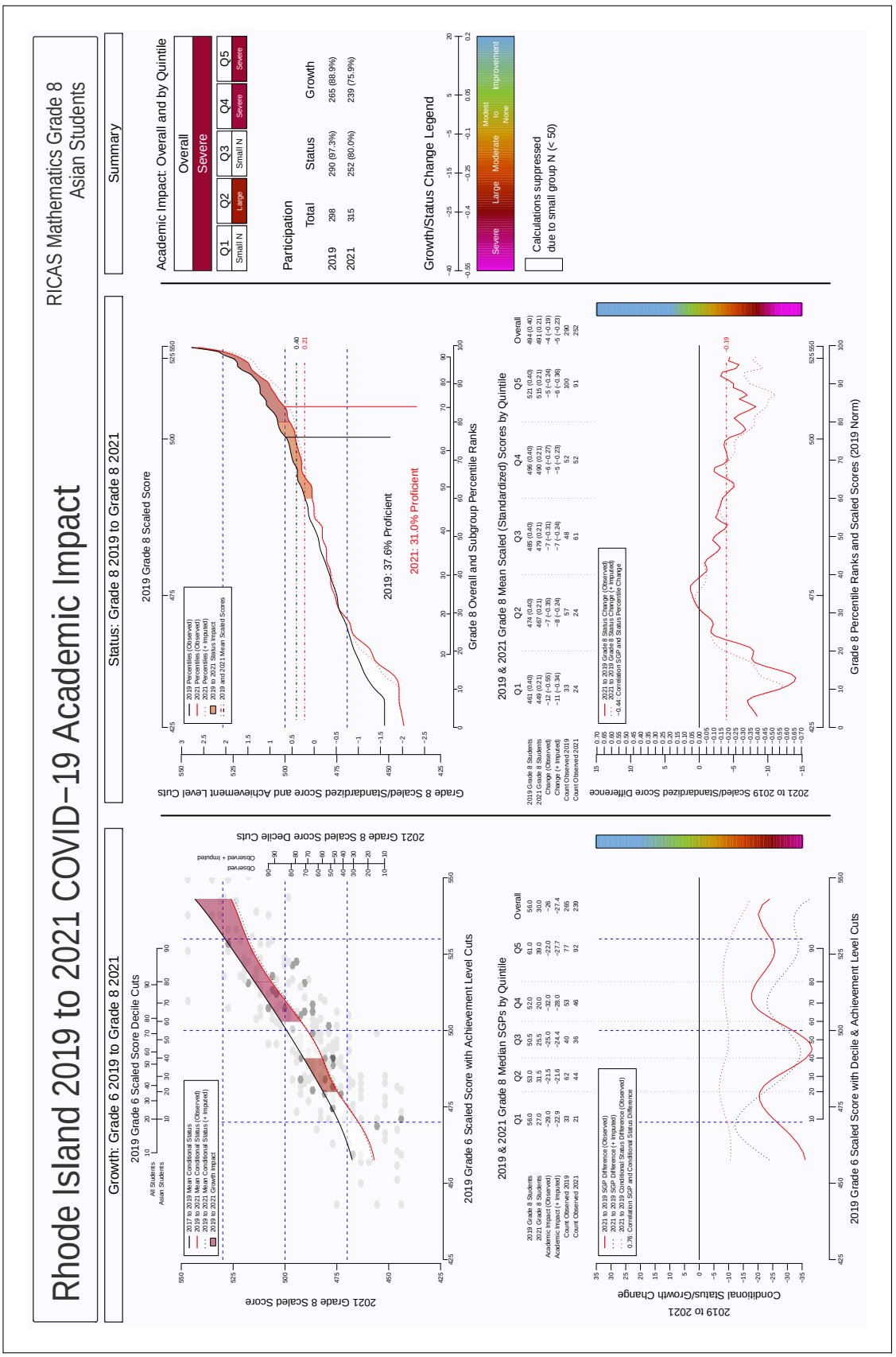


Figure 36: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, Asian students

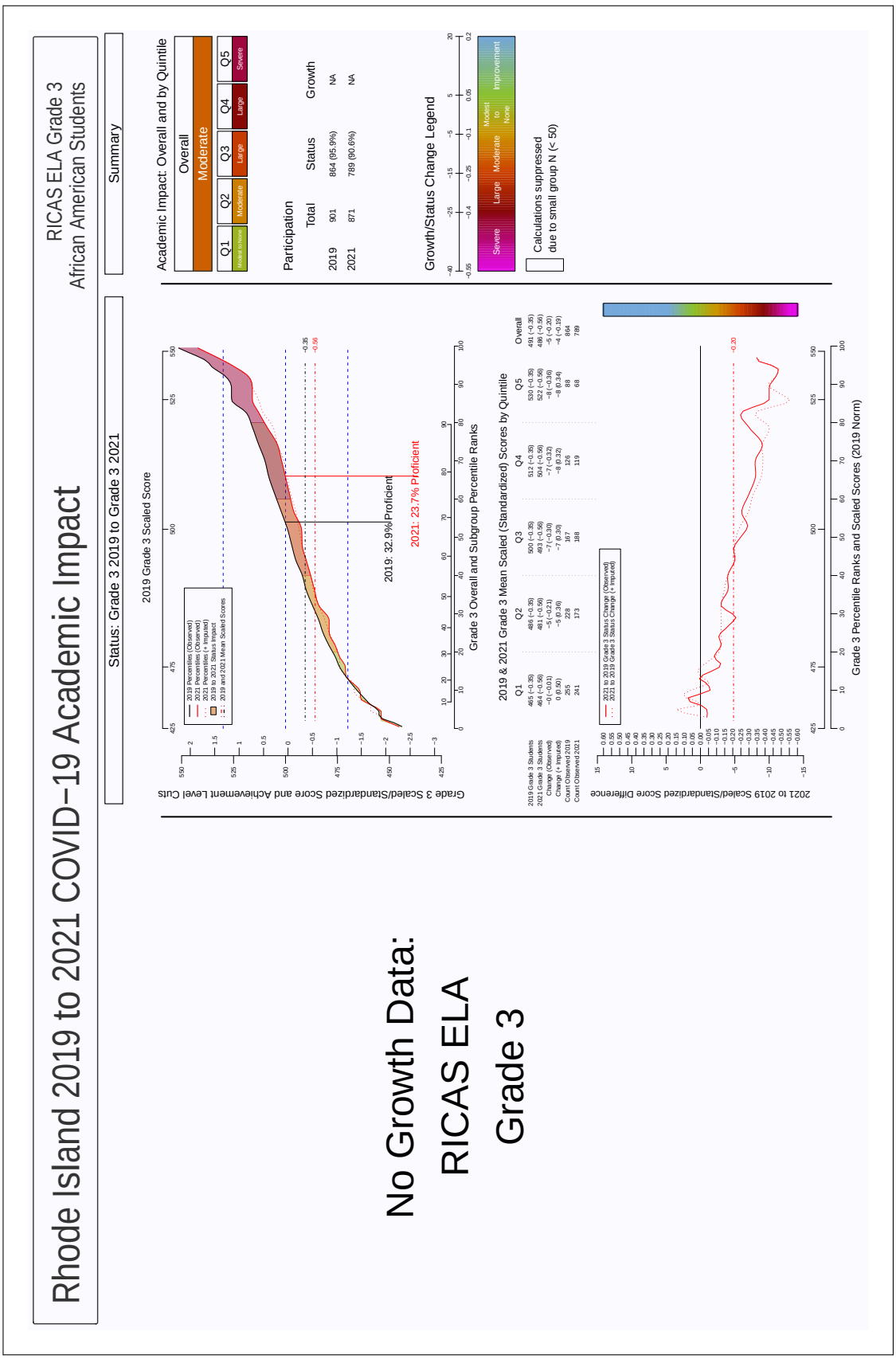


Figure 37: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, African American students

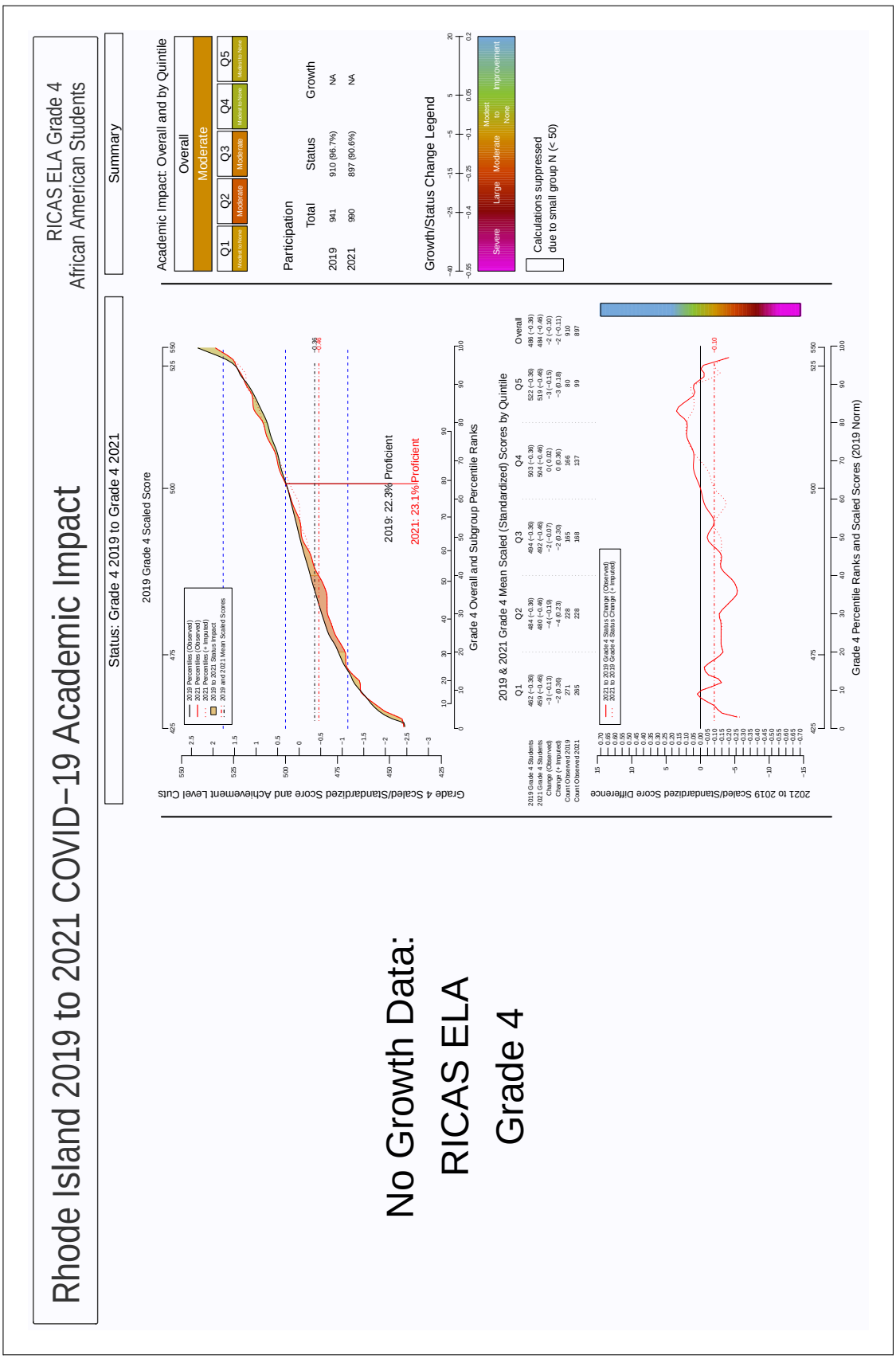


Figure 38: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, African American students

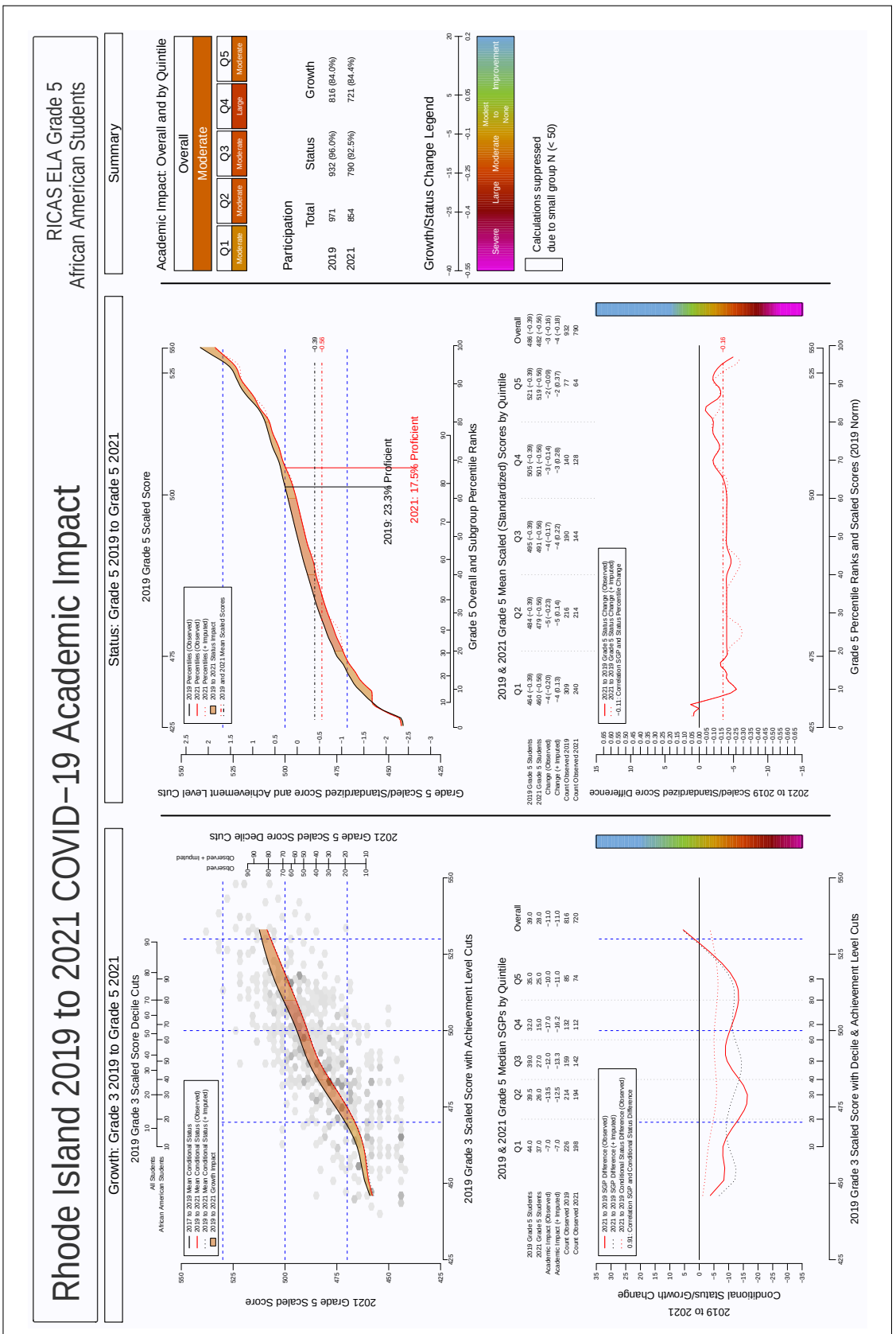


Figure 39: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, African American students

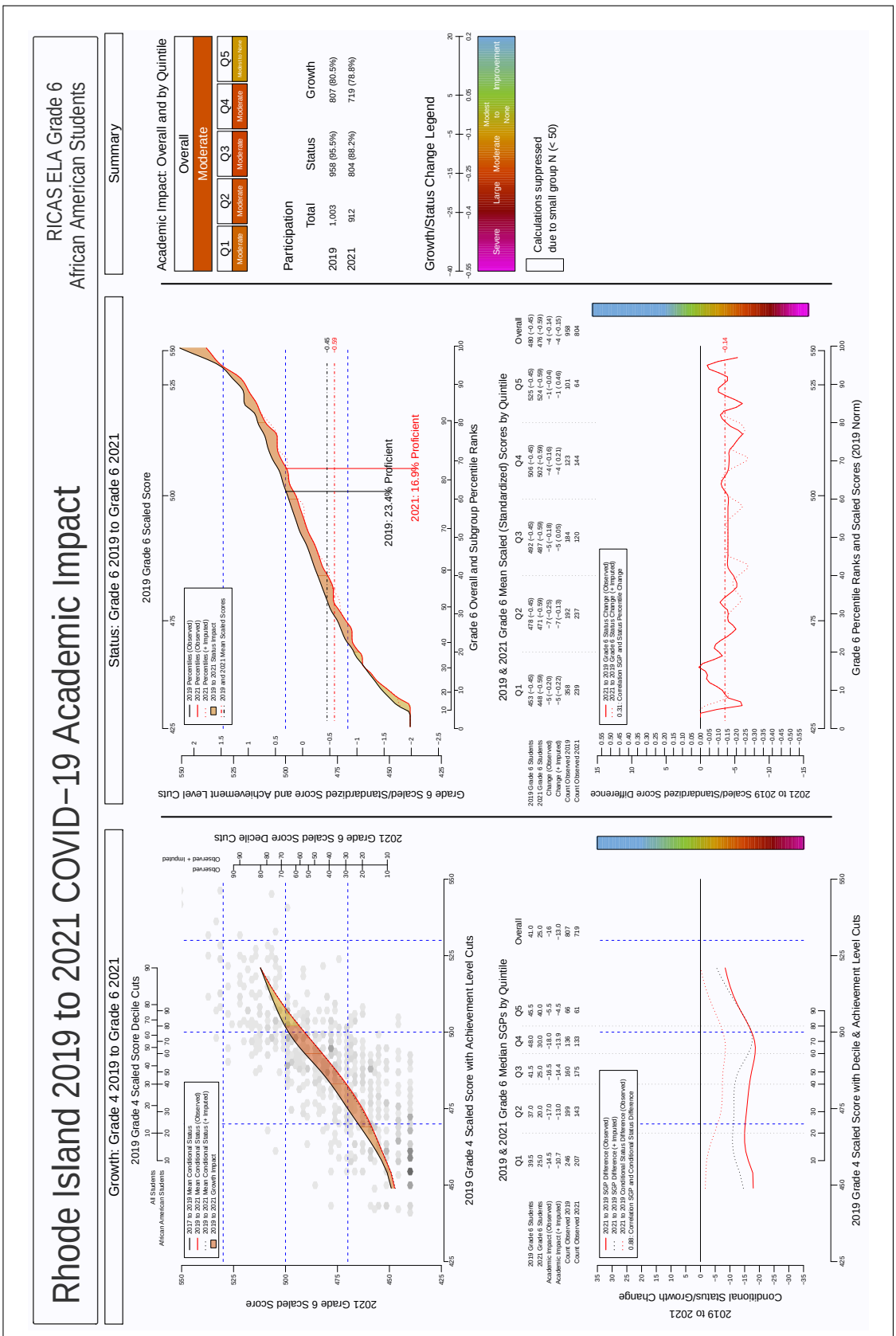


Figure 40: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, African American students

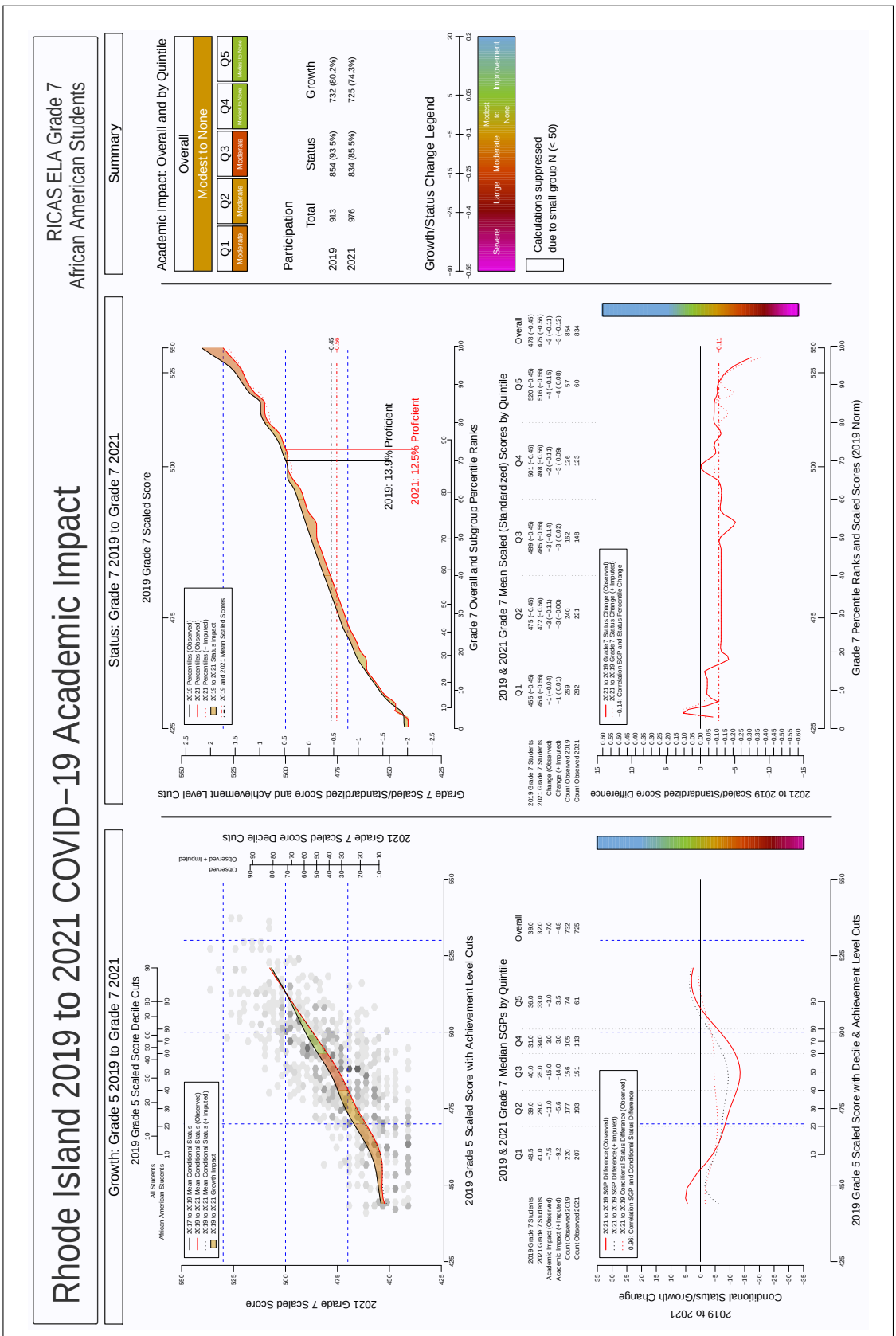


Figure 41: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, African American students

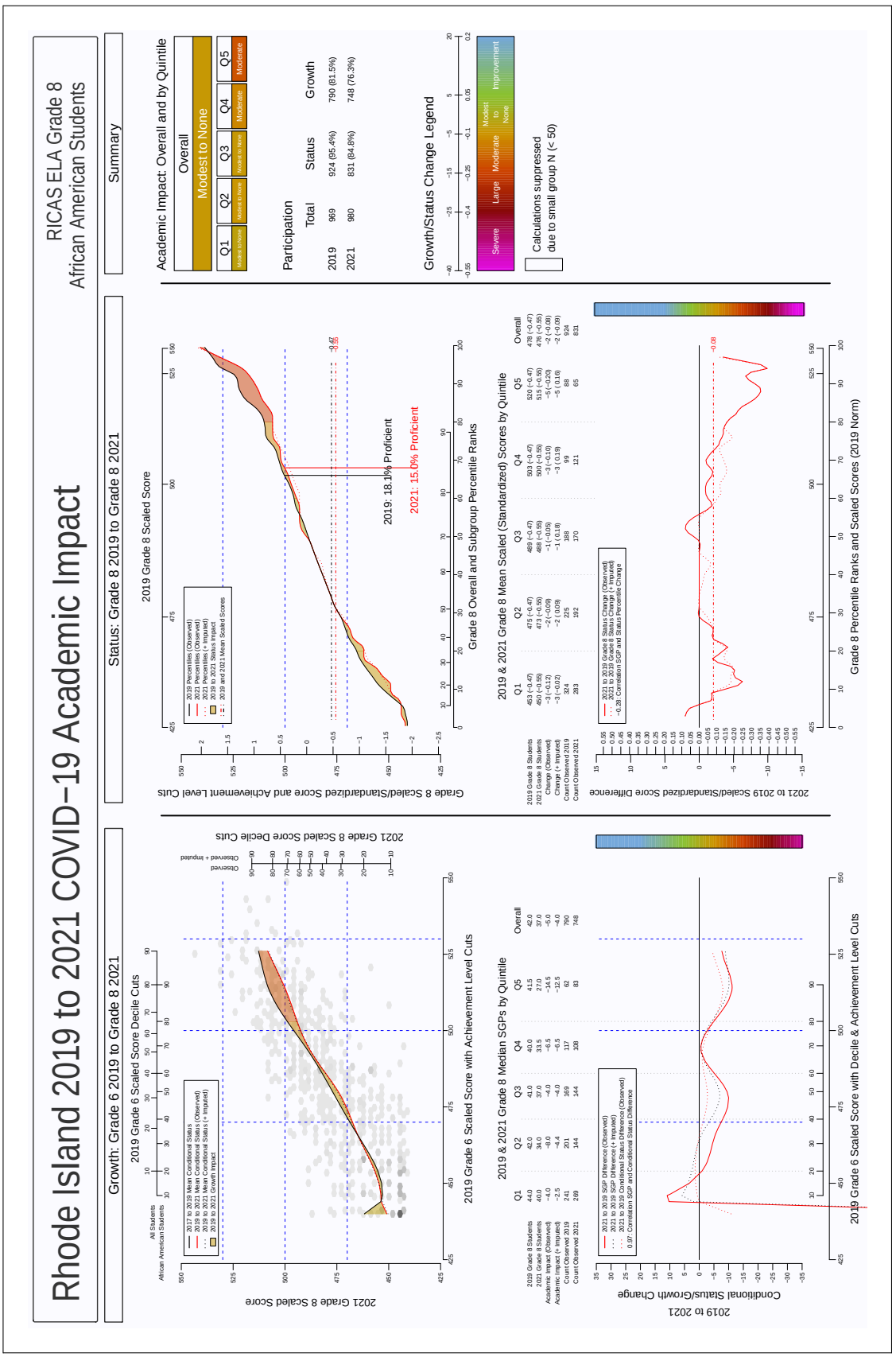


Figure 42: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, African American students

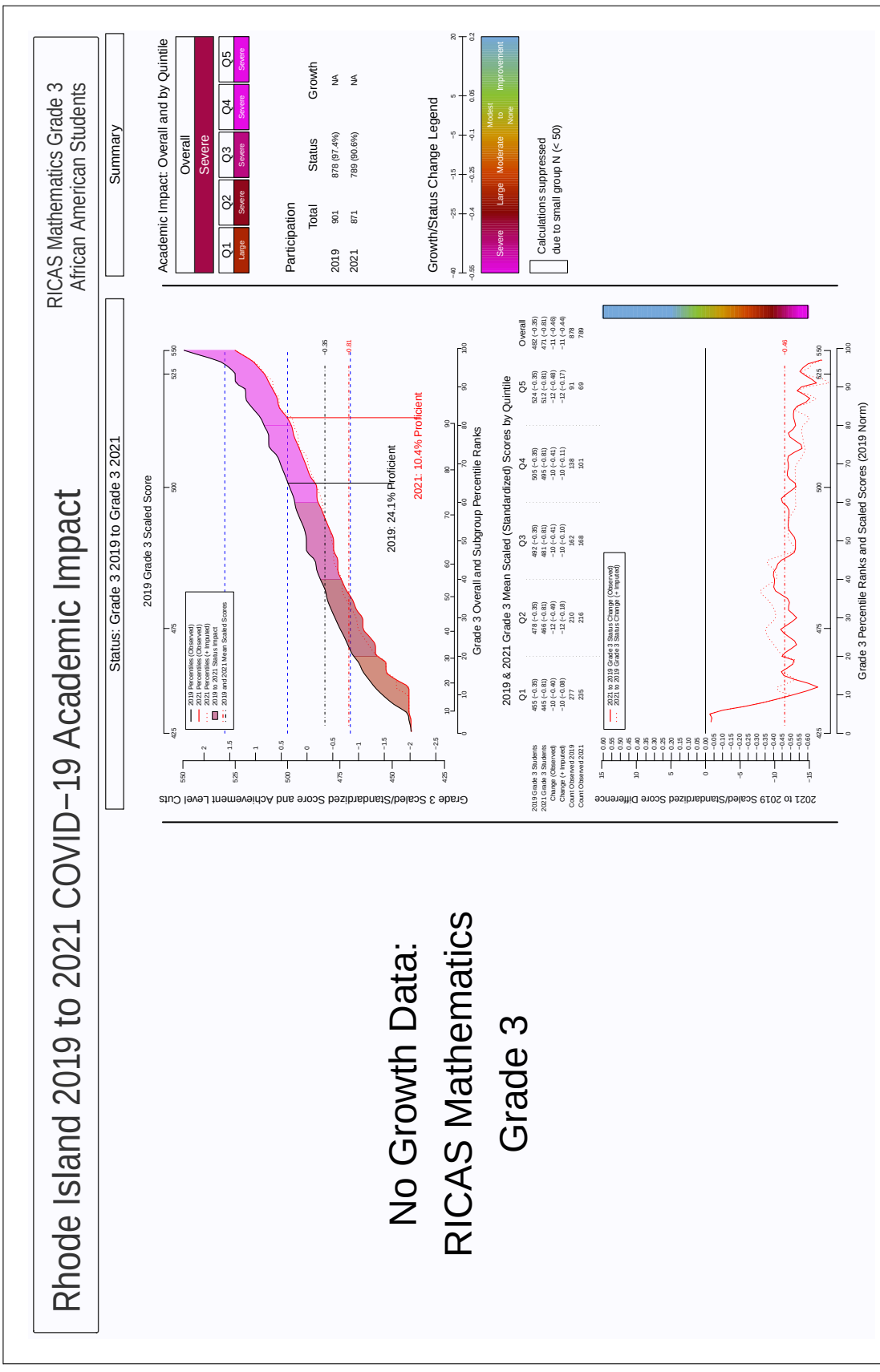


Figure 43: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, African American students

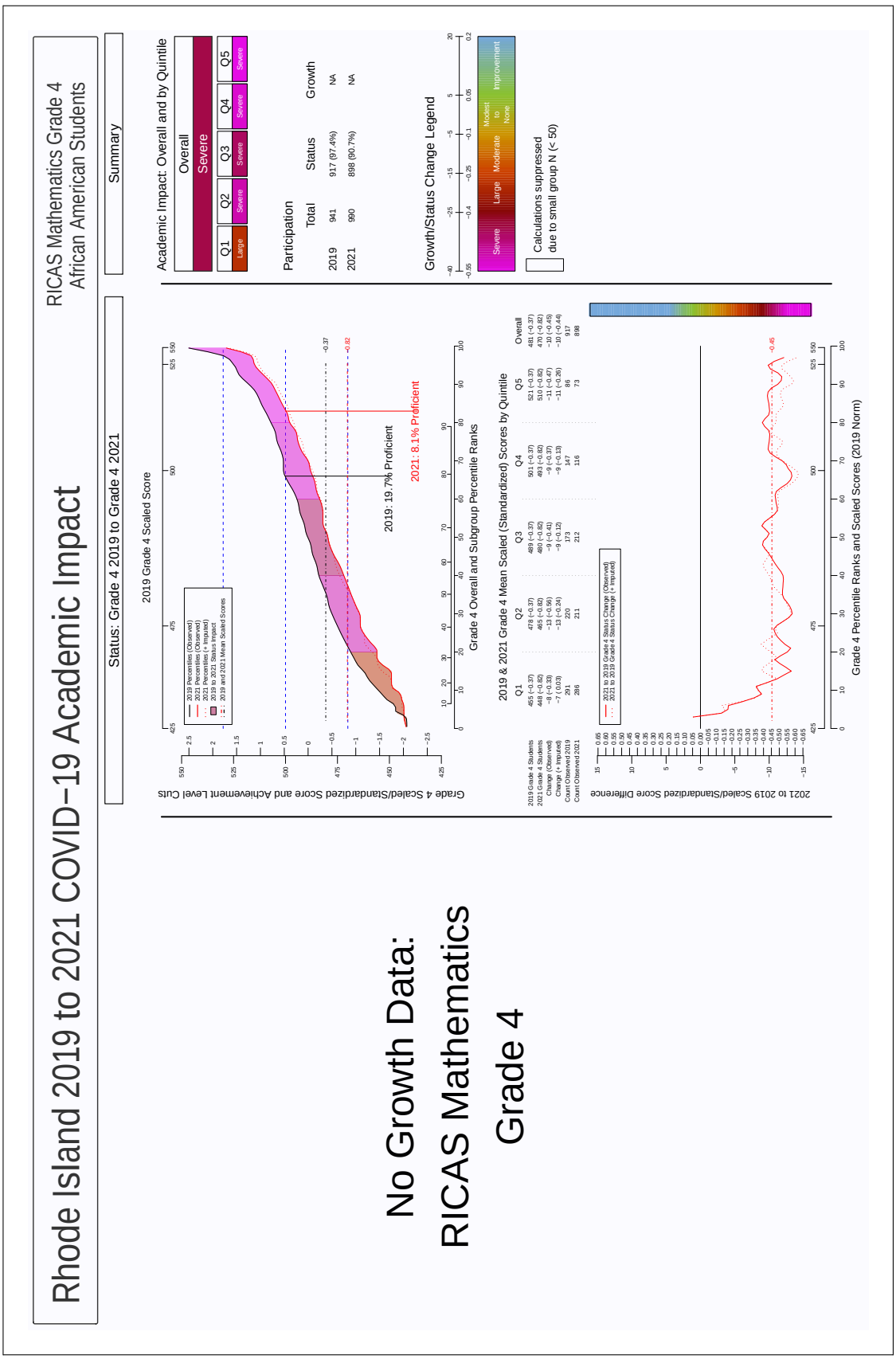


Figure 44: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, African American students

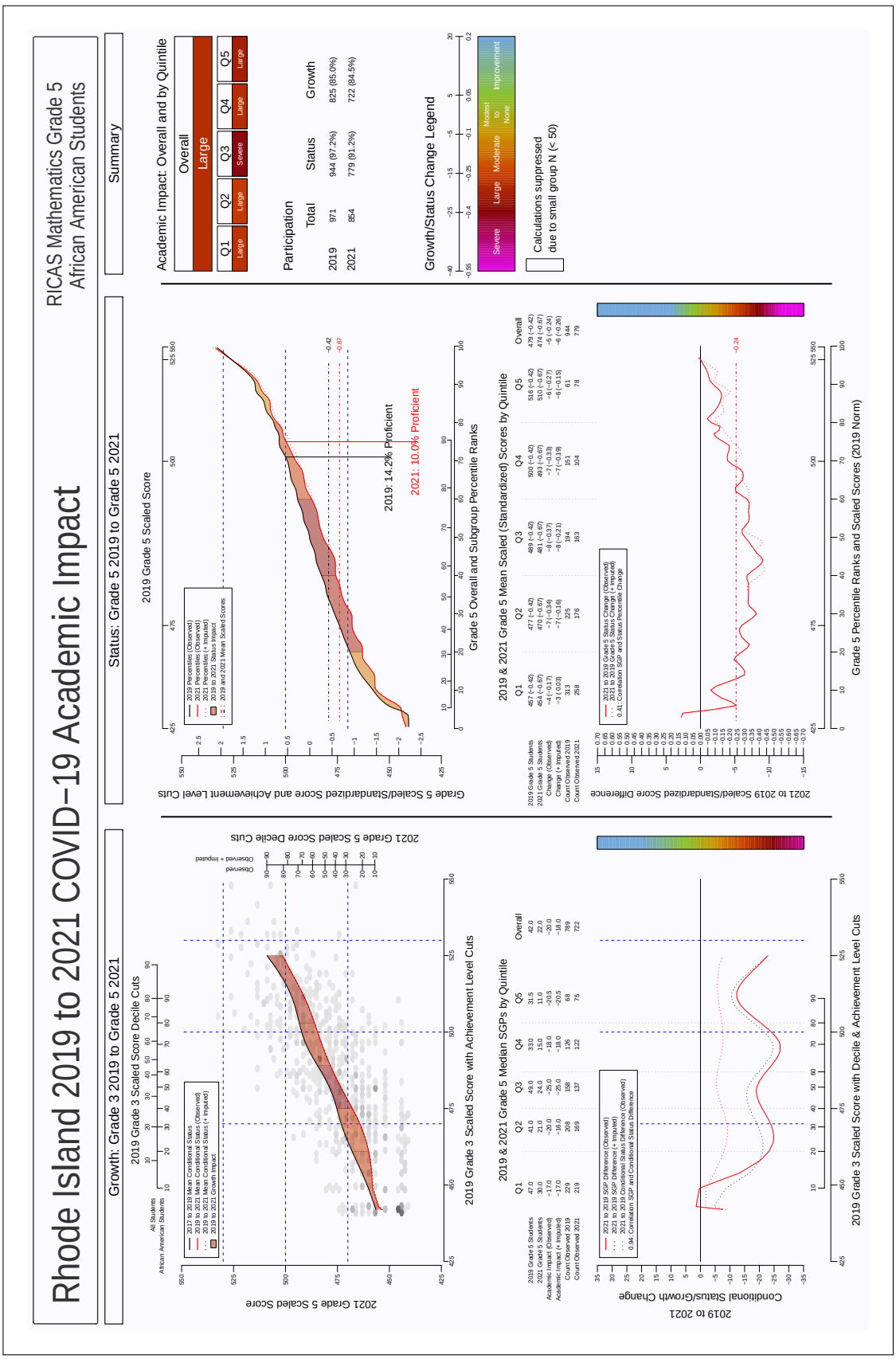


Figure 45: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, African American students

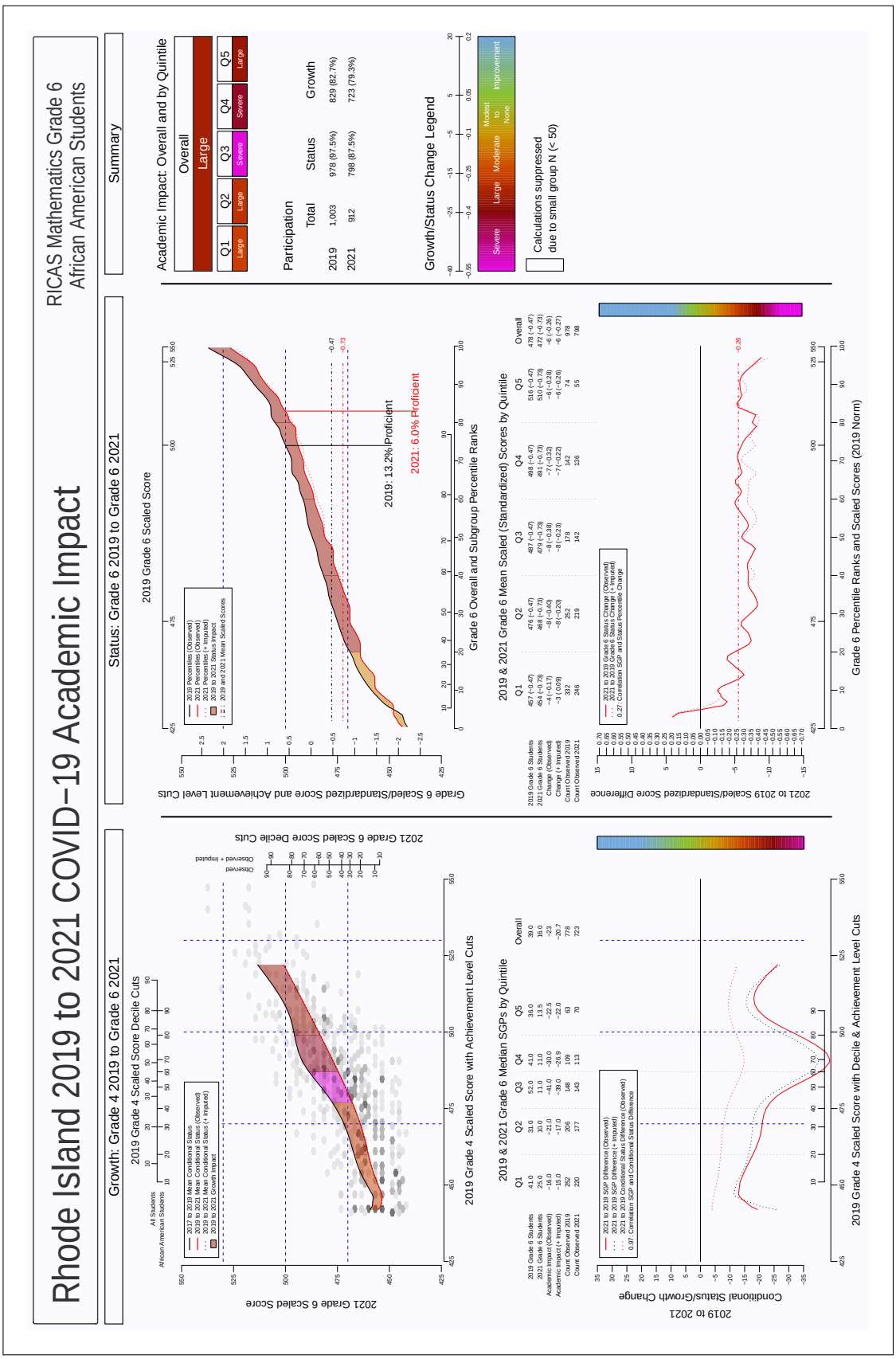


Figure 46: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, African American students

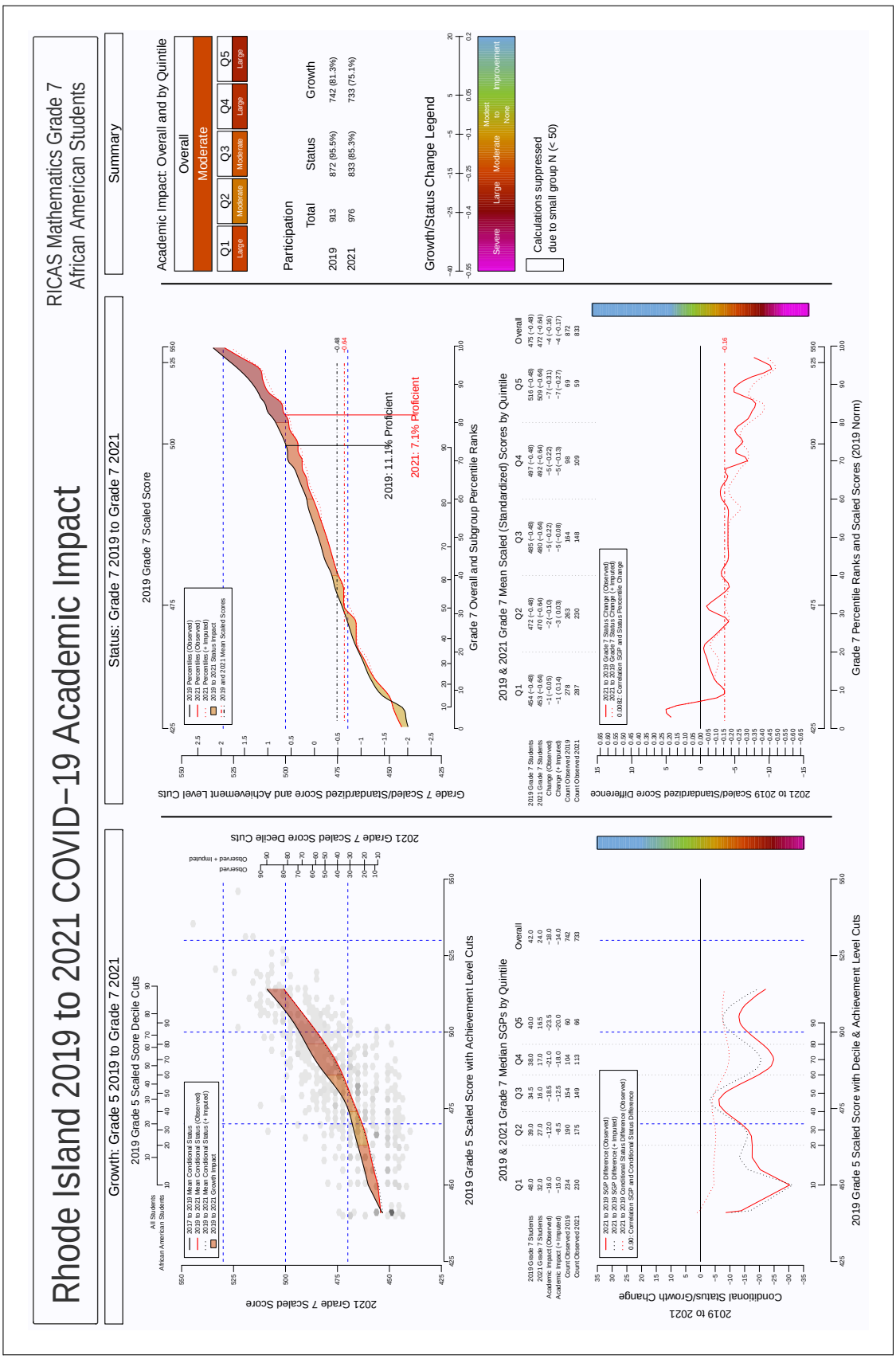


Figure 47: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, African American students

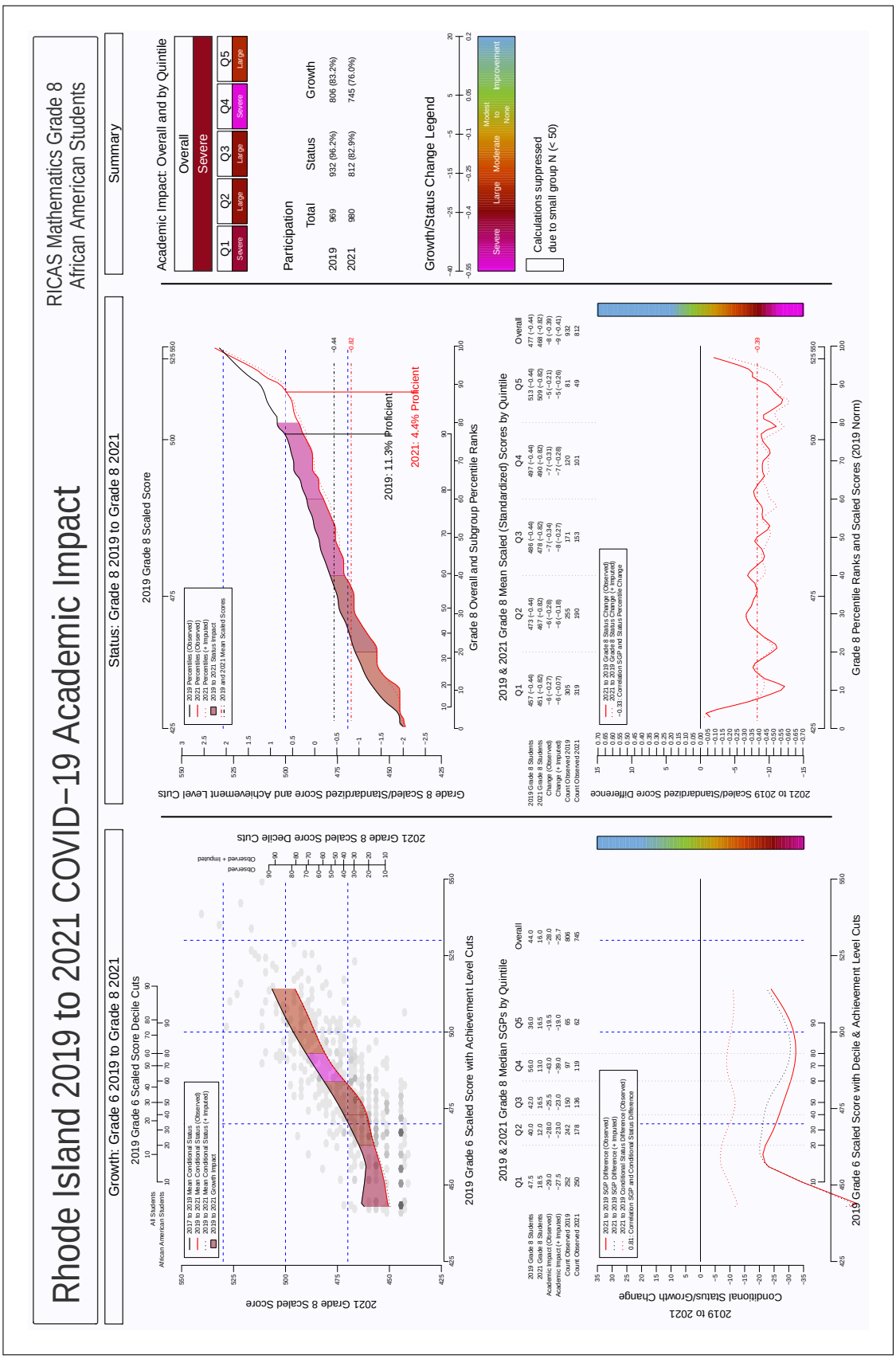


Figure 48: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, African American students

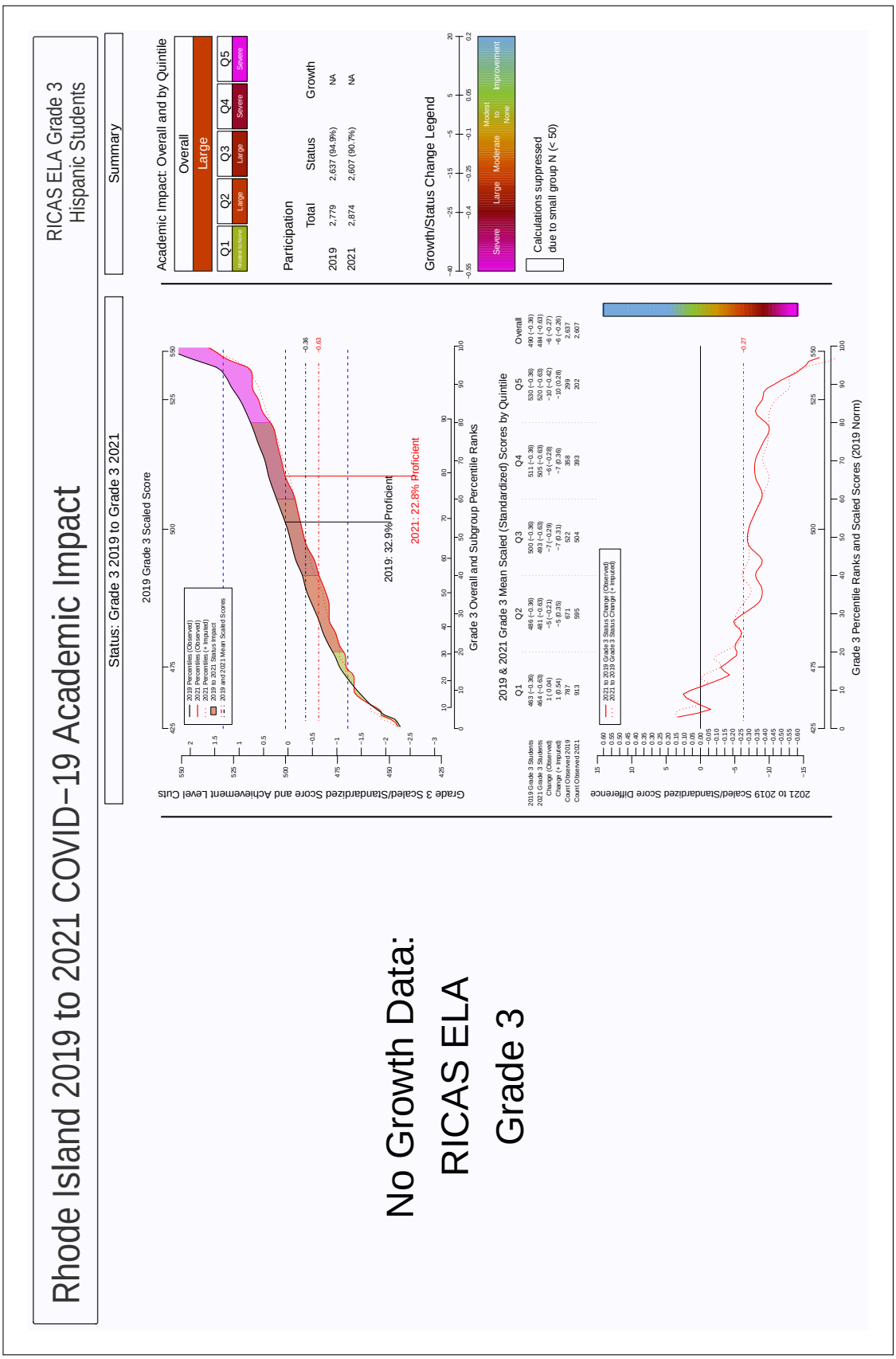


Figure 49: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, Hispanic students

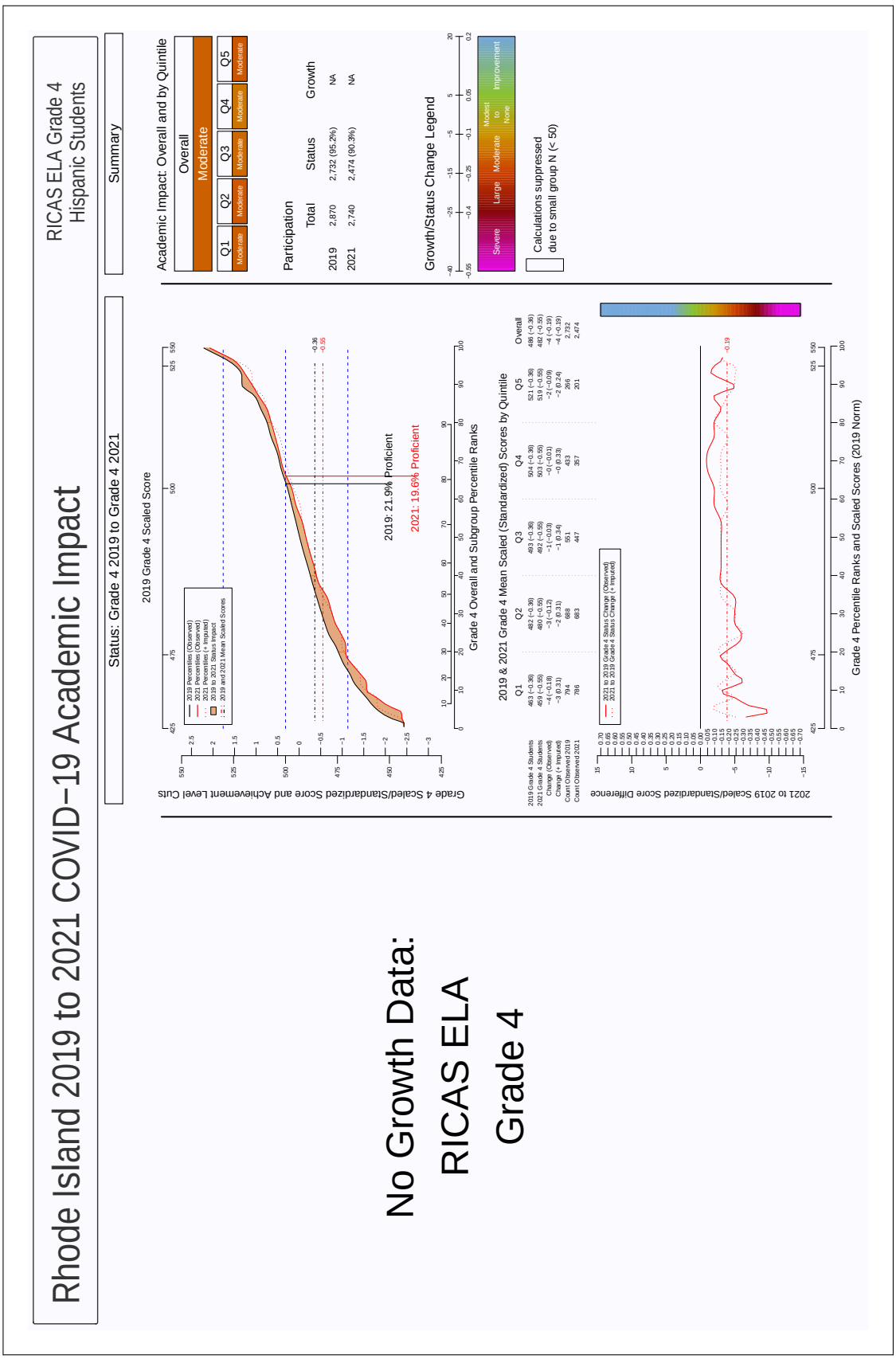


Figure 50: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, Hispanic students

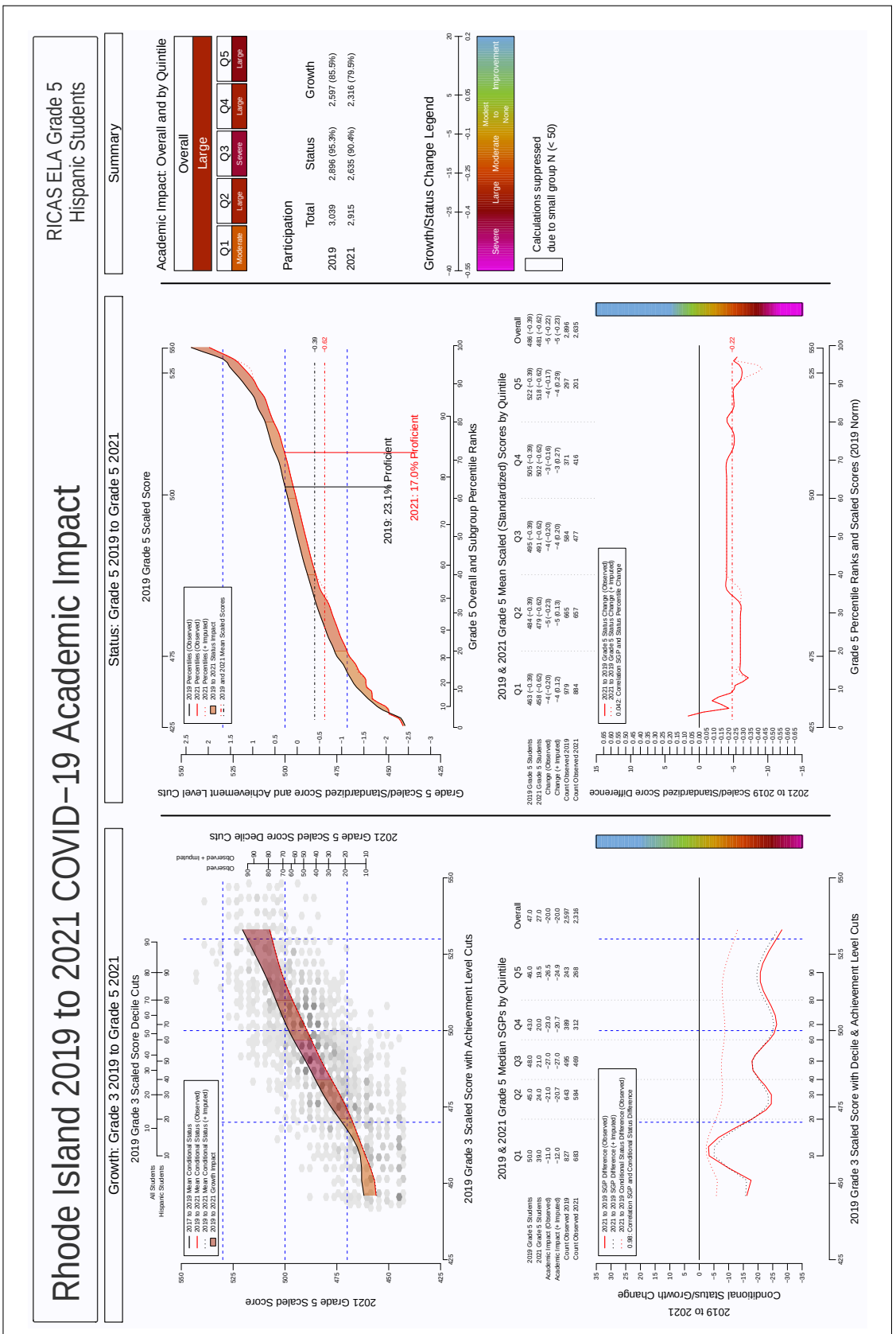


Figure 51: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, Hispanic students

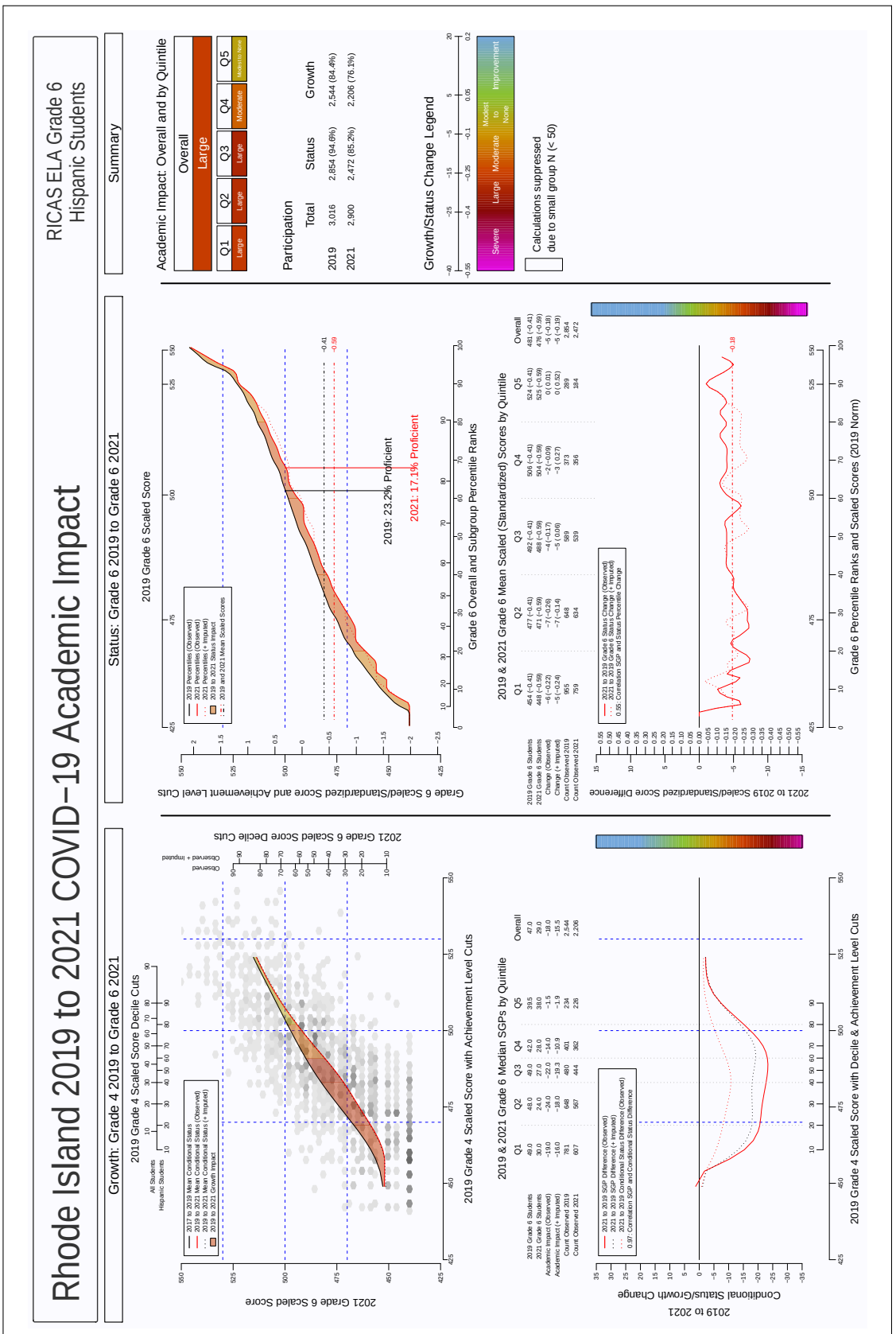


Figure 52: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, Hispanic students

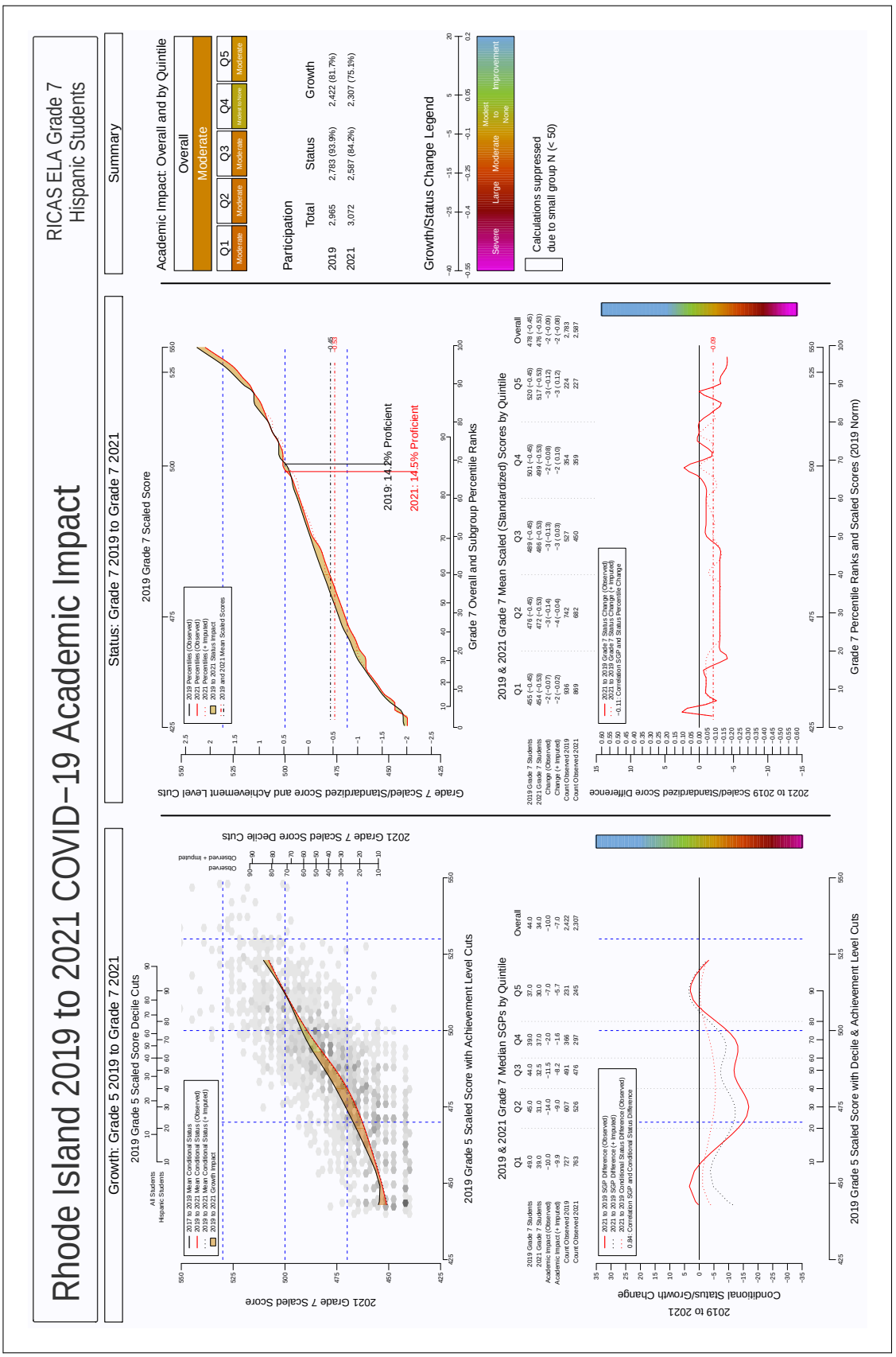


Figure 53: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, Hispanic students

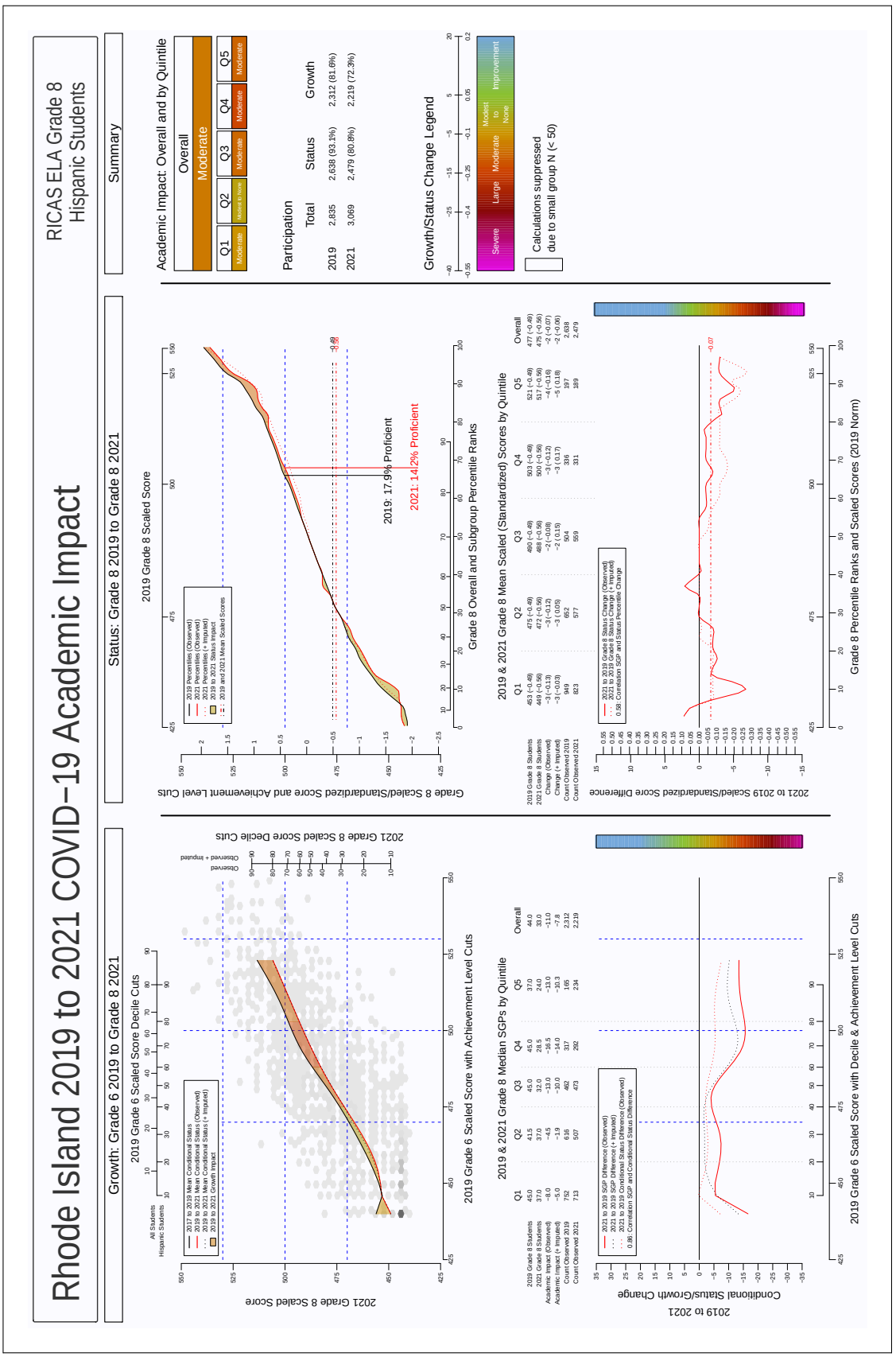


Figure 54: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, Hispanic students

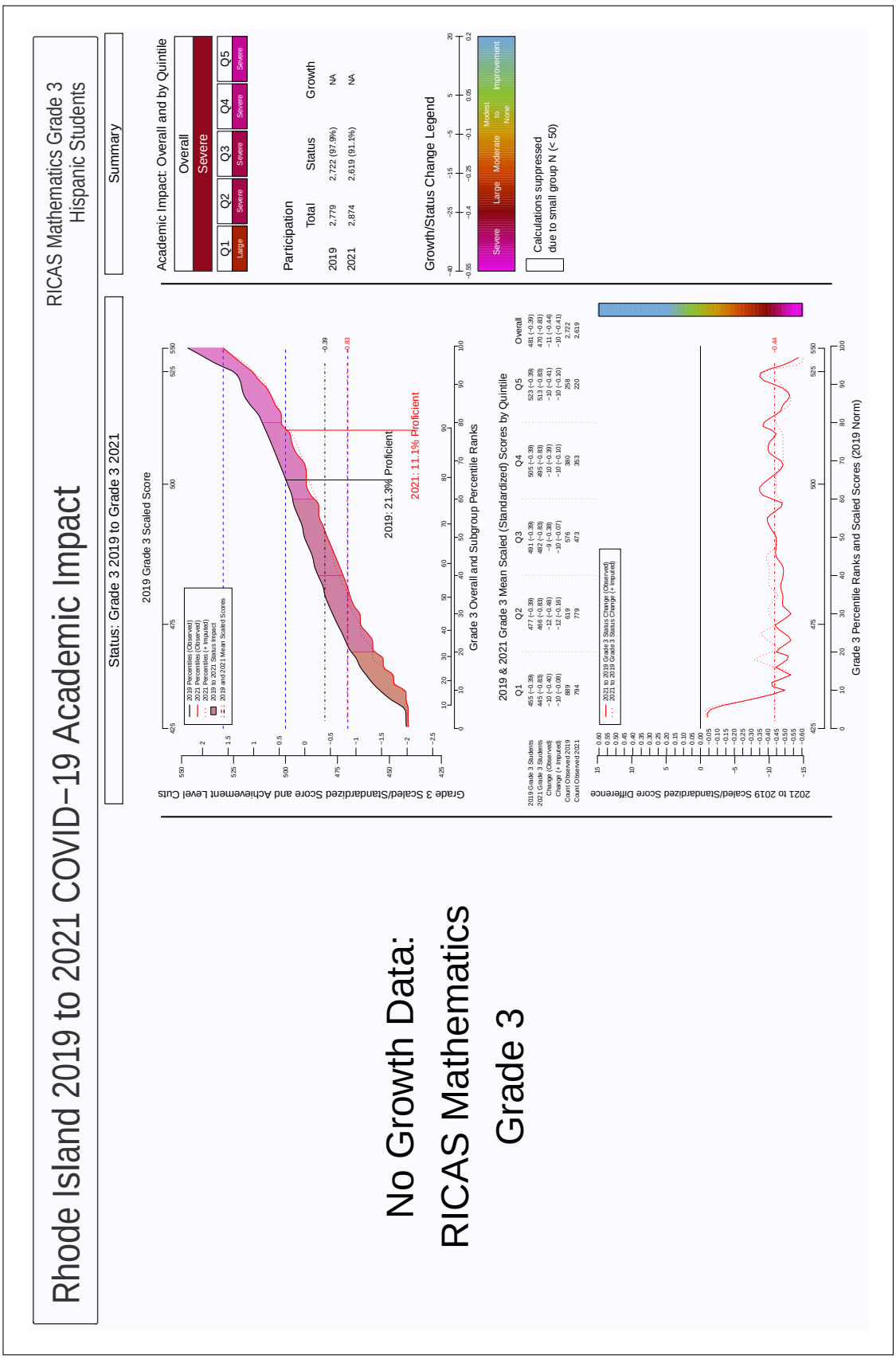


Figure 55: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, Hispanic students

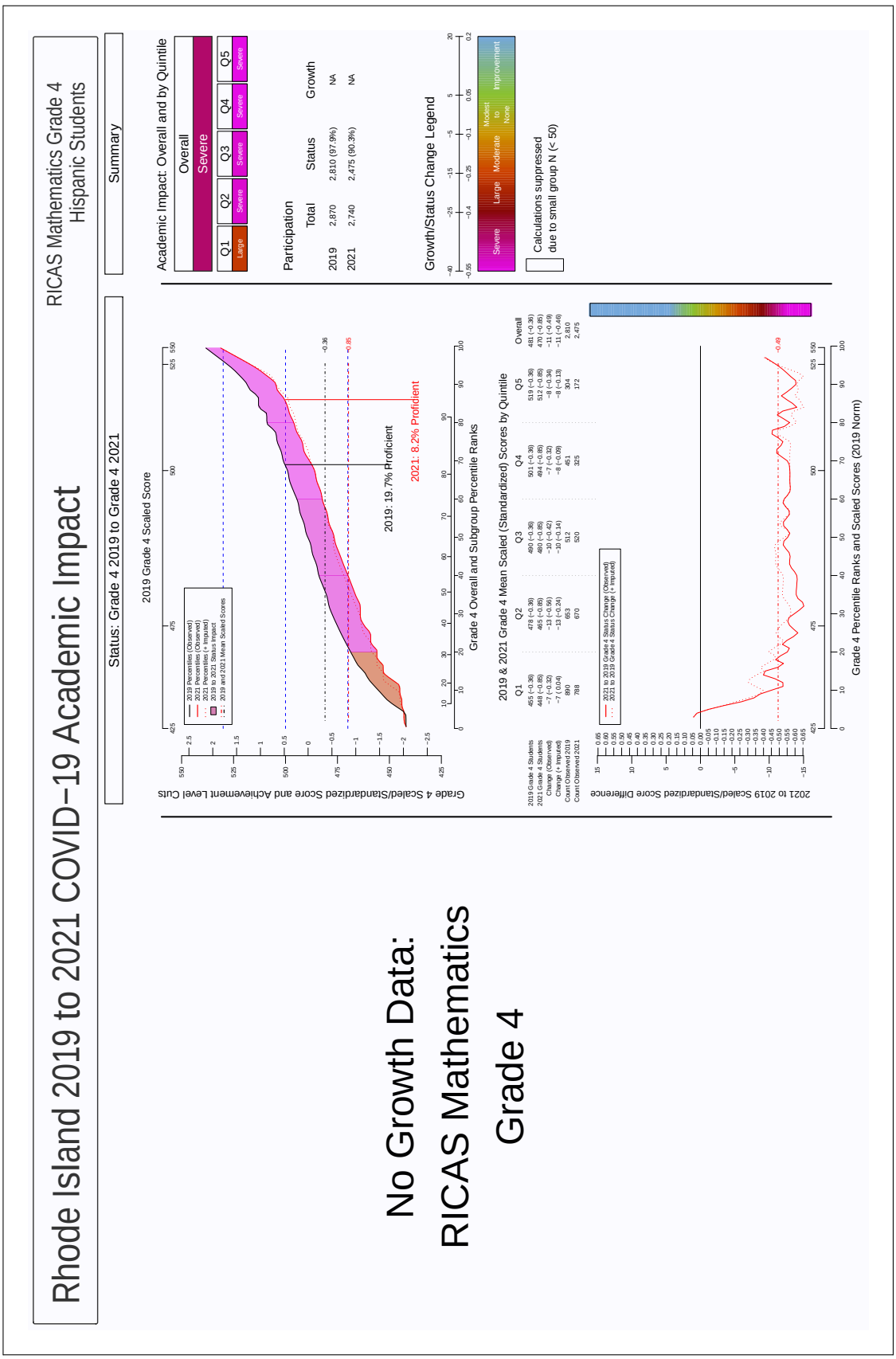


Figure 56: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, Hispanic students

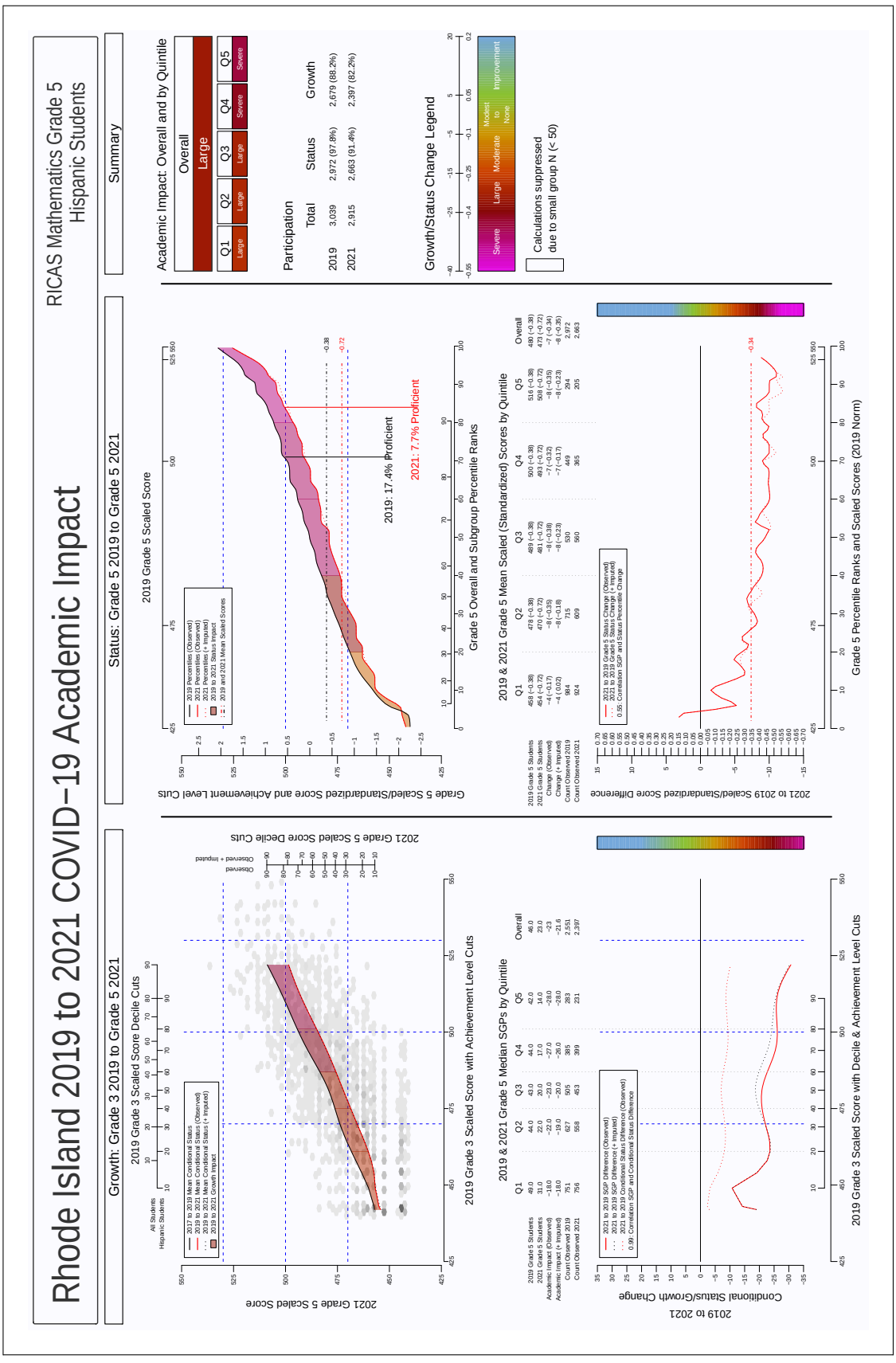


Figure 57: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, Hispanic students

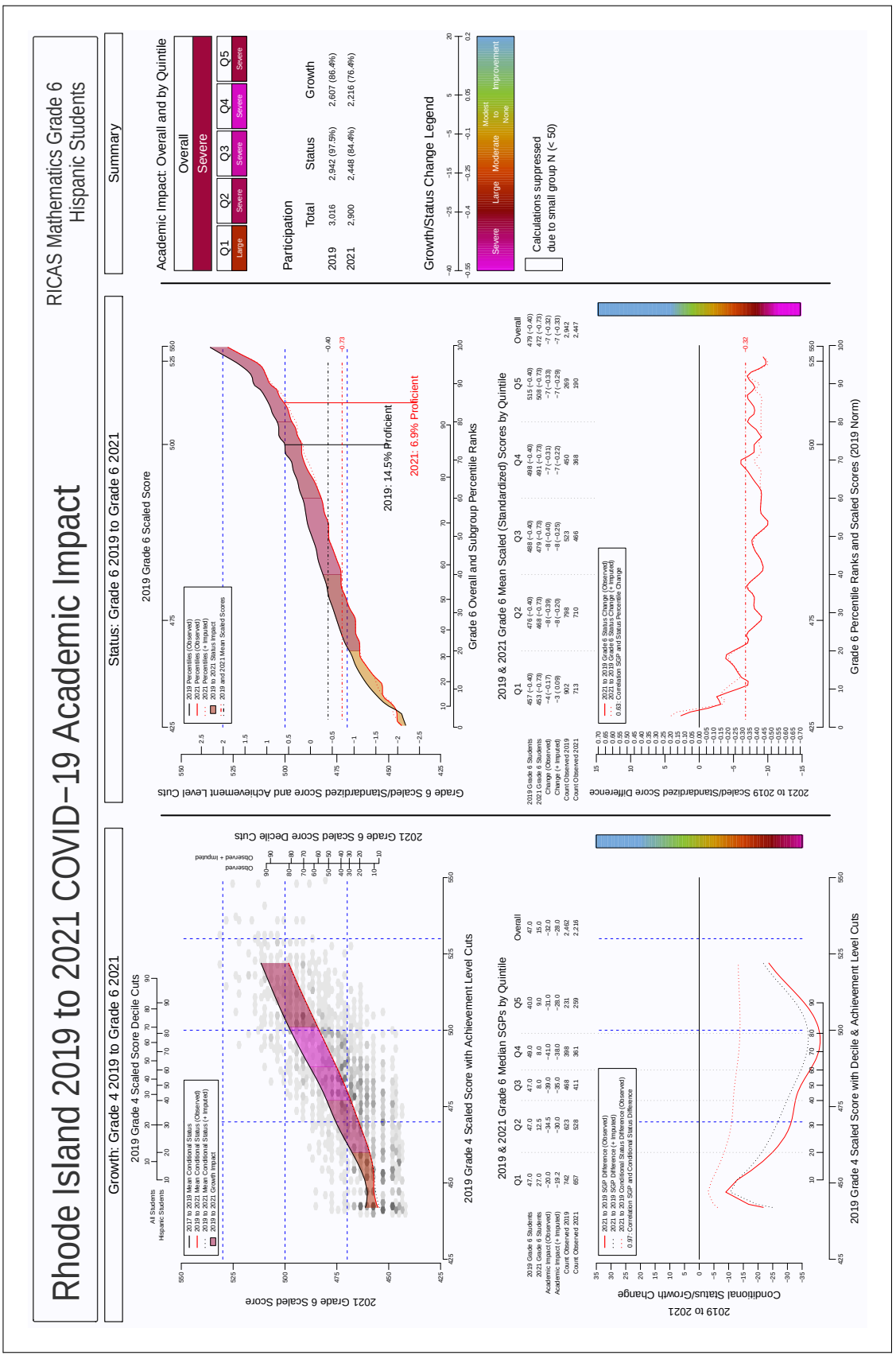


Figure 58: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, Hispanic students

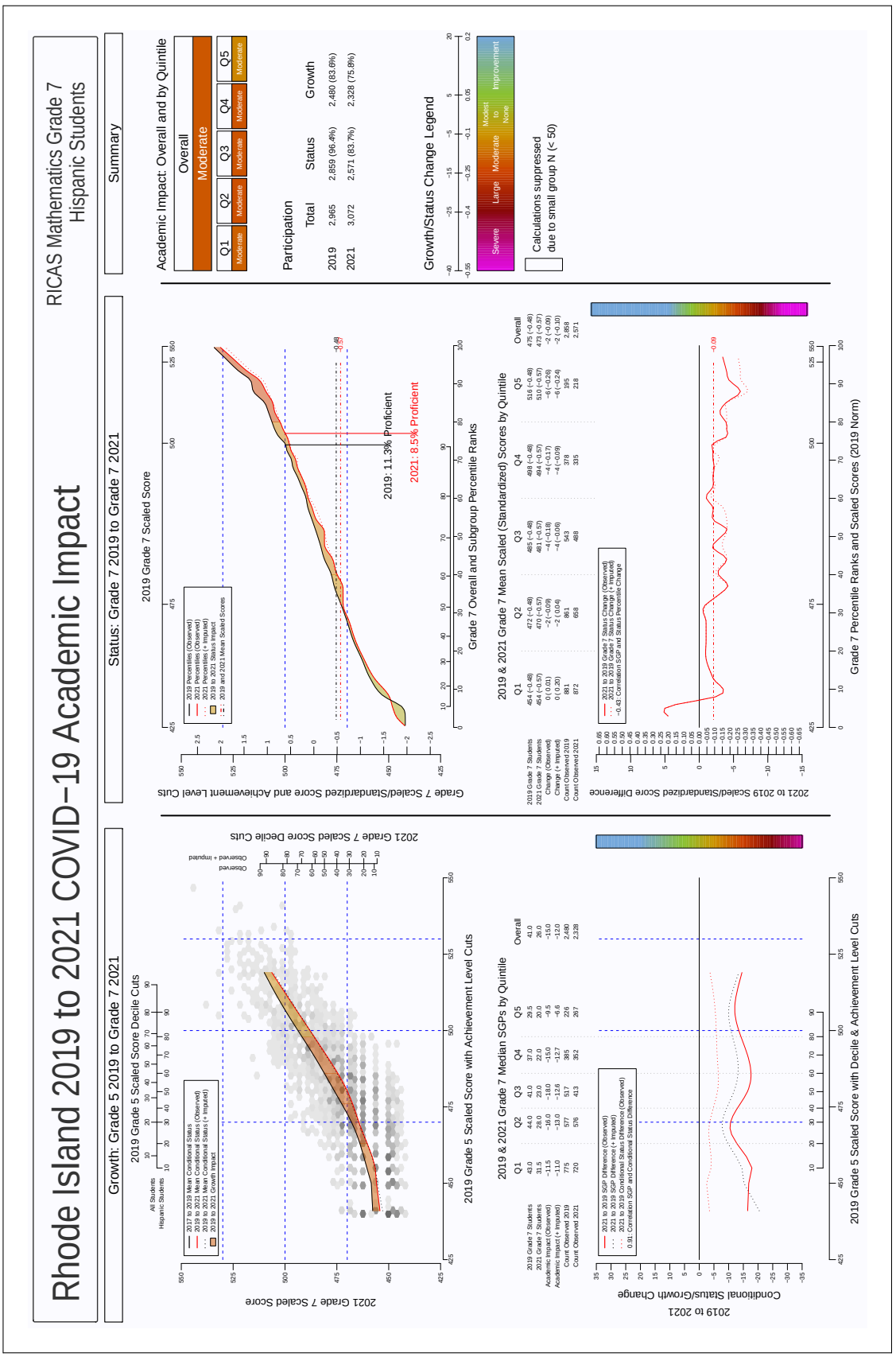


Figure 59: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, Hispanic students

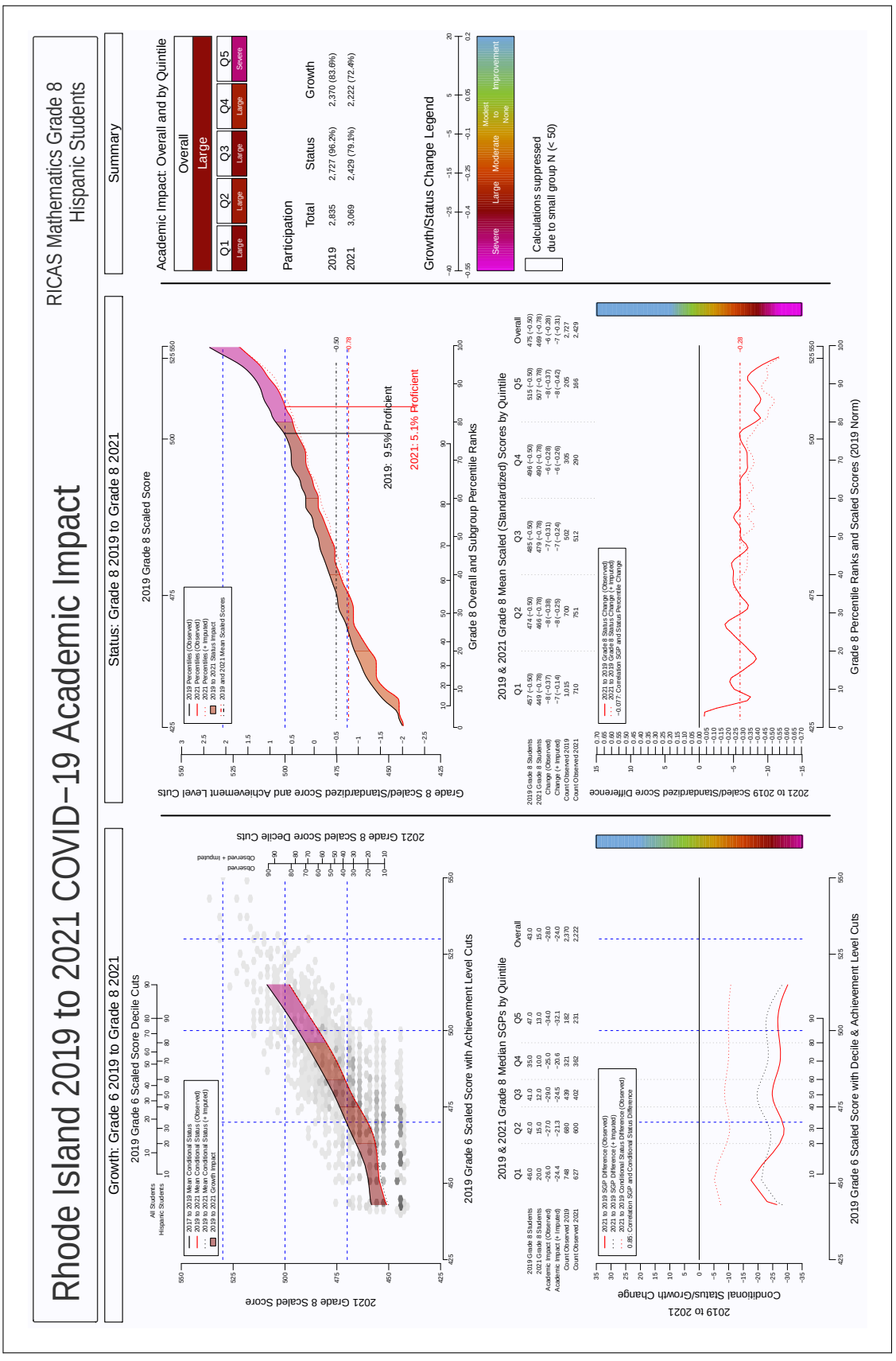


Figure 60: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, Hispanic students

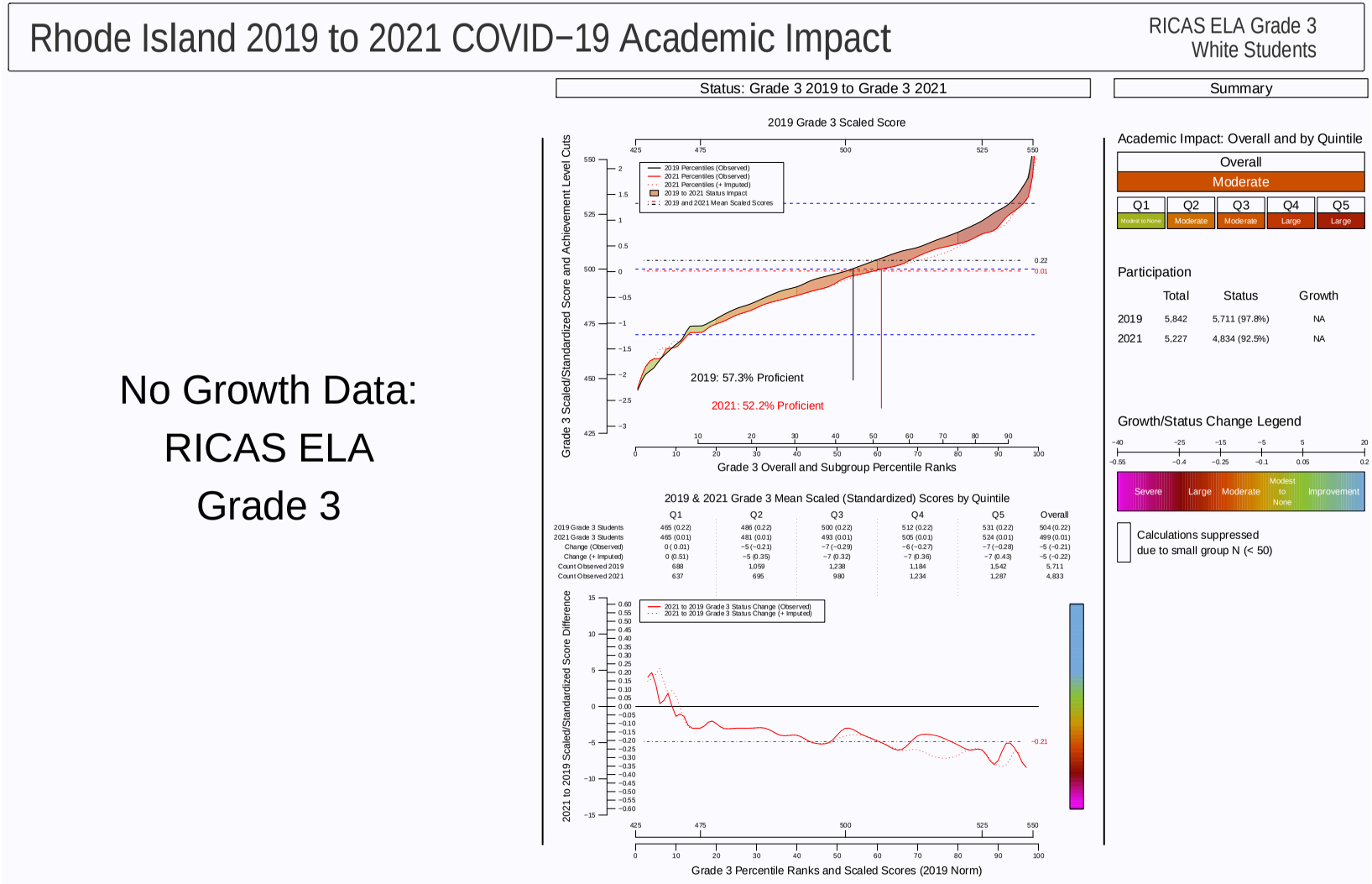


Figure 61: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, white students

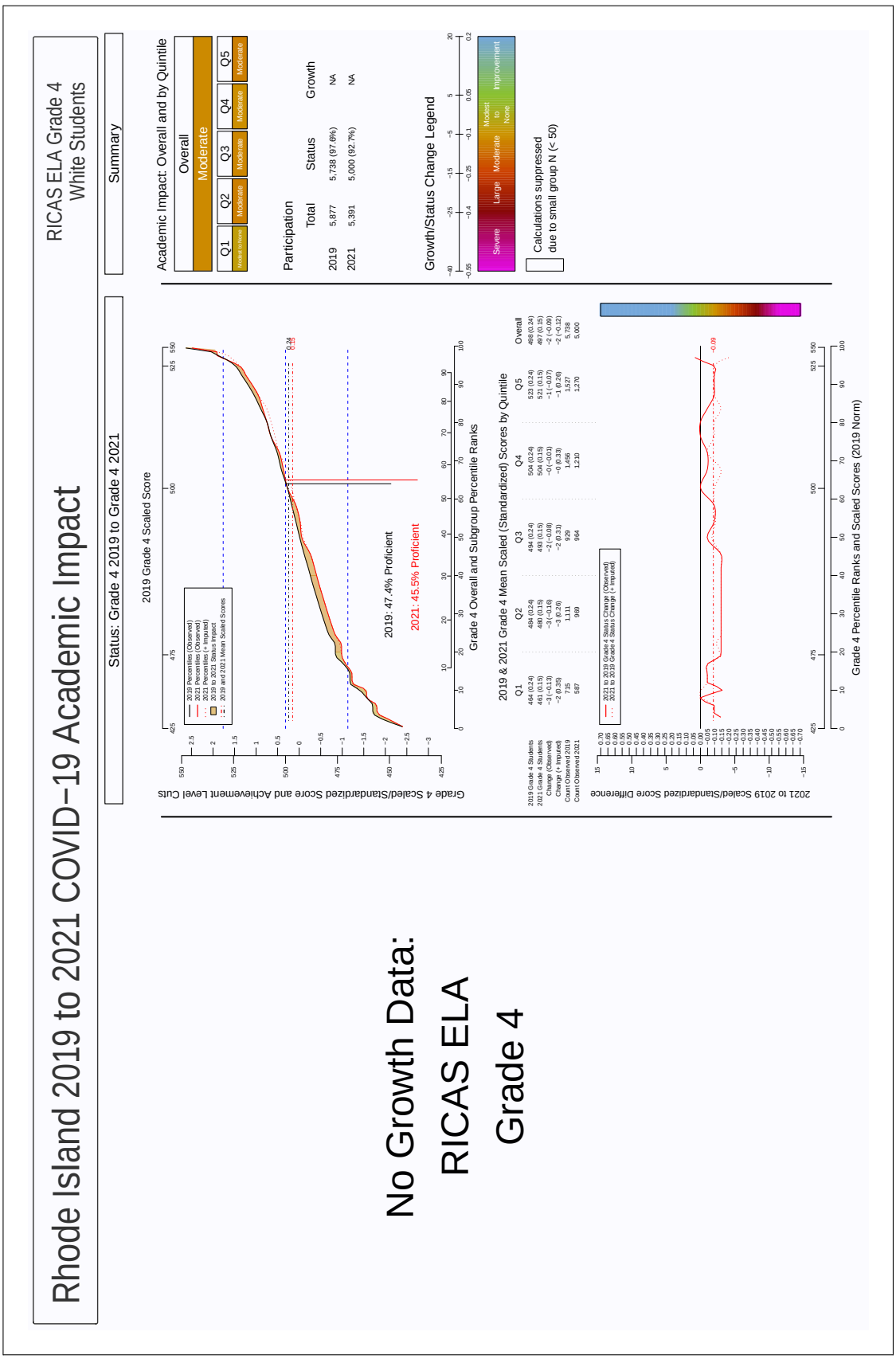


Figure 62: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, white students

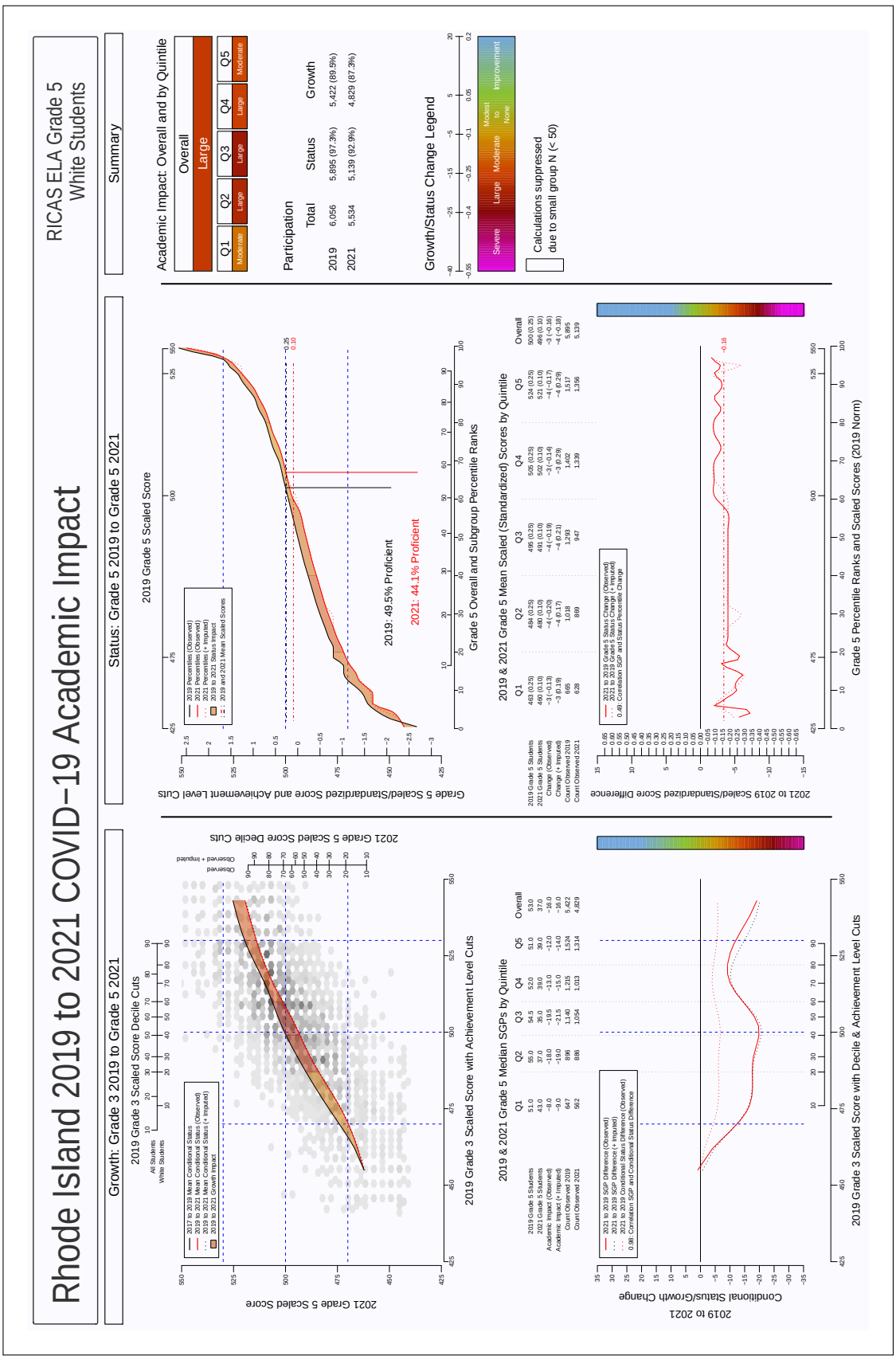


Figure 63: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, white students

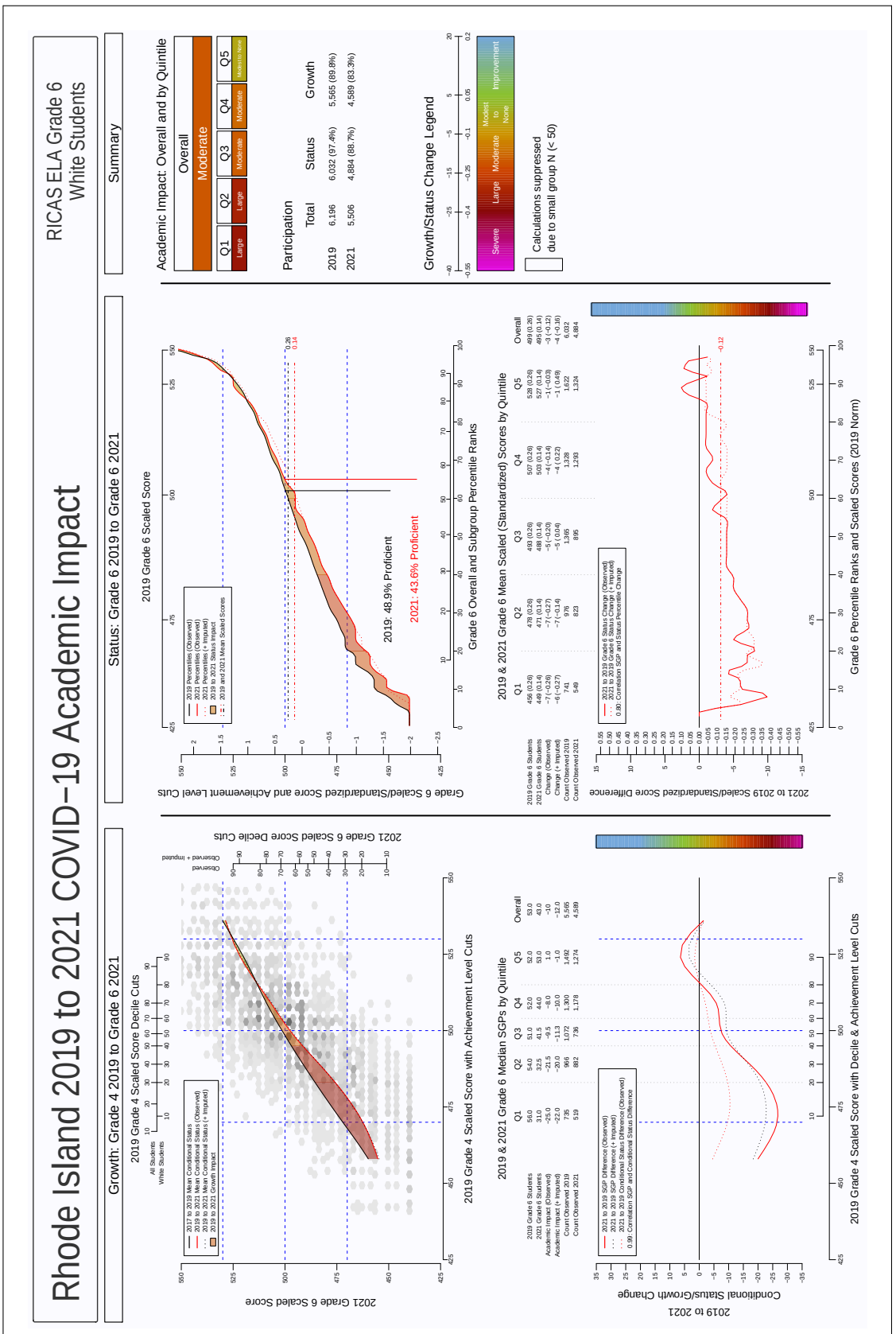


Figure 64: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, white students

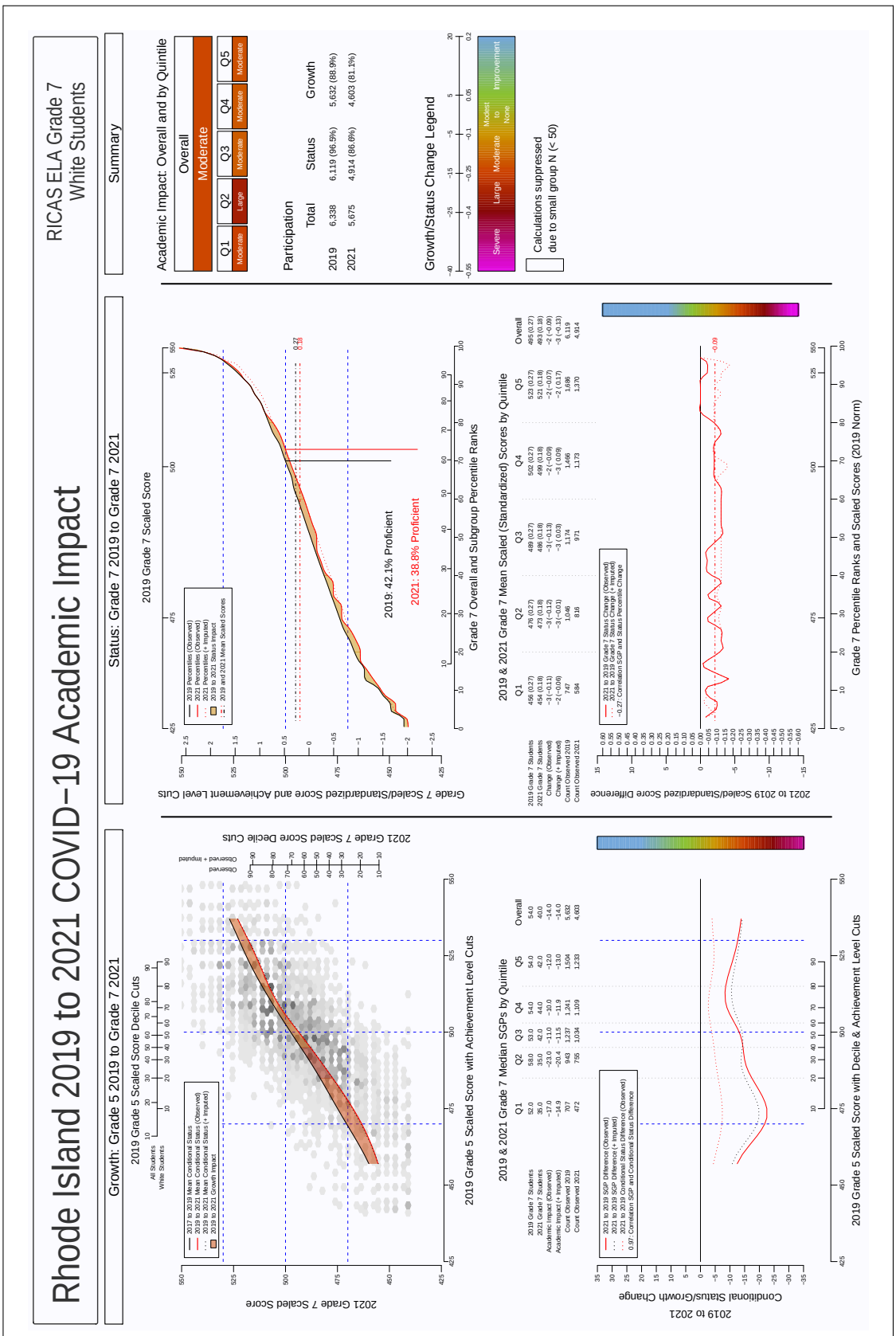


Figure 65: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, white students

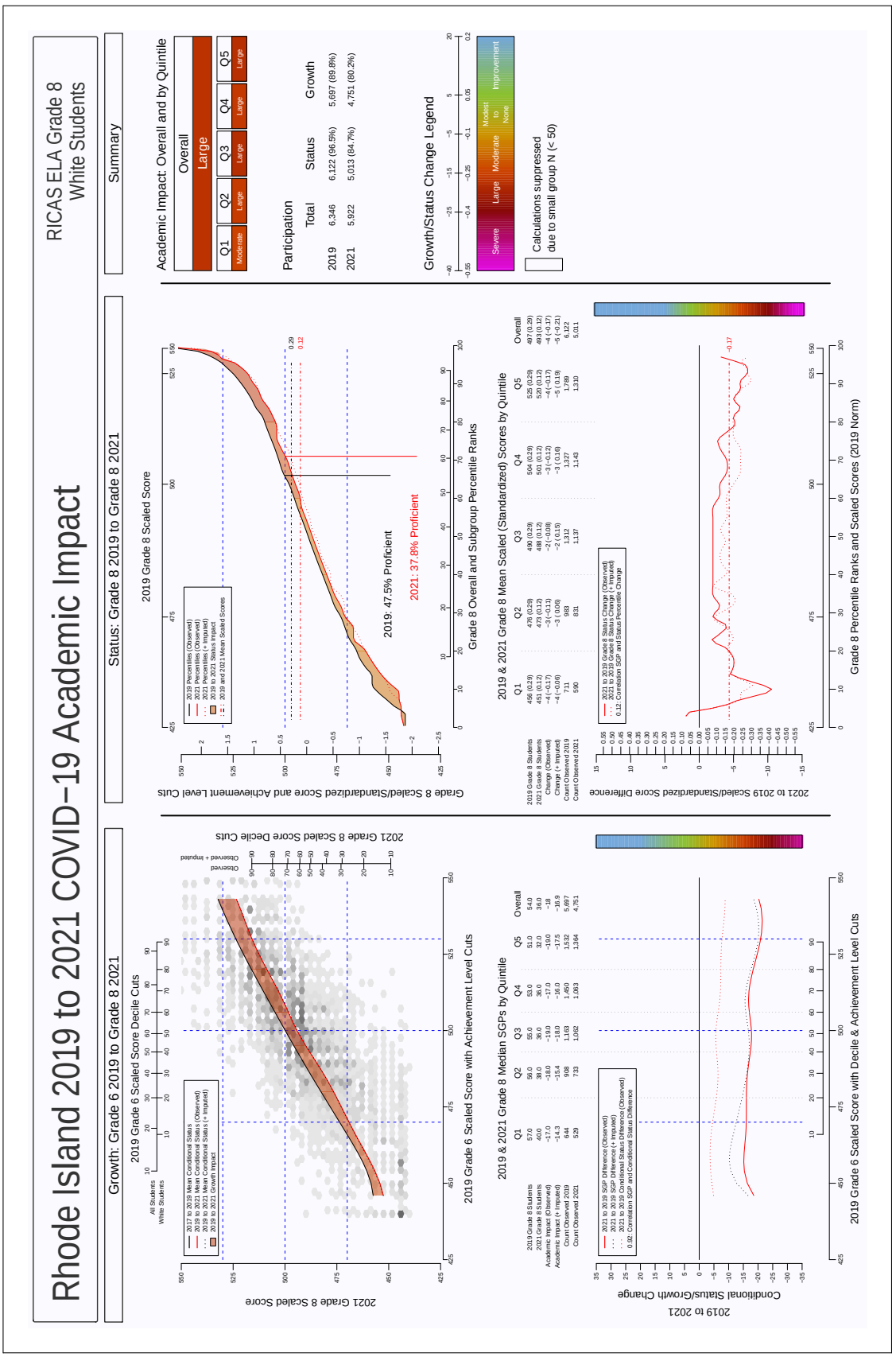


Figure 66: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, white students

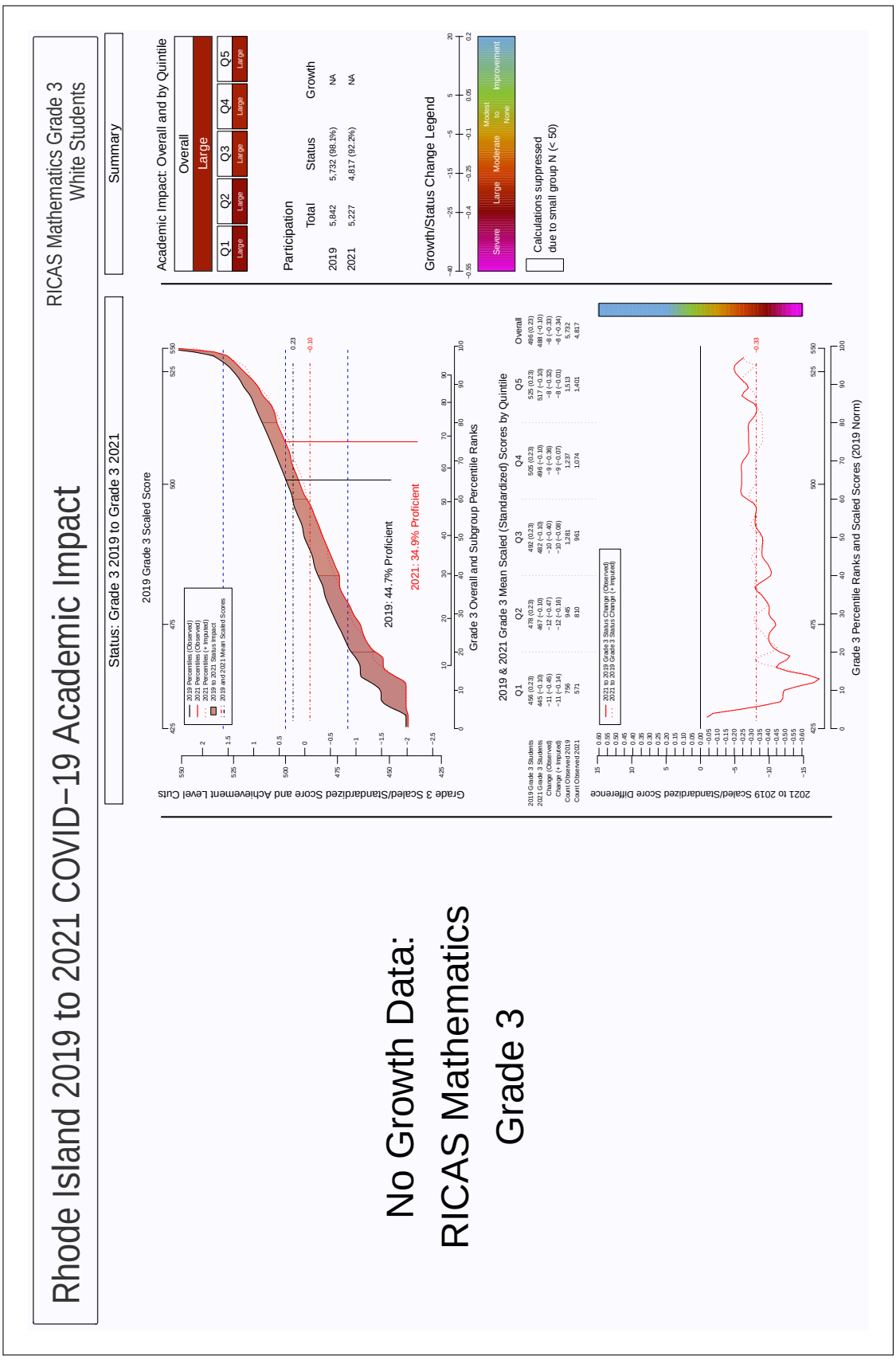


Figure 67: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, white students

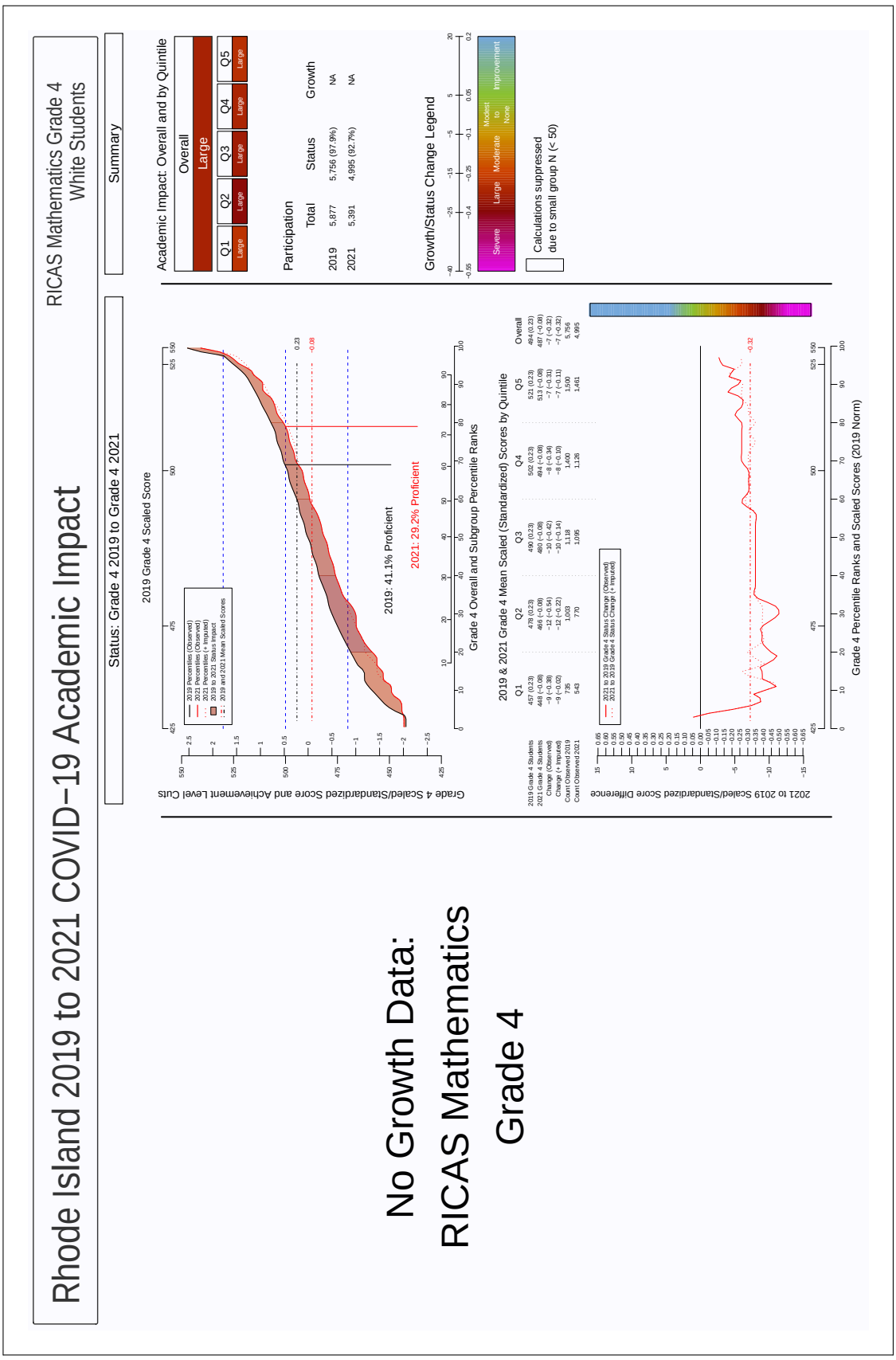


Figure 68: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, white students

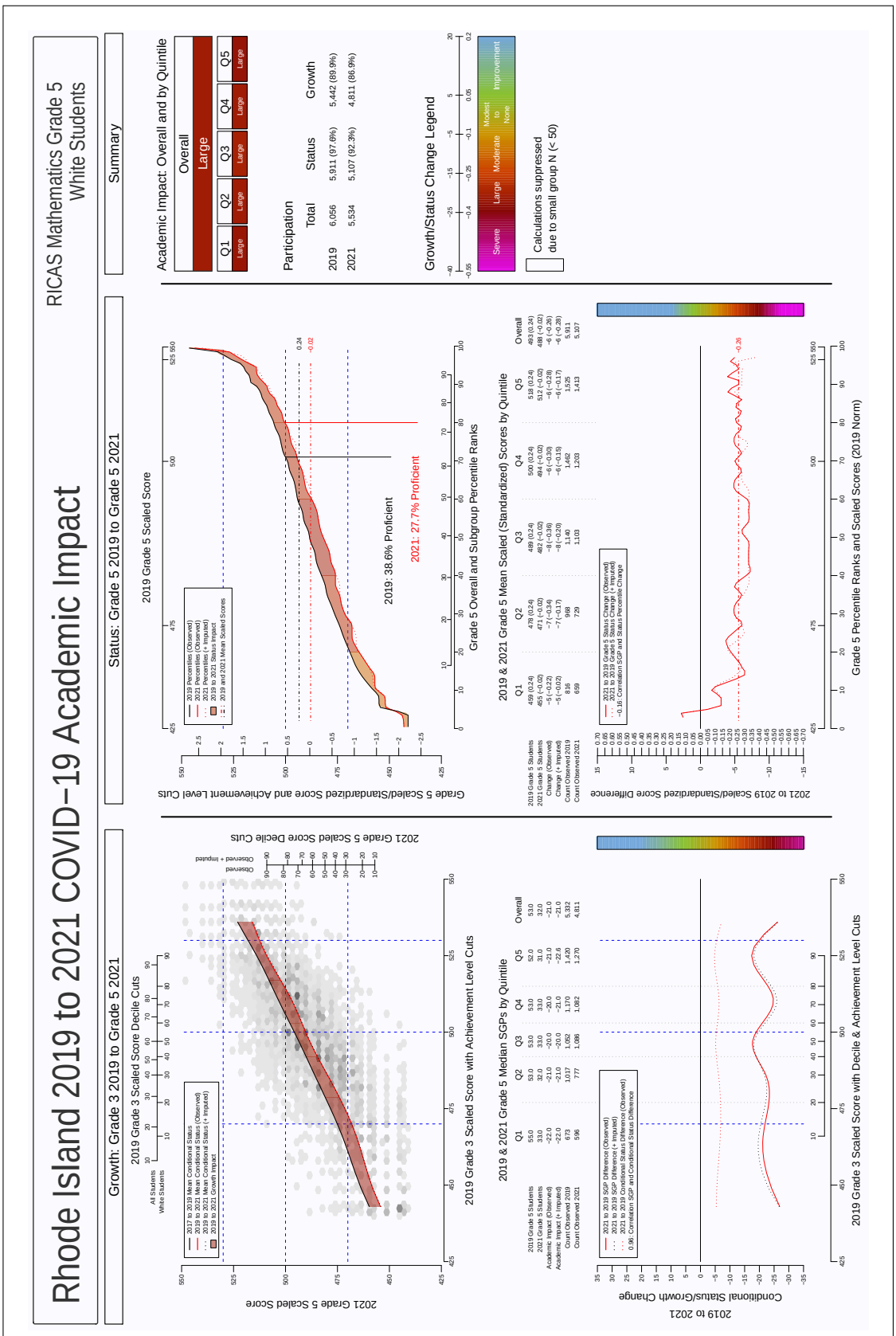


Figure 69: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, white students

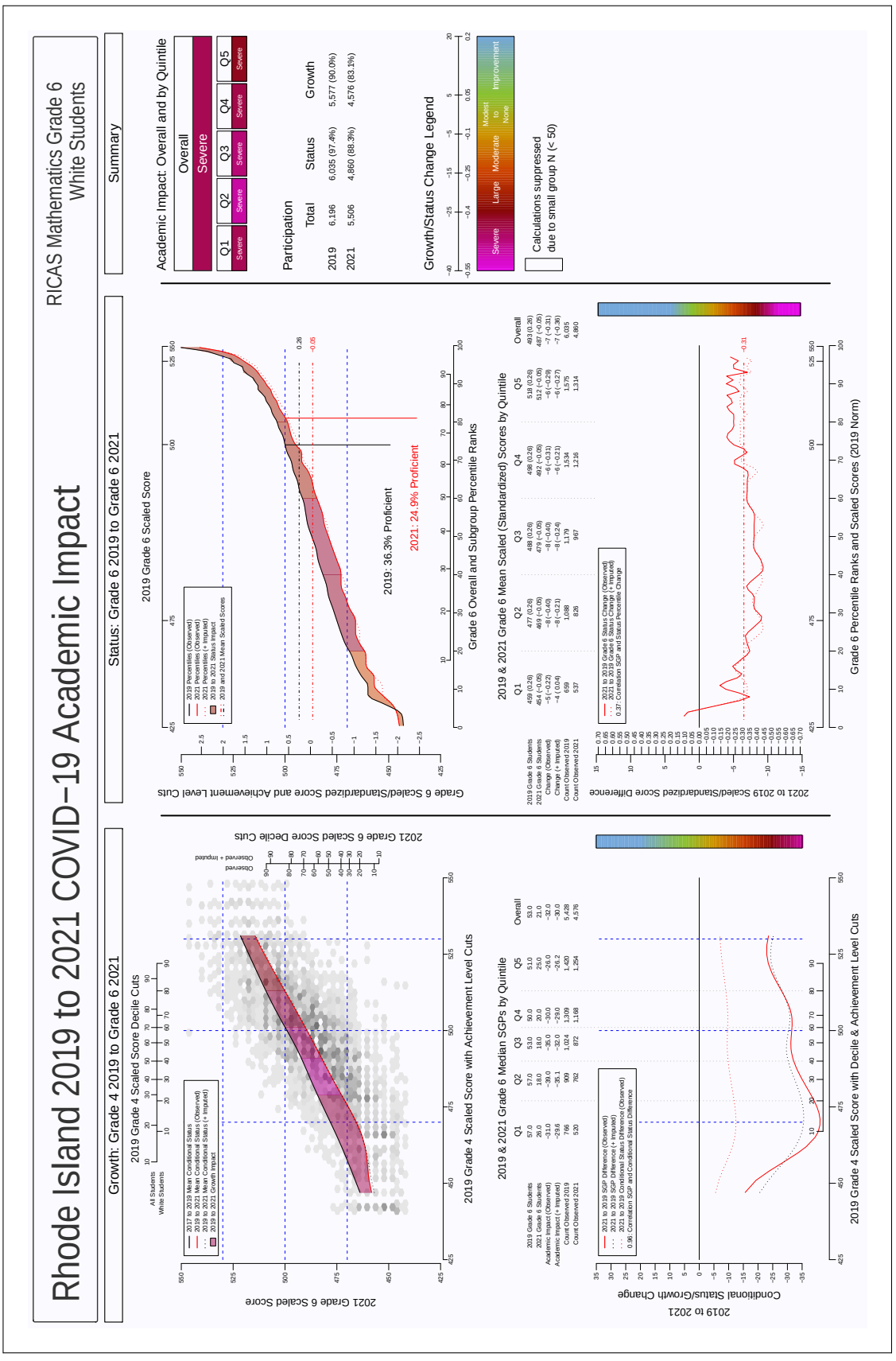


Figure 70: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, white students

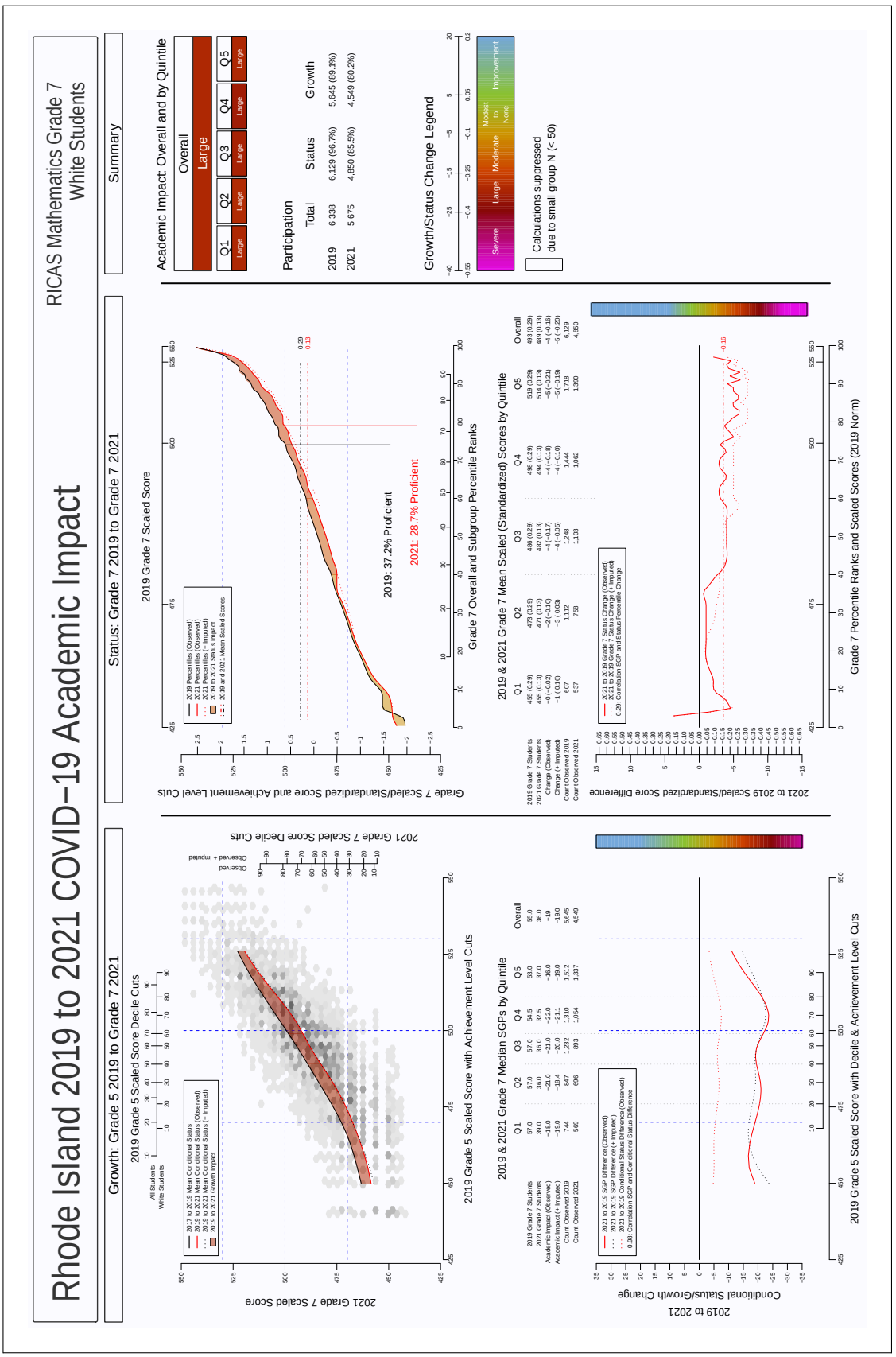


Figure 71: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, white students

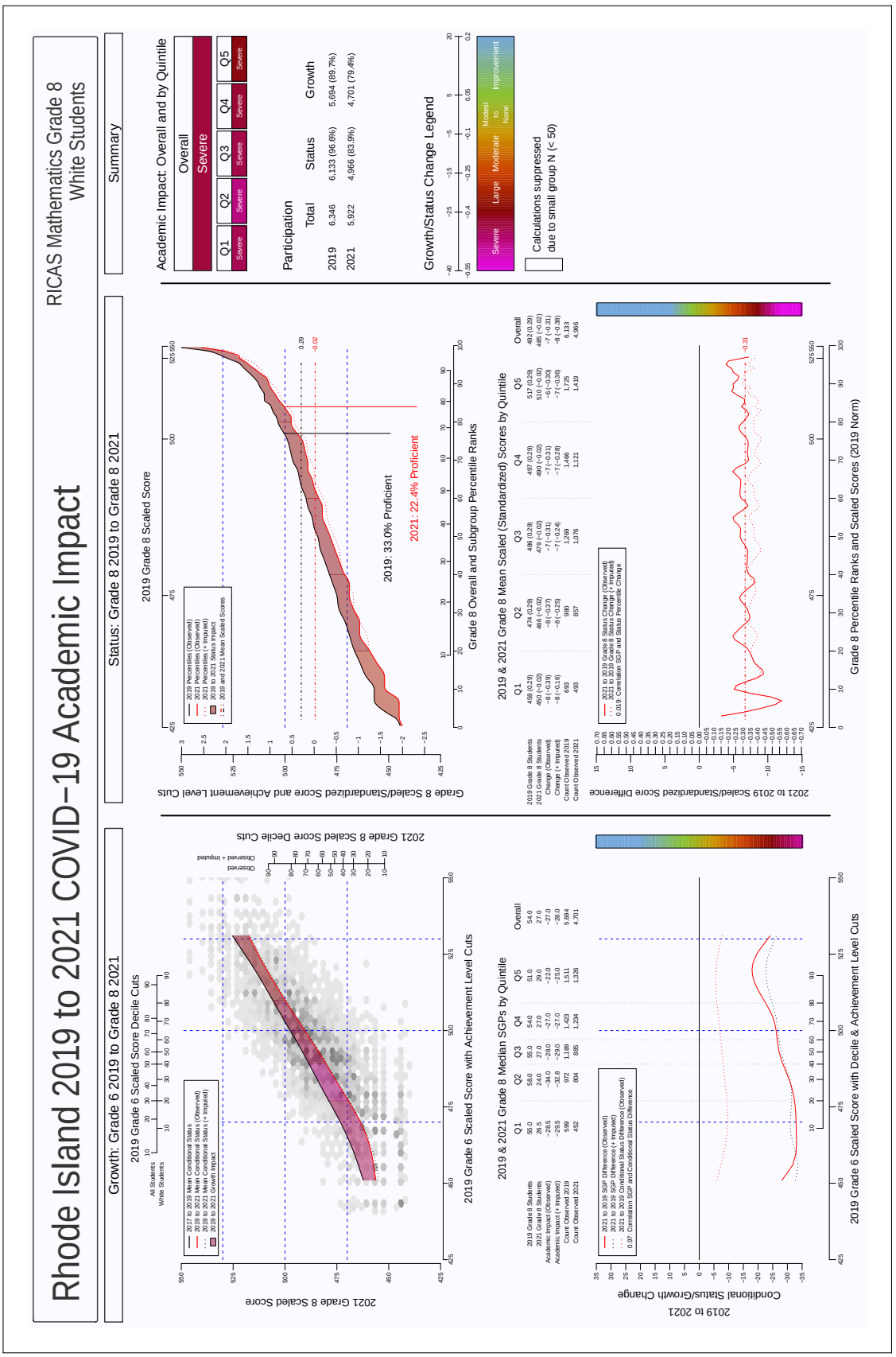


Figure 72: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, white students

Grade by Content Area by Special Education

The figures on the following pages illustrate pandemic related academic impact for special education students grouped by grade (3, 4, 5, 6, 7 or 8), content area)

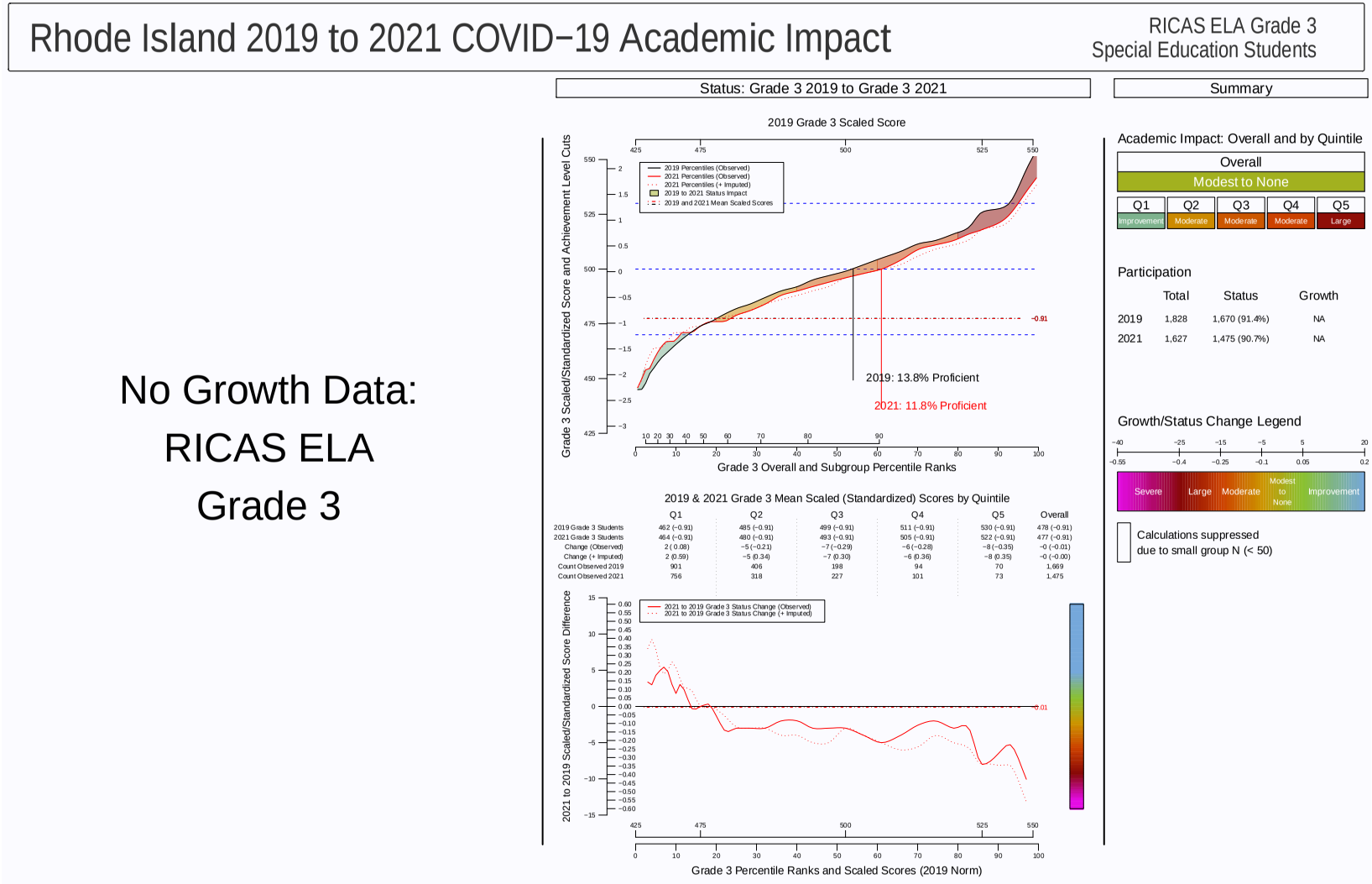


Figure 73: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, special education students

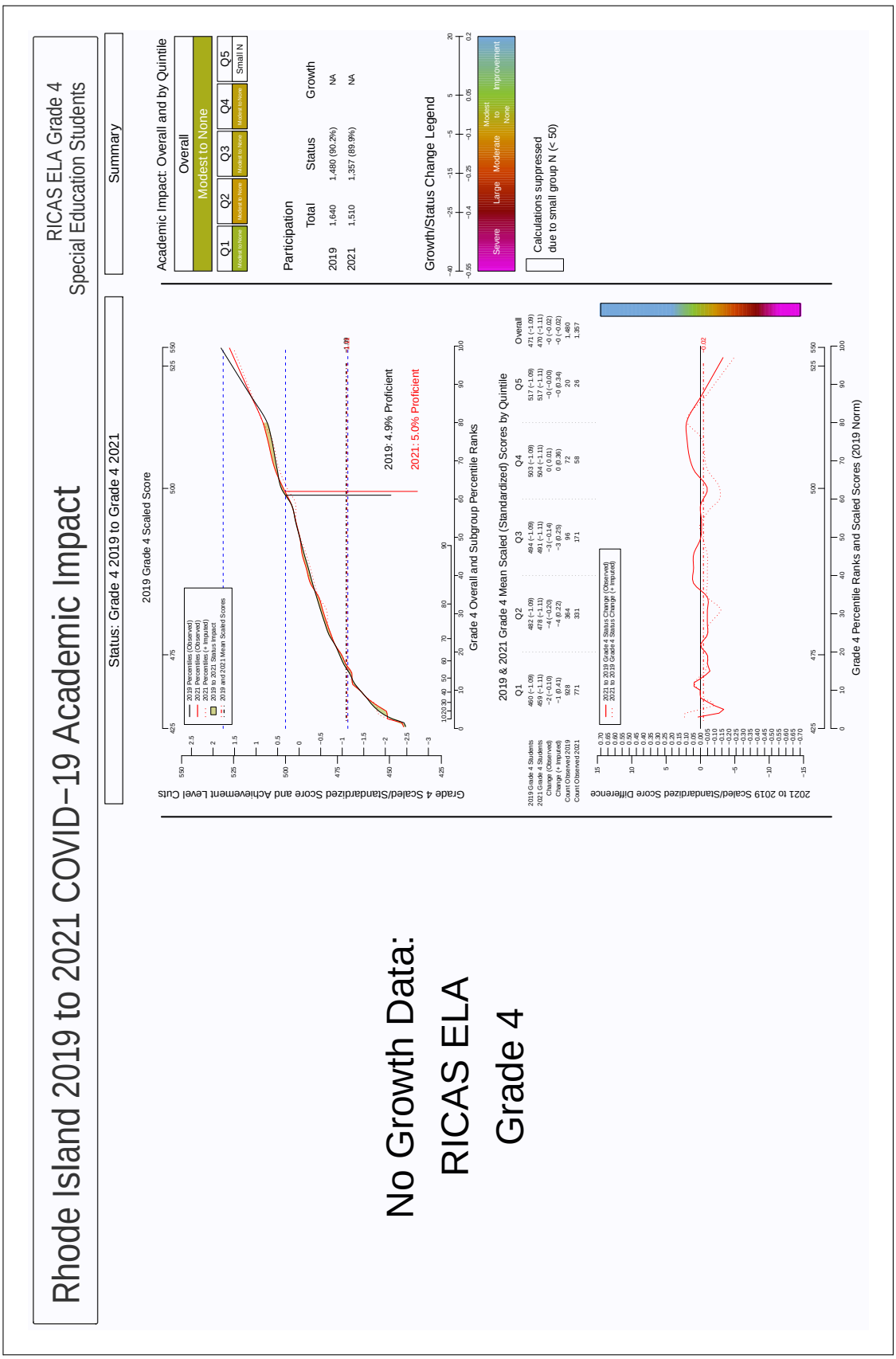


Figure 74: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, special education students

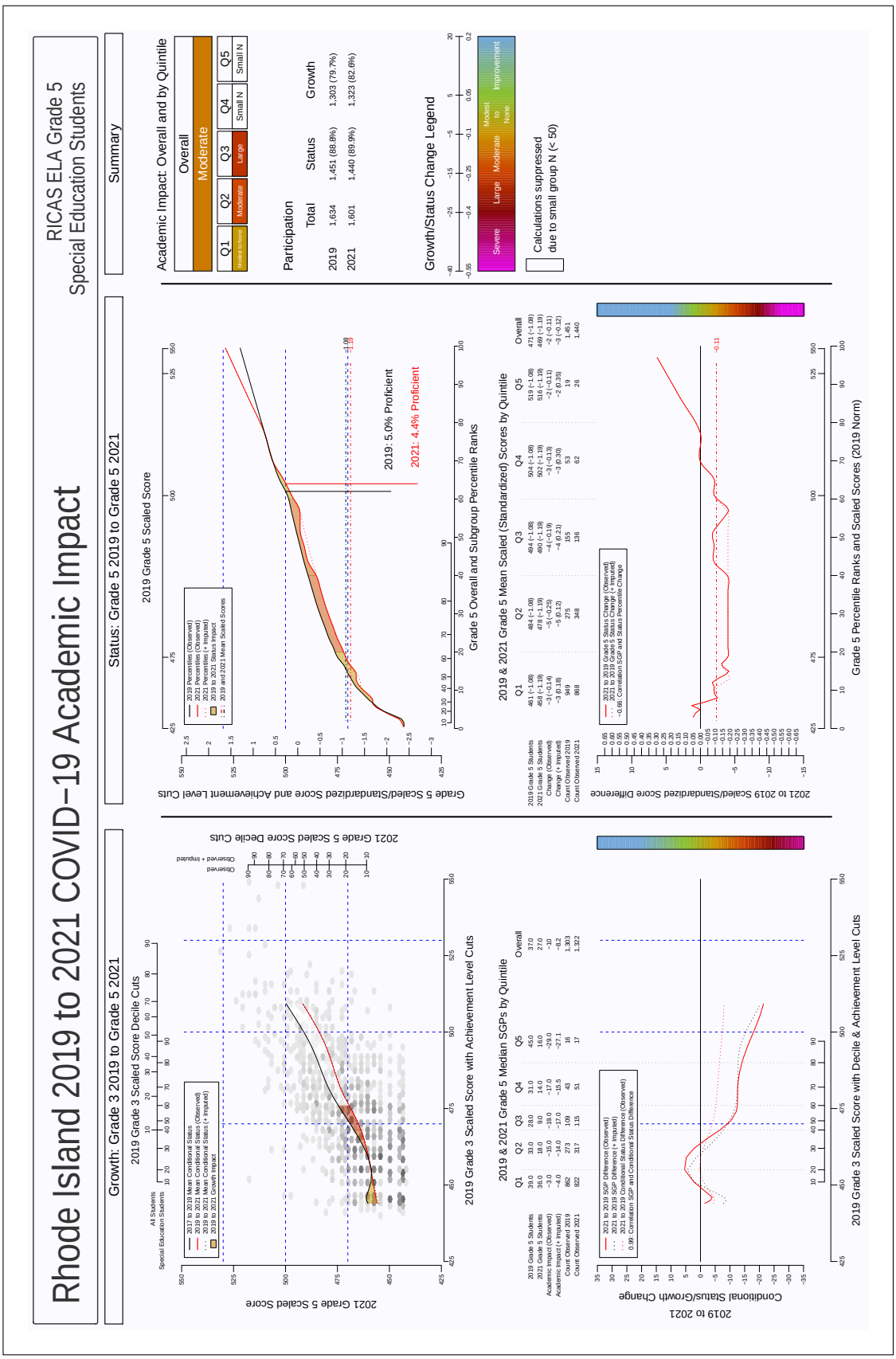


Figure 75: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, special education students

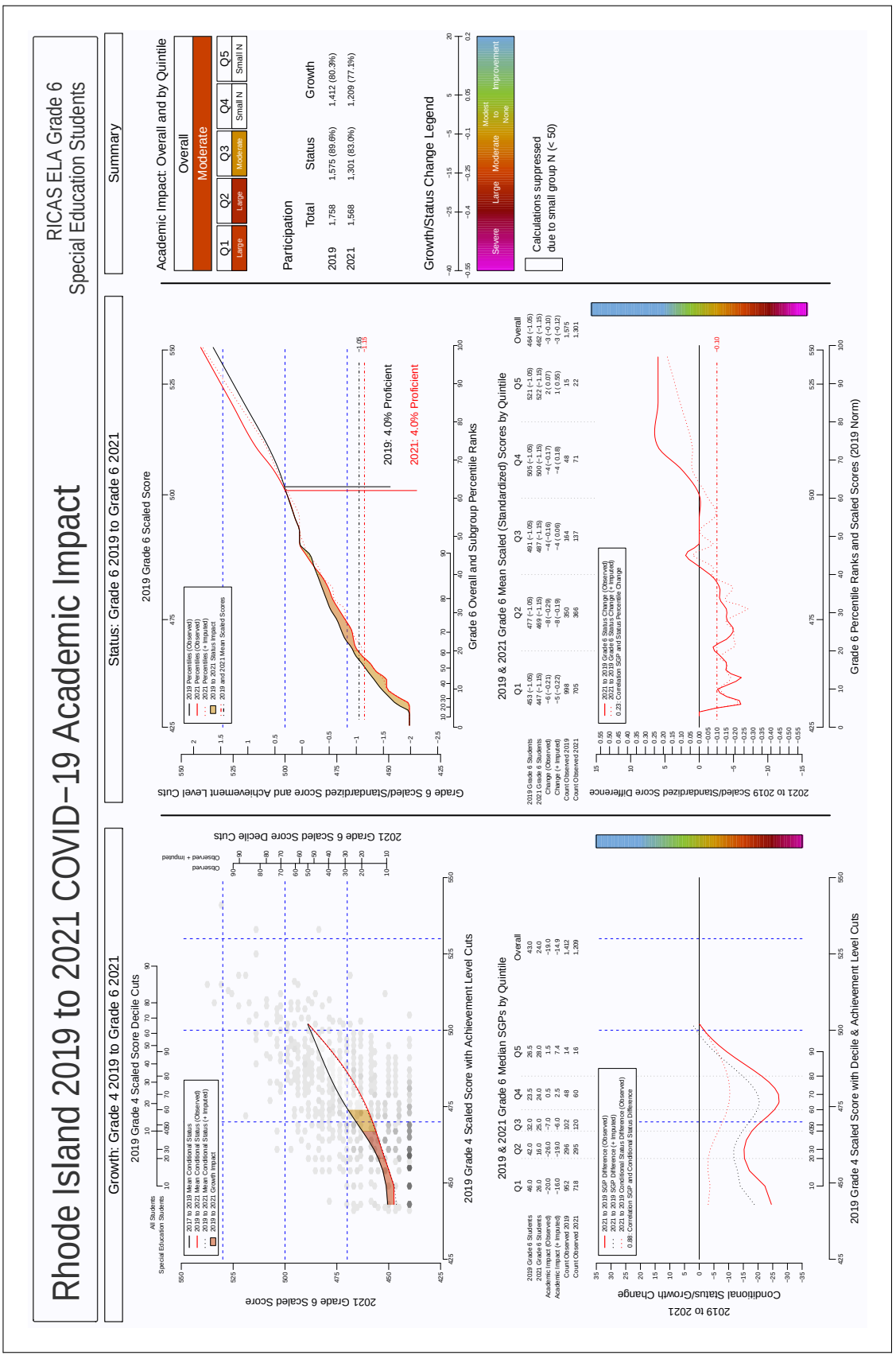


Figure 76: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, special education students

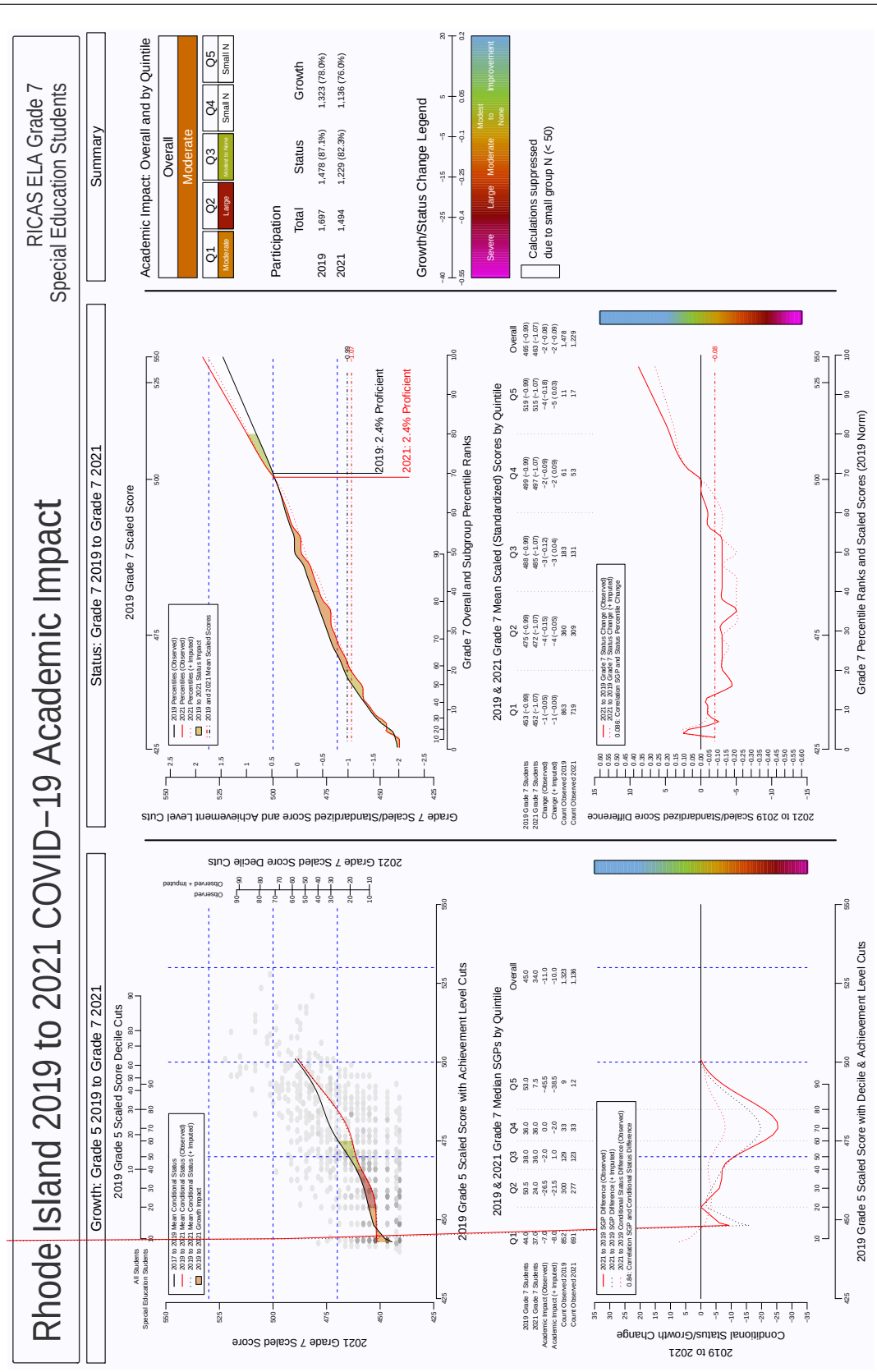


Figure 77: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, special education students

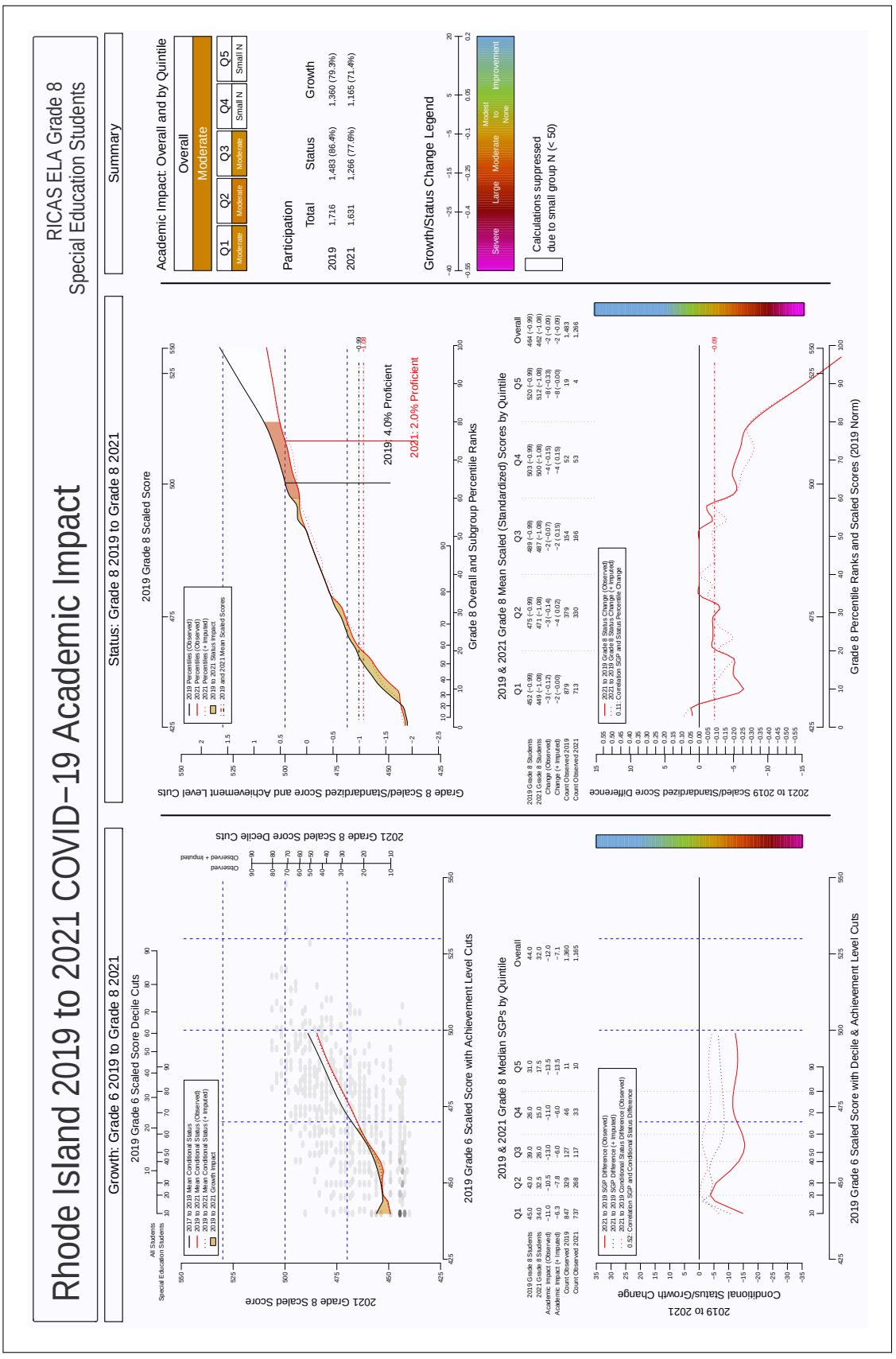


Figure 78: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, special education students

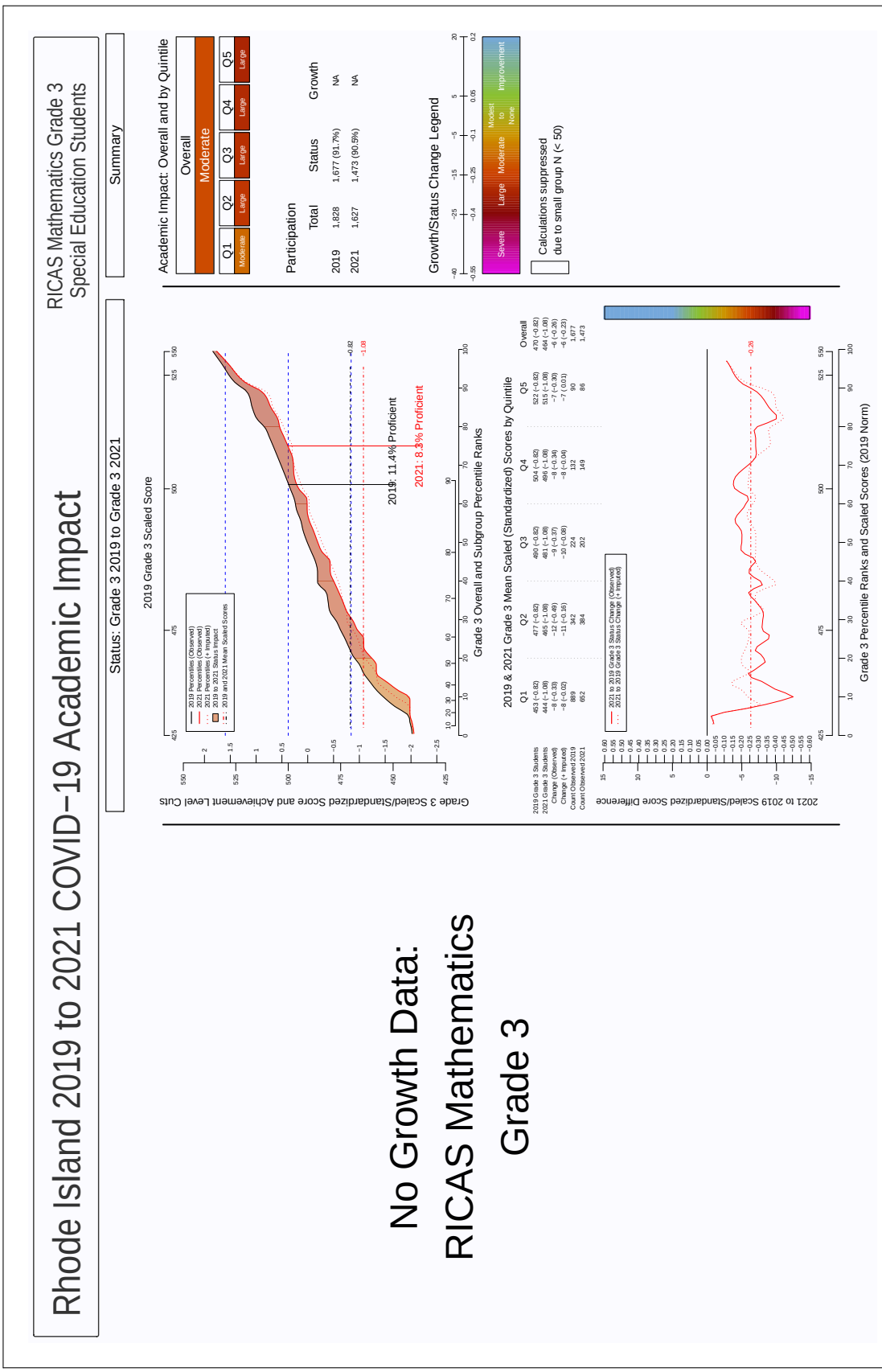


Figure 79: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, special education students

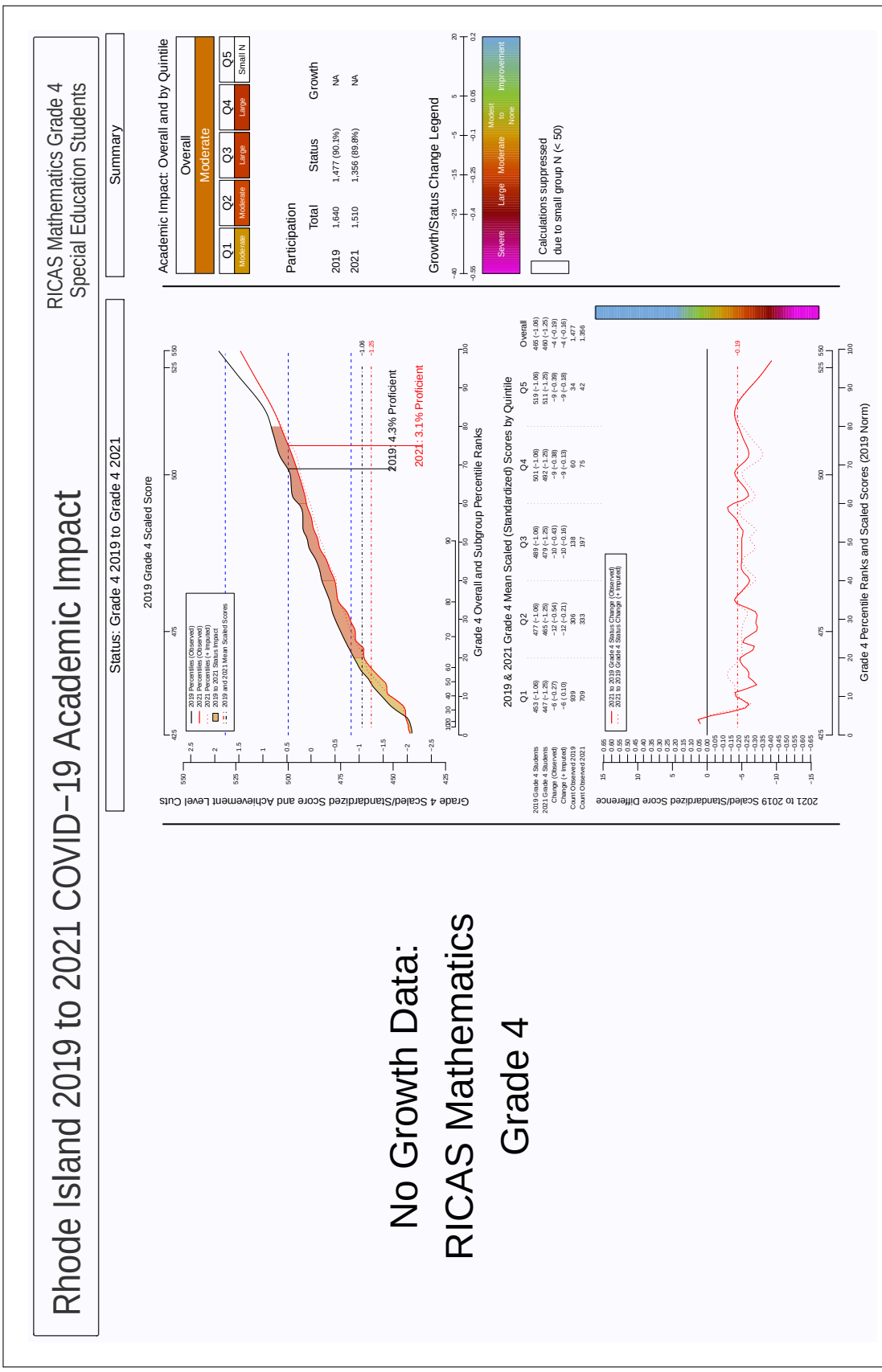


Figure 80: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, special education students

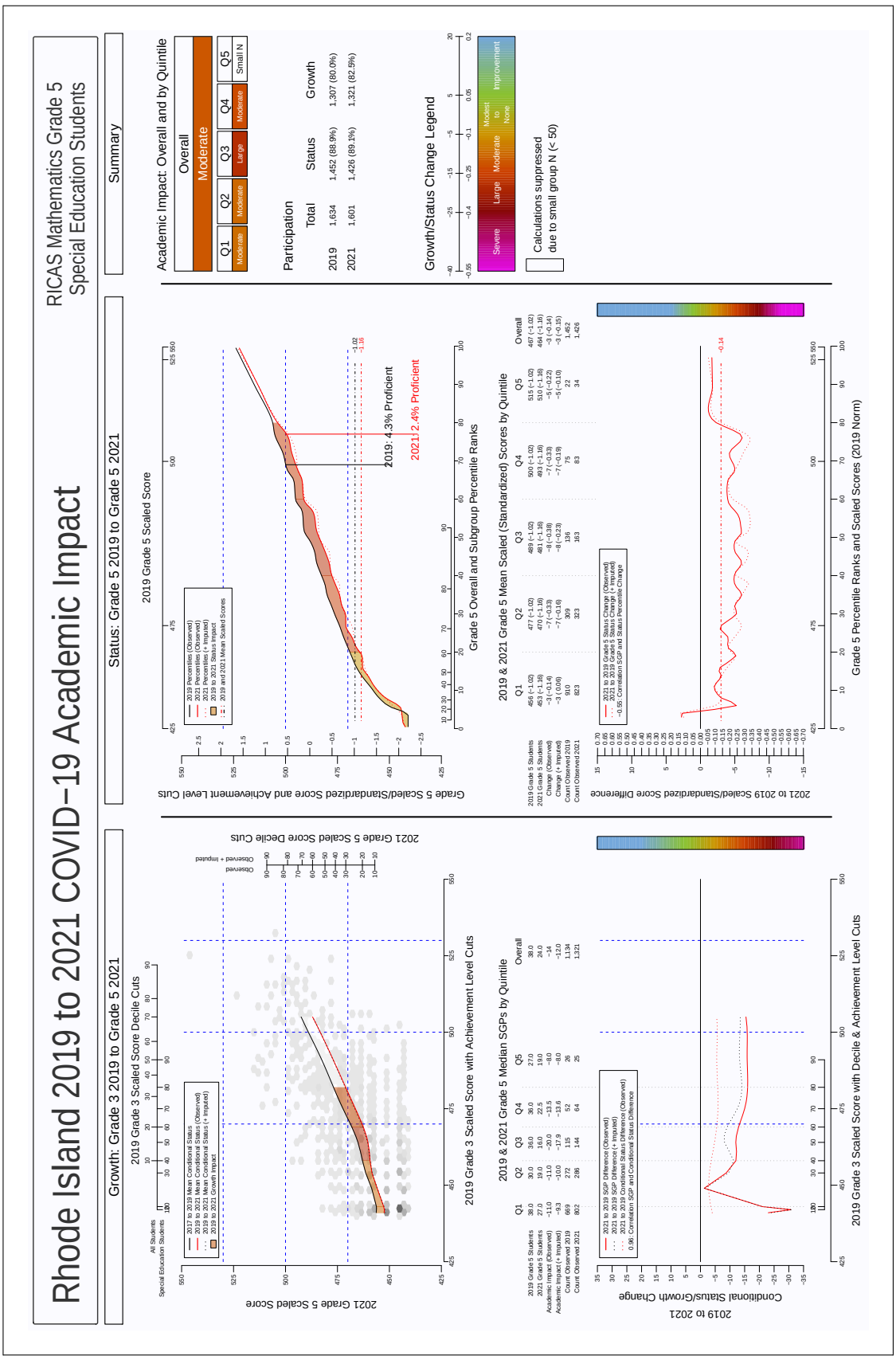


Figure 81: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, special education students

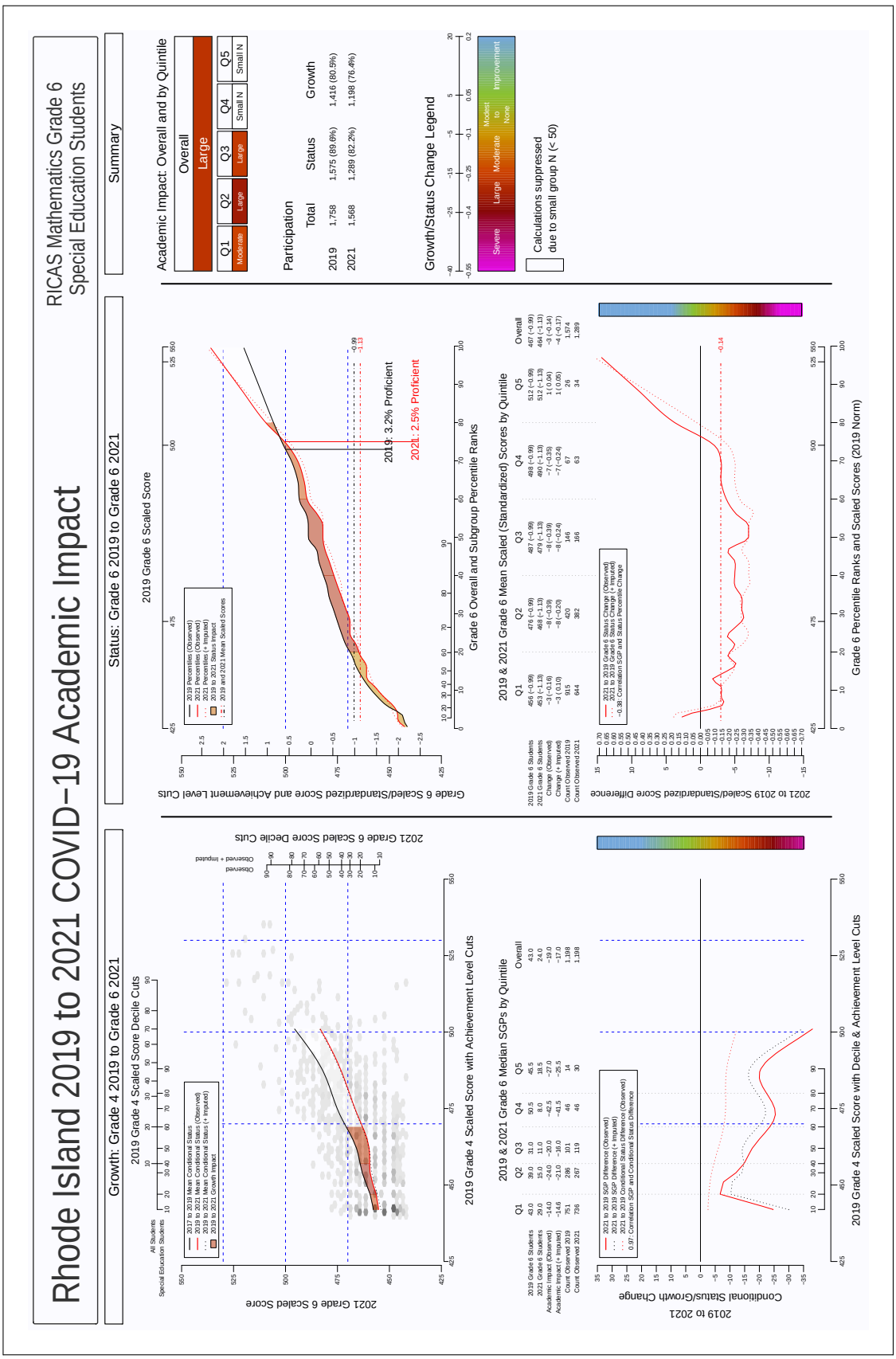


Figure 82: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, special education students

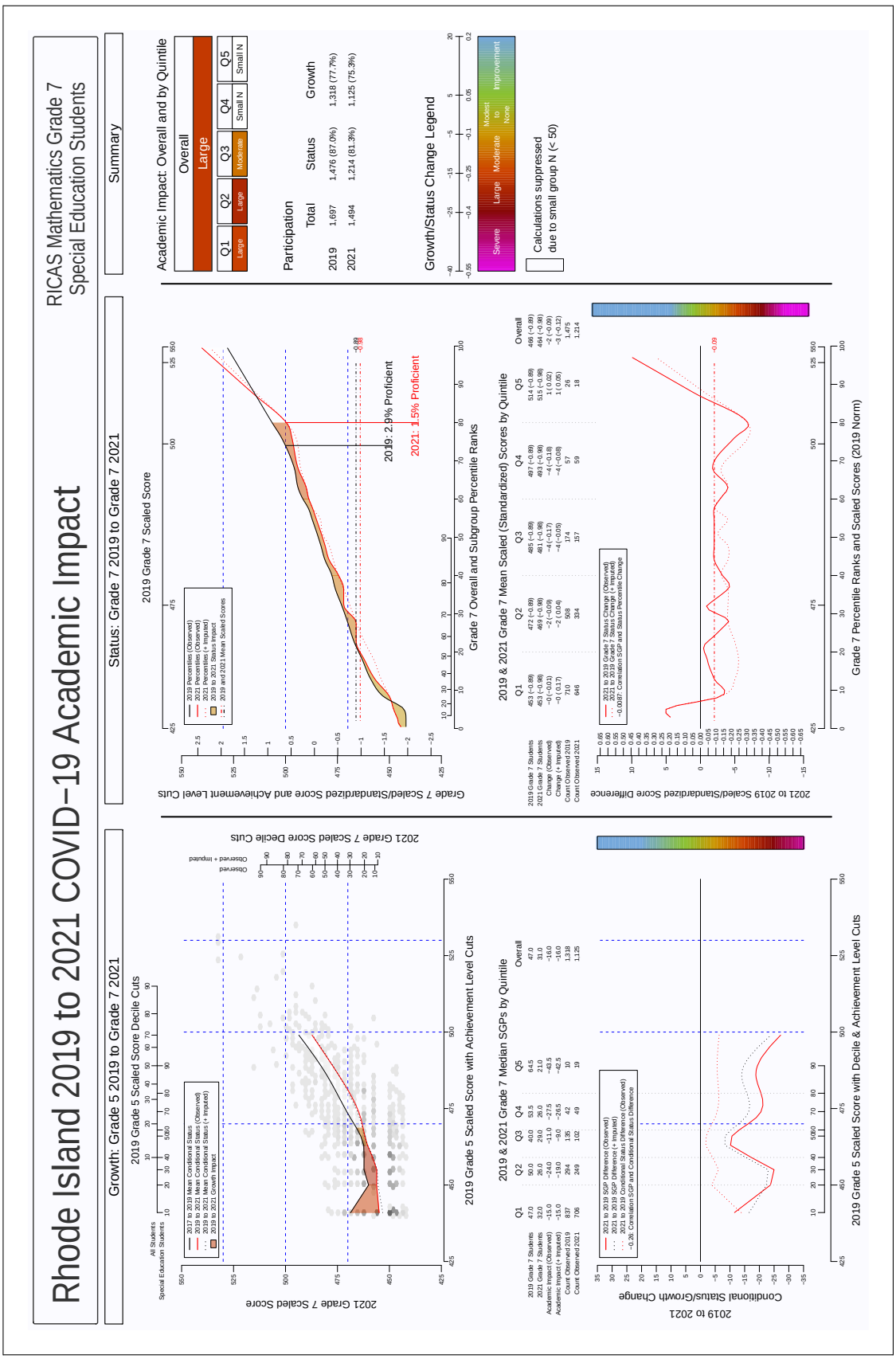


Figure 83: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, special education students

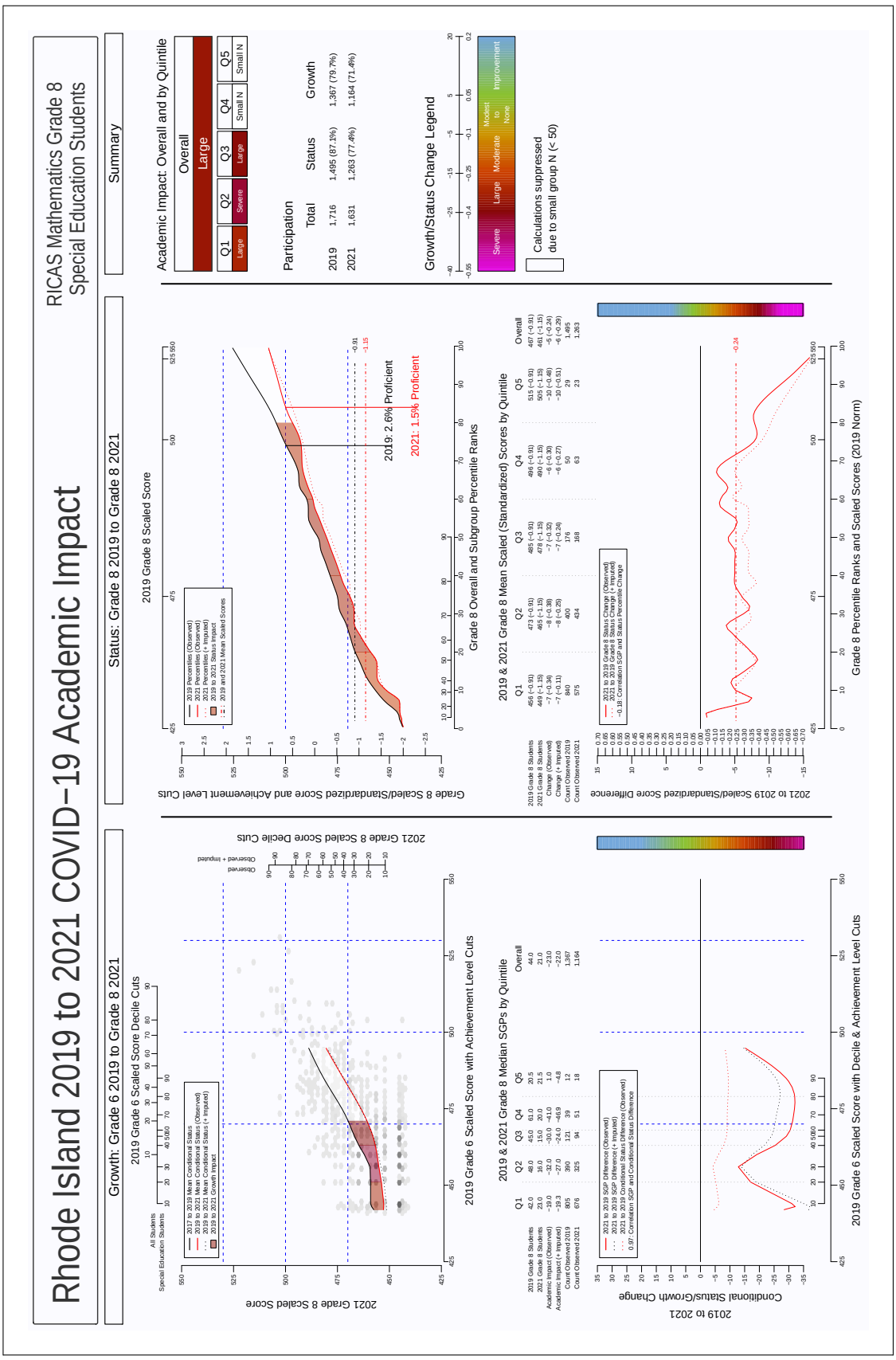


Figure 84: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, special education students

Grade by Content Area by English Language Learner

The figures on the following pages illustrate pandemic related academic impact for English language learner students grouped by grade (3, 4, 5, 6, 7 or 8), content area)

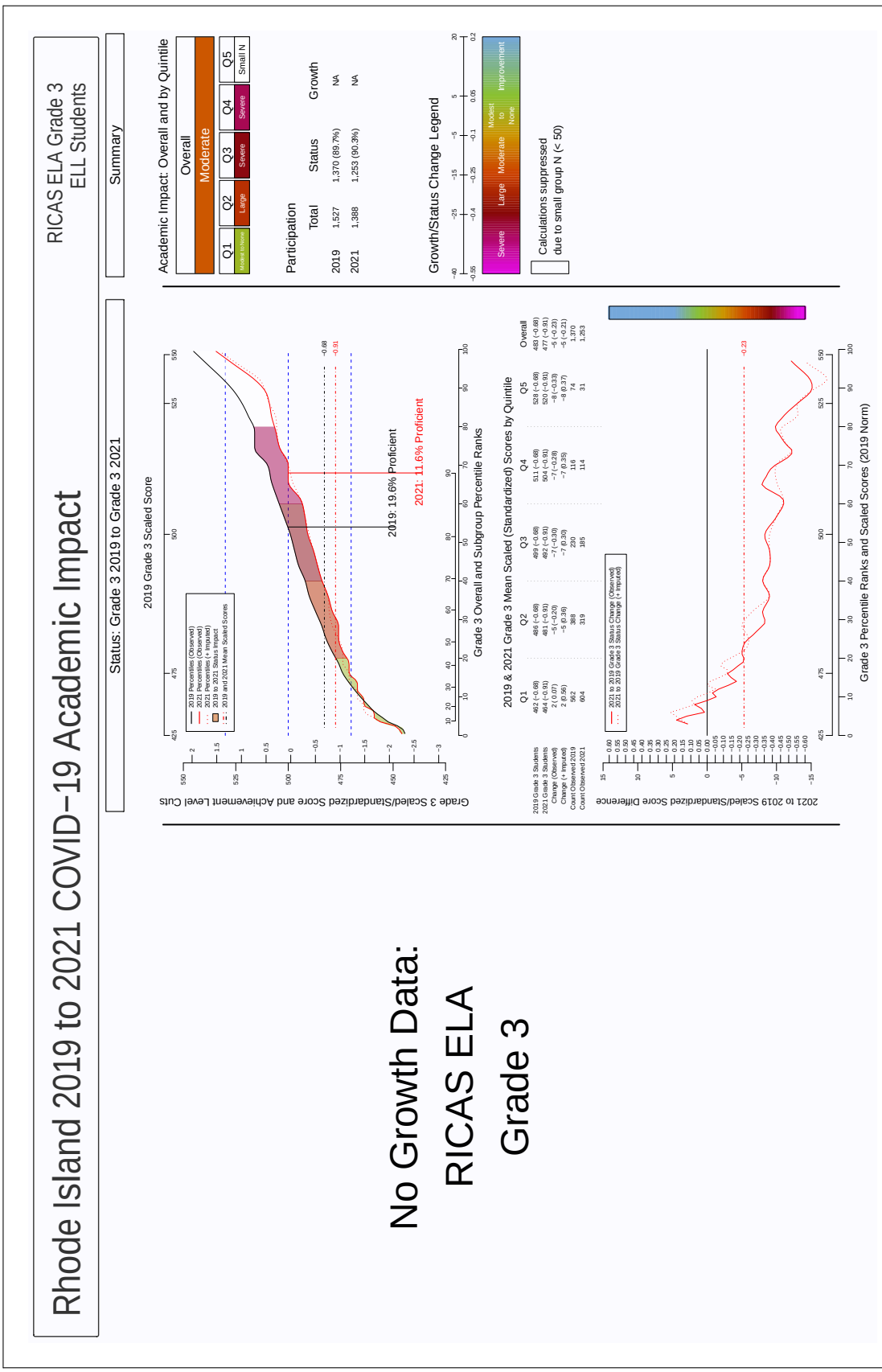


Figure 85: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, English language learner students

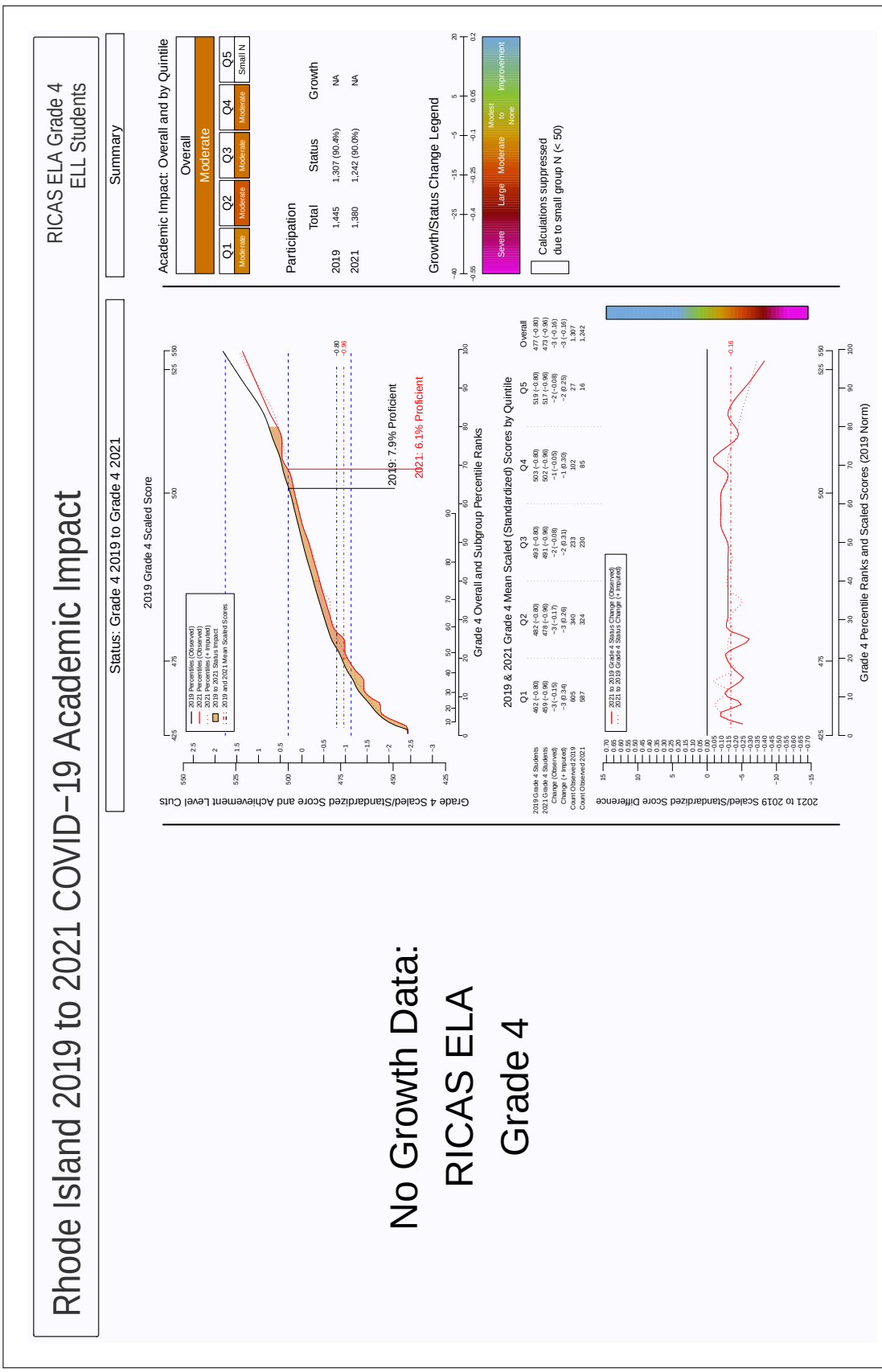


Figure 86: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, English language learner students

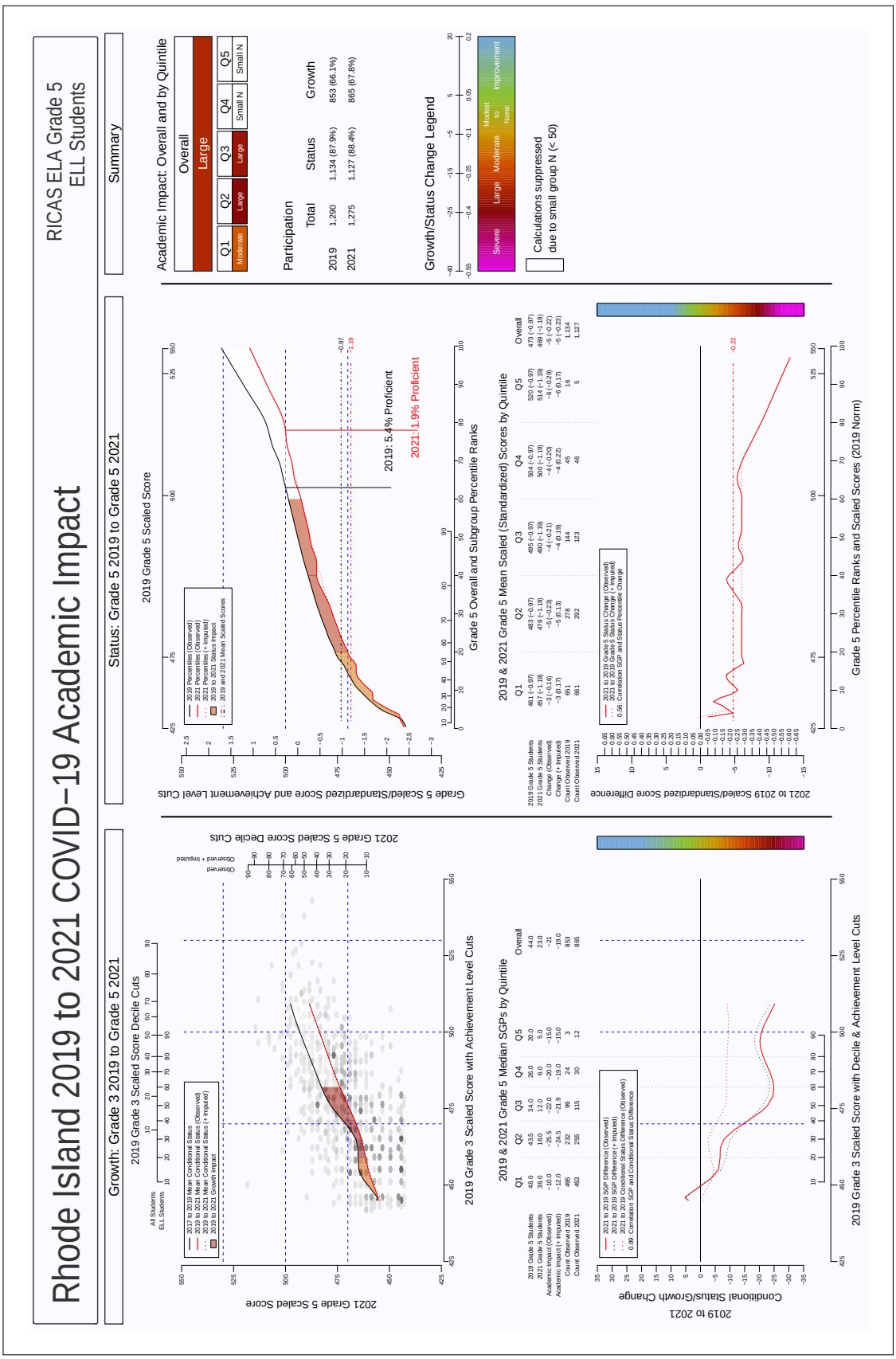


Figure 87: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, English language learner students

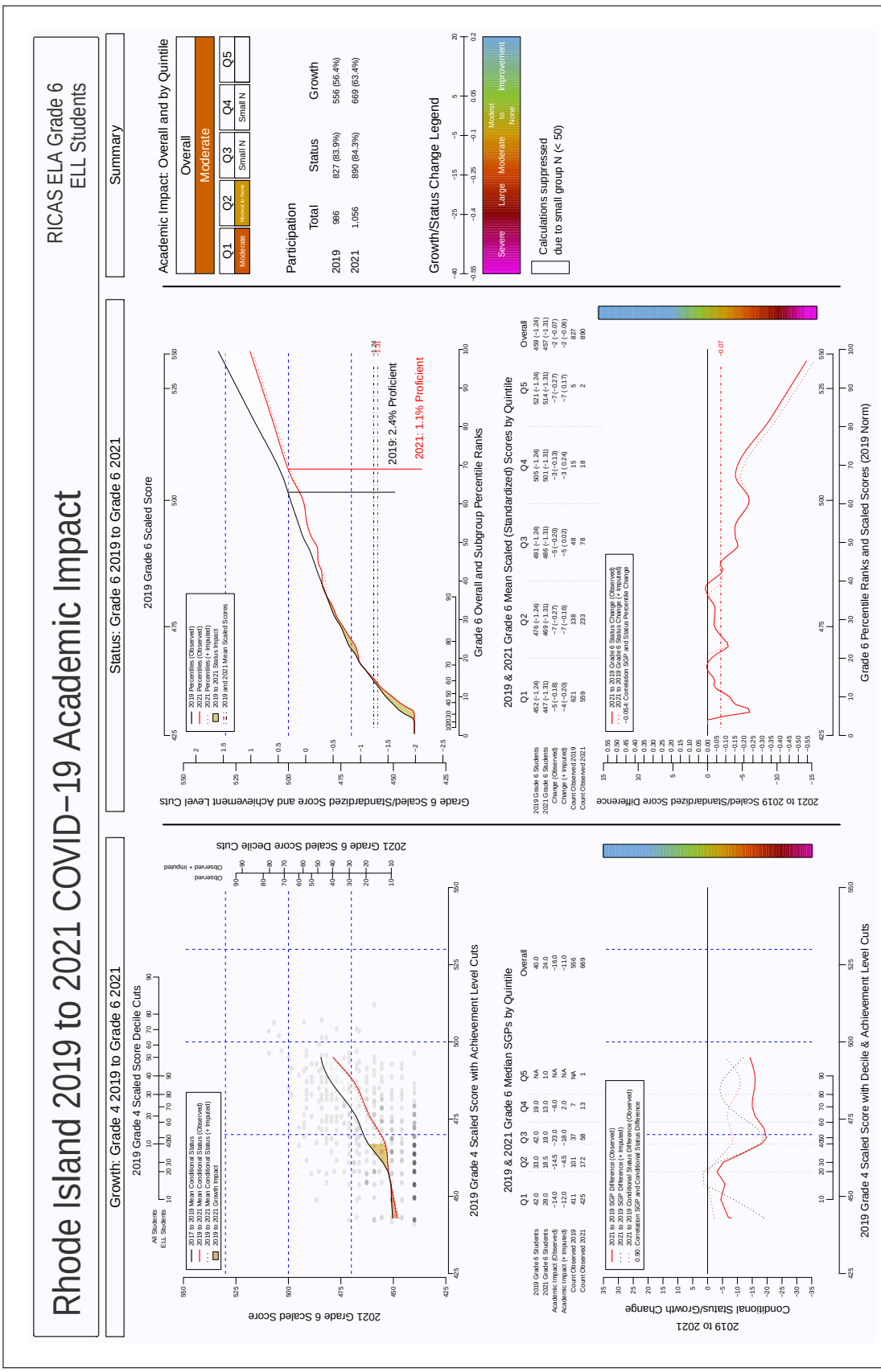


Figure 88: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, English language learner students

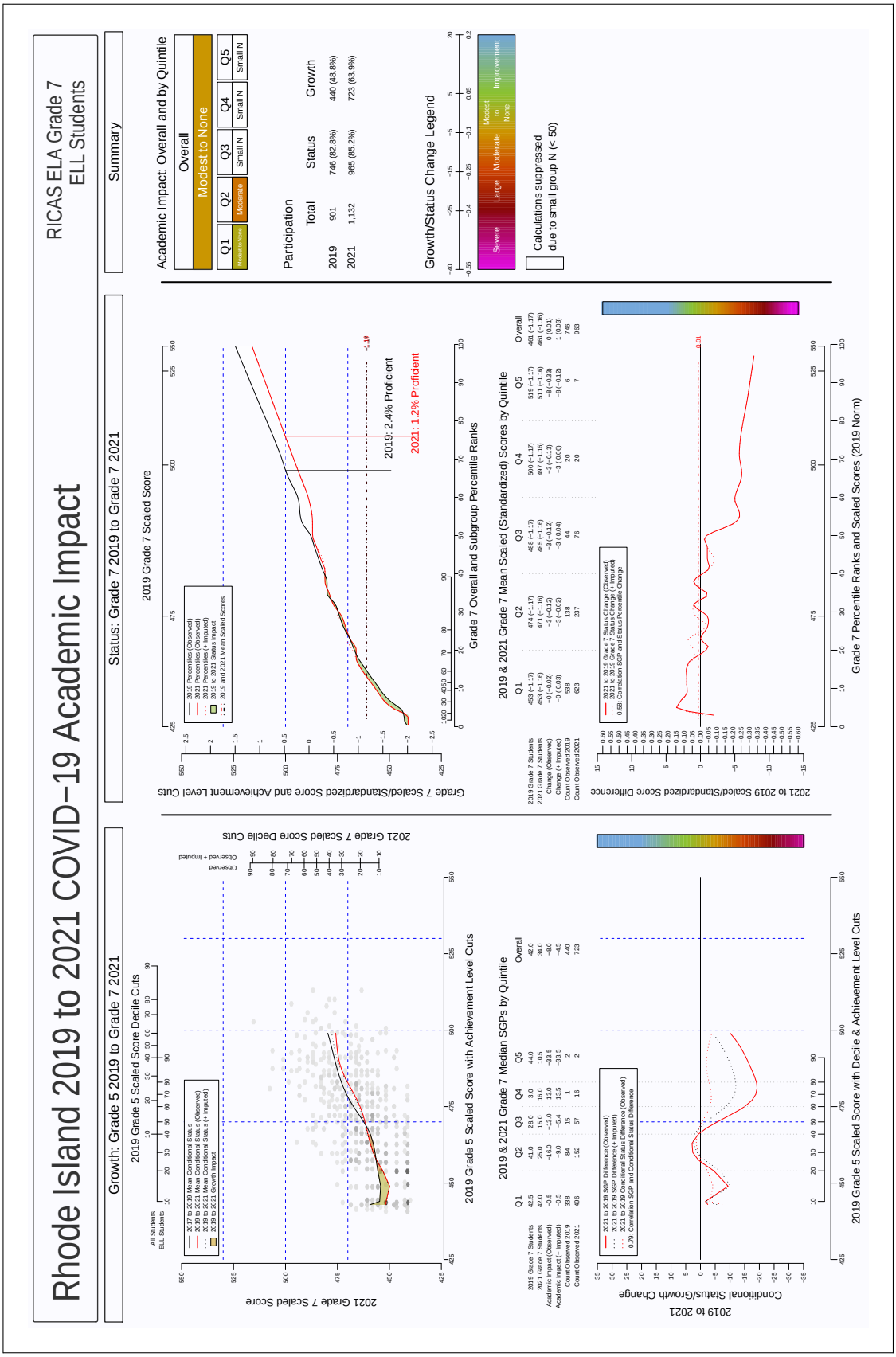


Figure 89: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, English language learner students

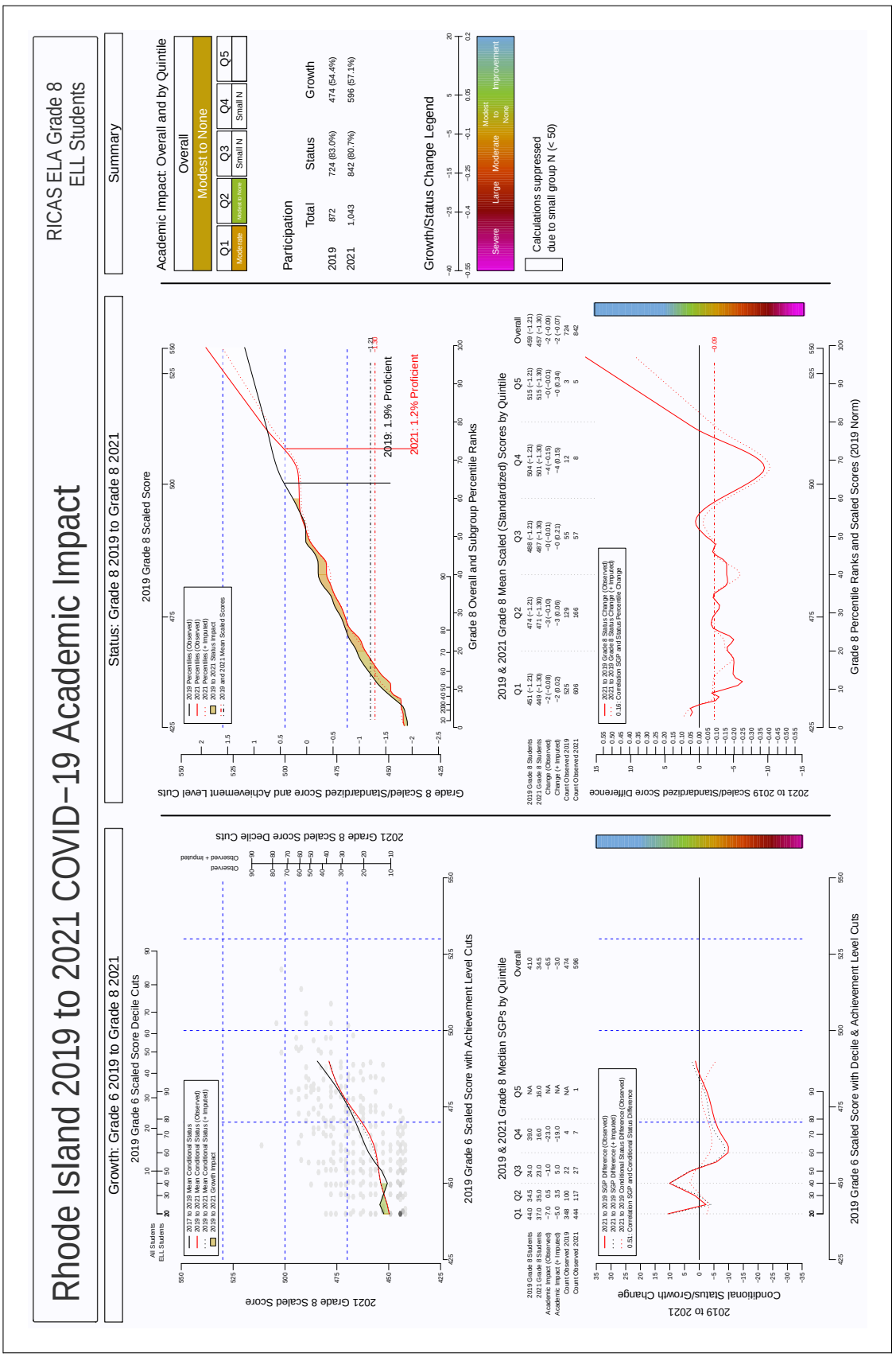


Figure 90: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, English language learner students

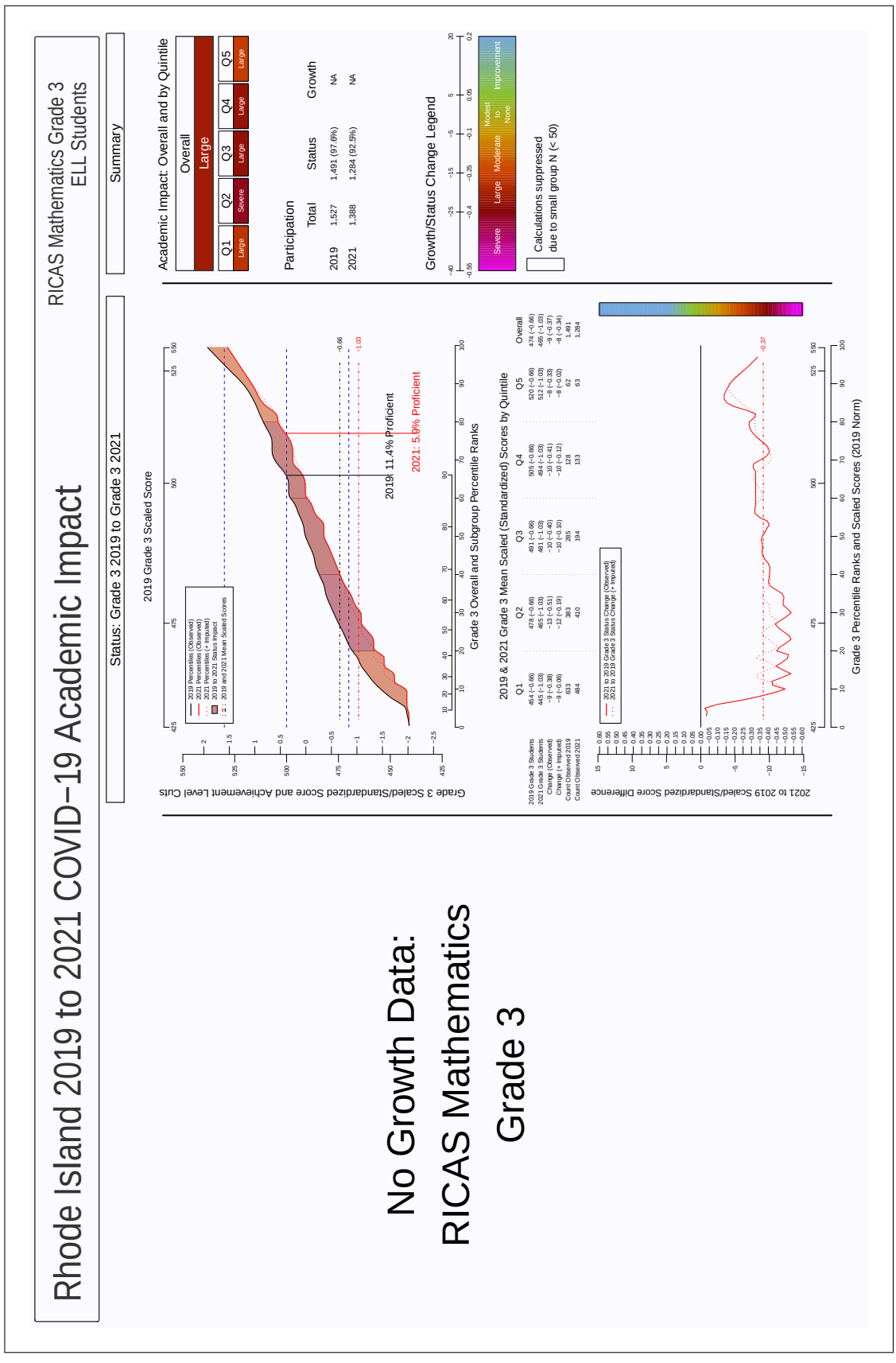


Figure 91: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, English language learner students

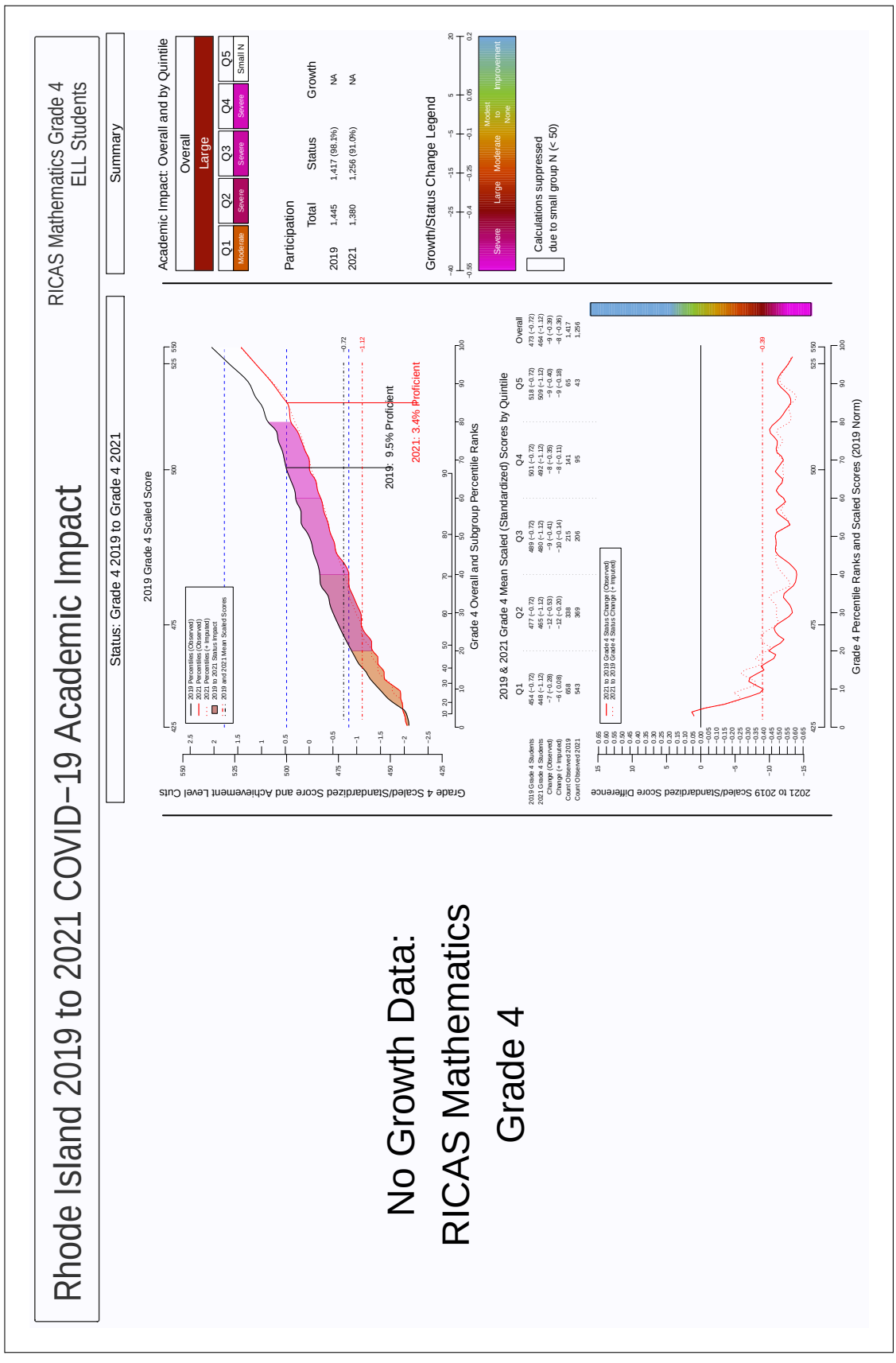


Figure 92: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, English language learner students

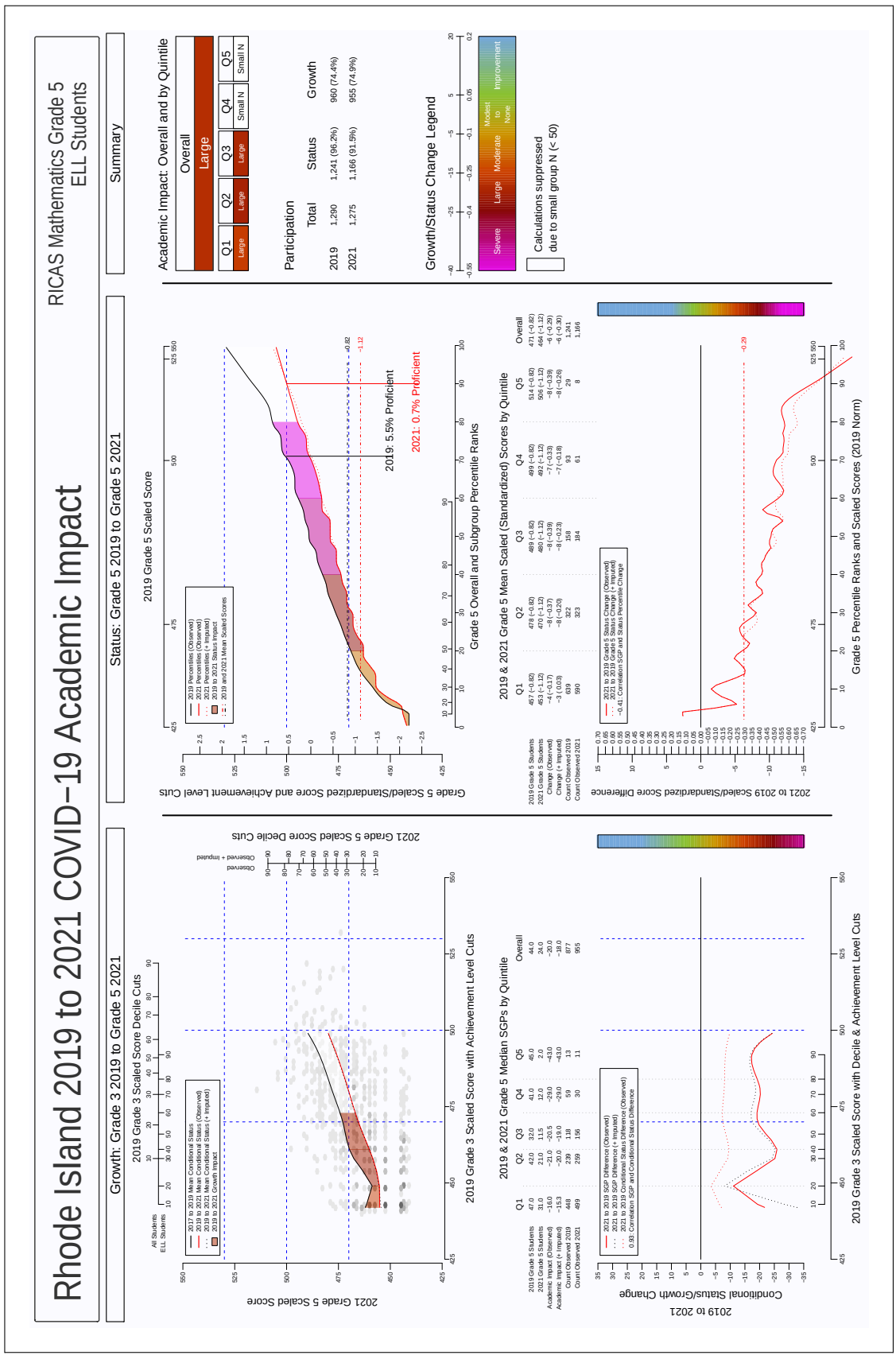


Figure 93: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, English language learner students

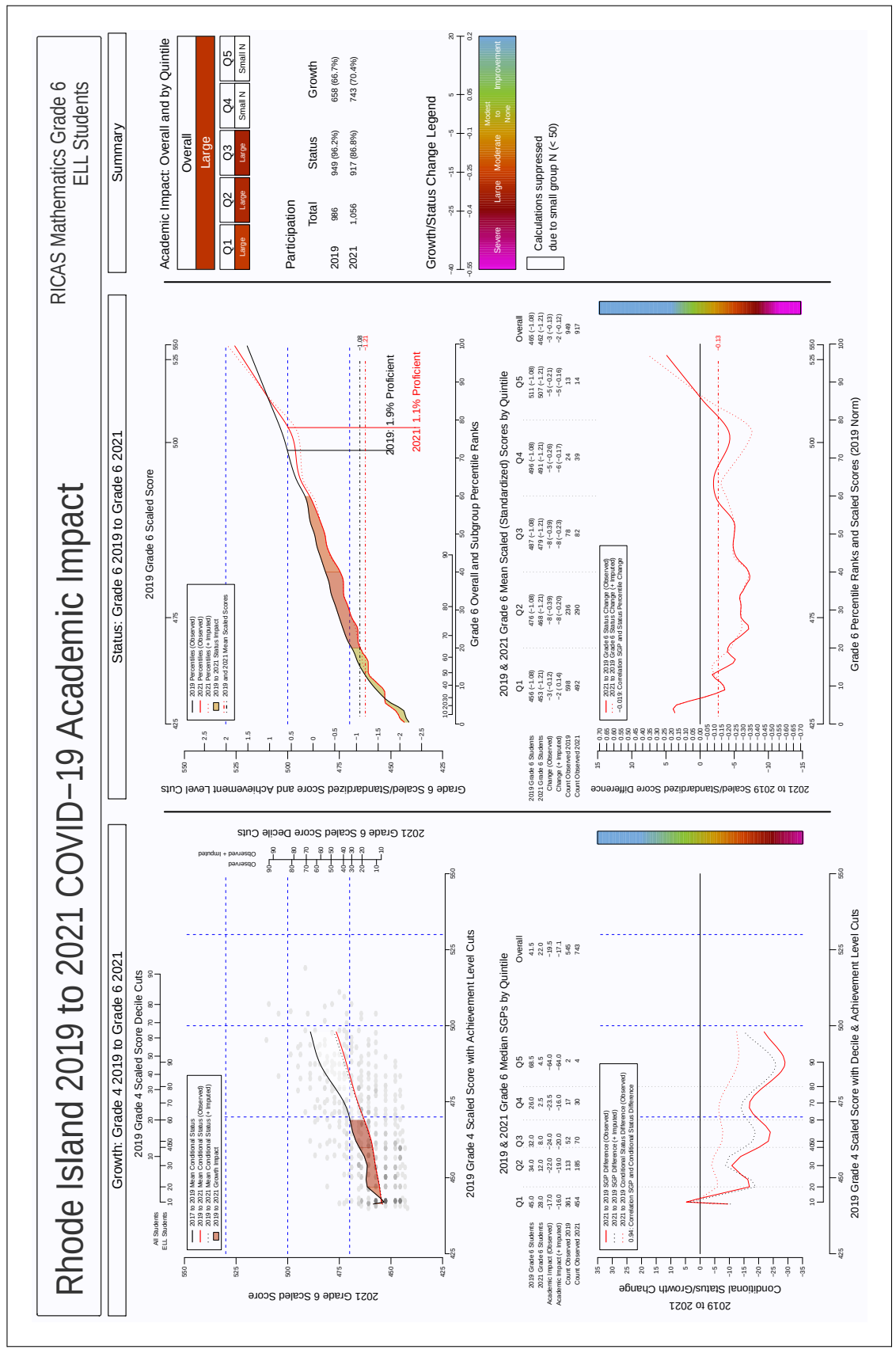


Figure 94: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, English language learner students

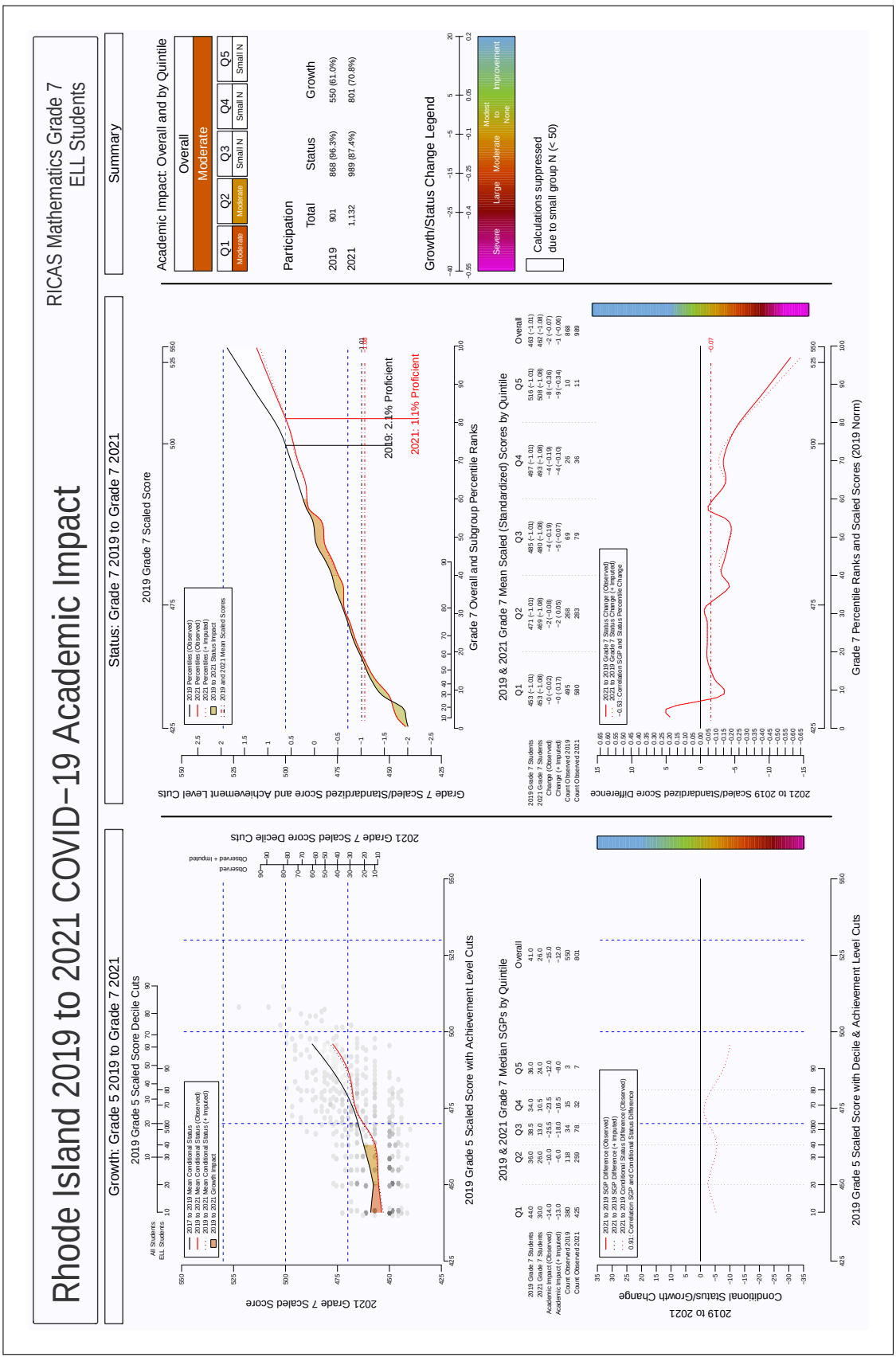


Figure 95: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, English language learner students

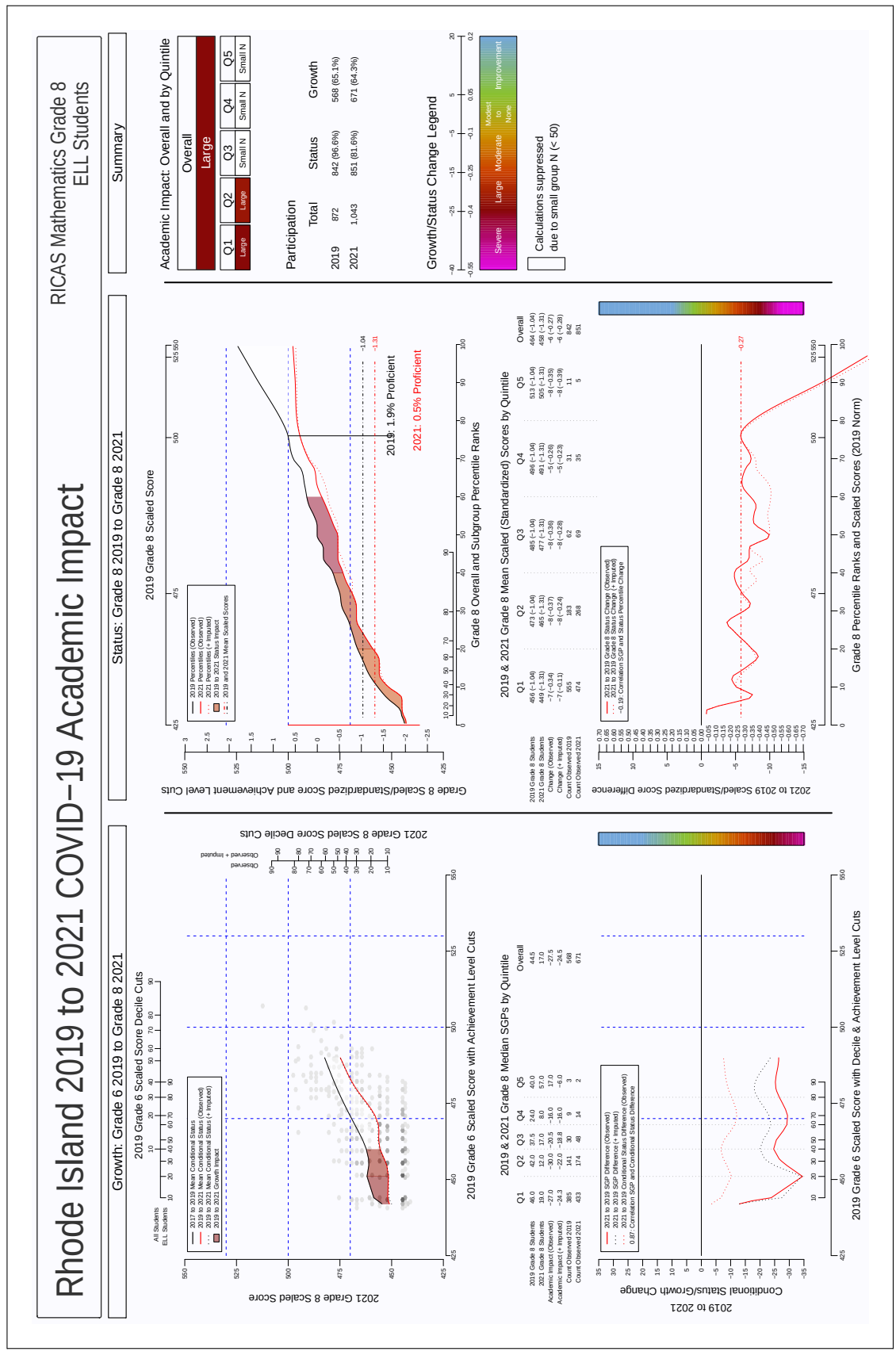


Figure 96: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, English language learner students

Grade by Content Area by Socio-Economic Status

The figures on the following pages illustrate pandemic related academic impact for free/reduced lunch students grouped by grade (3, 4, 5, 6, 7 or 8), content area)

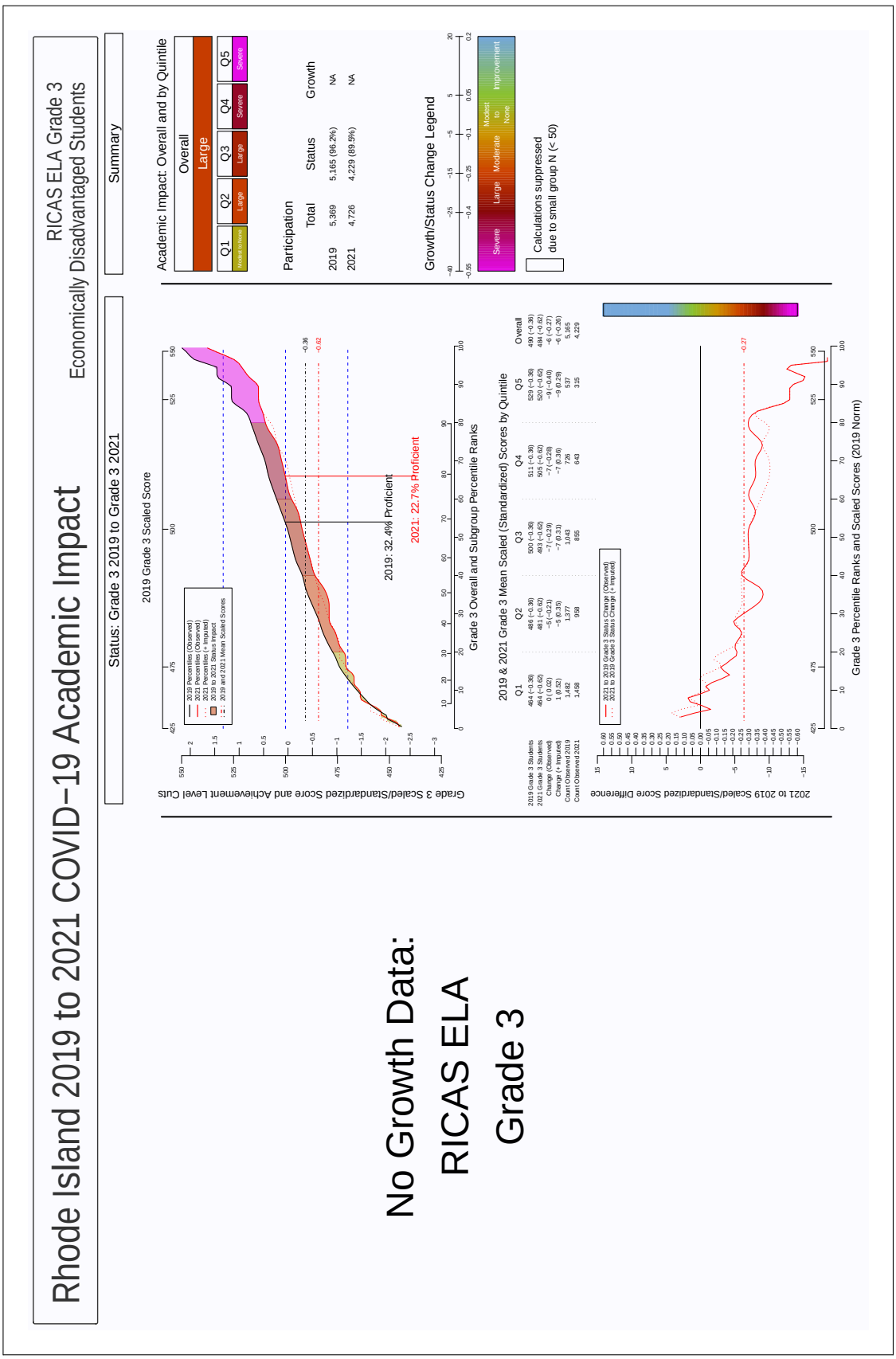


Figure 97: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, free/reduced lunch students

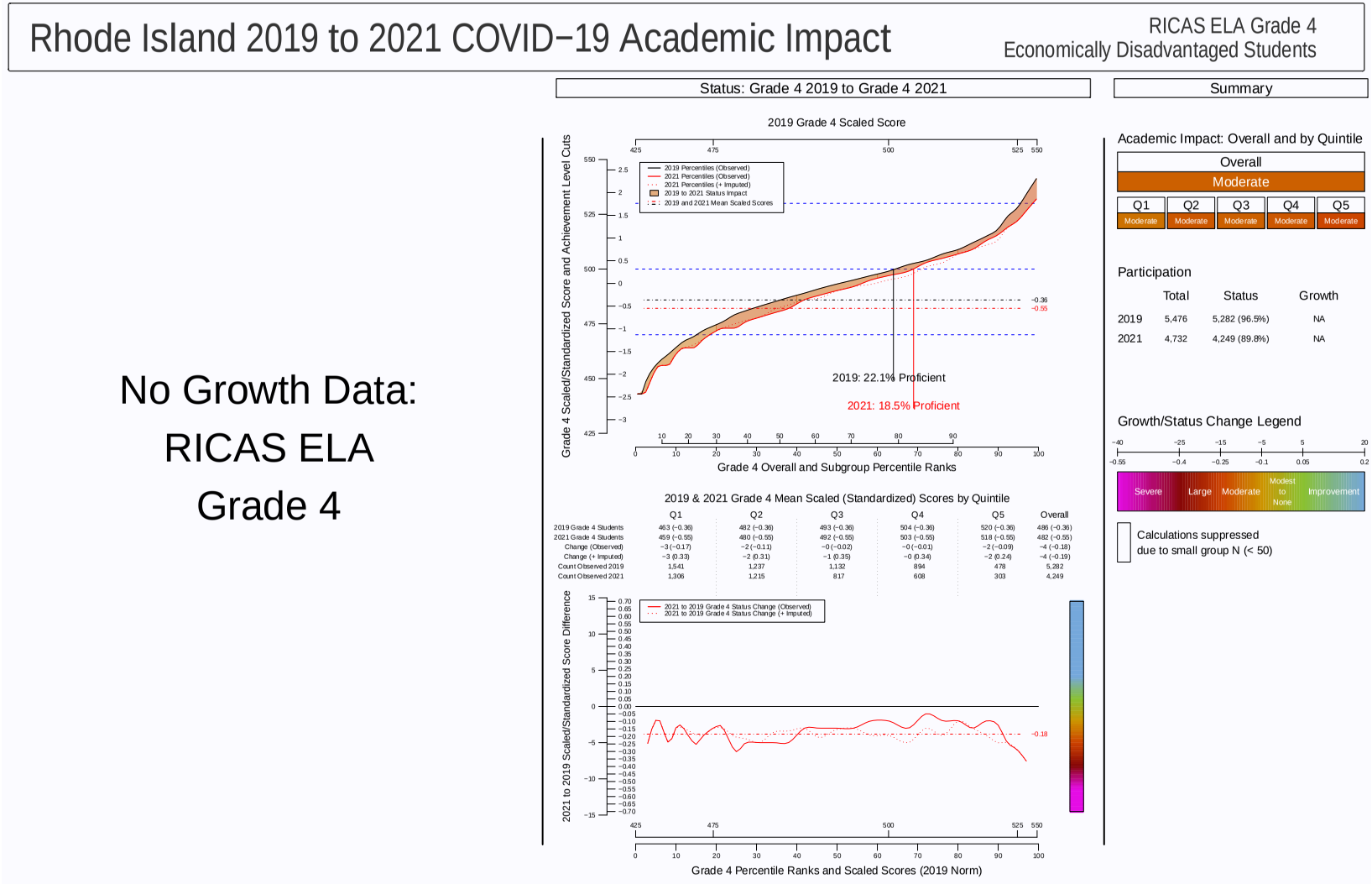


Figure 98: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, free/reduced lunch students

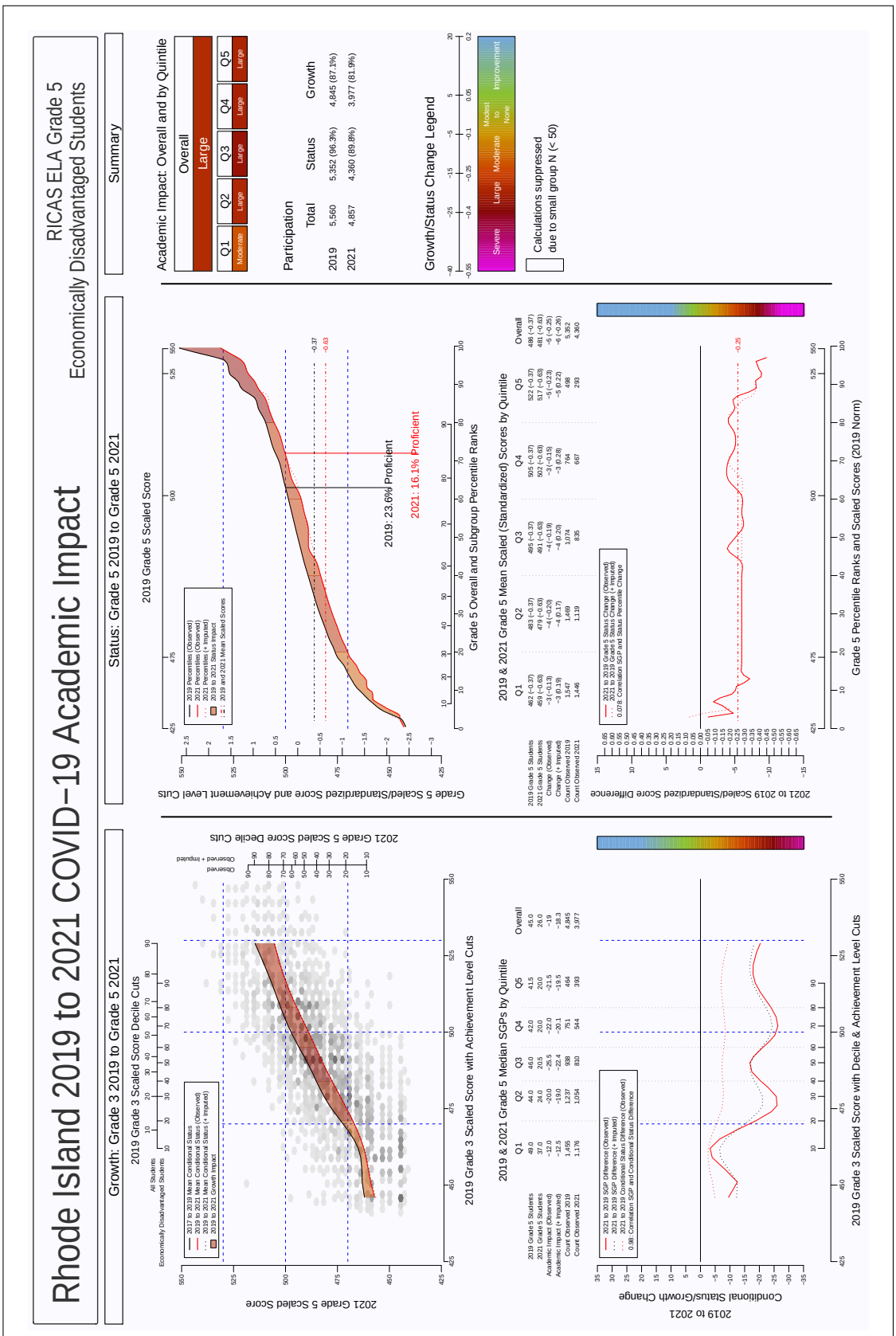


Figure 99: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, free/reduced lunch students

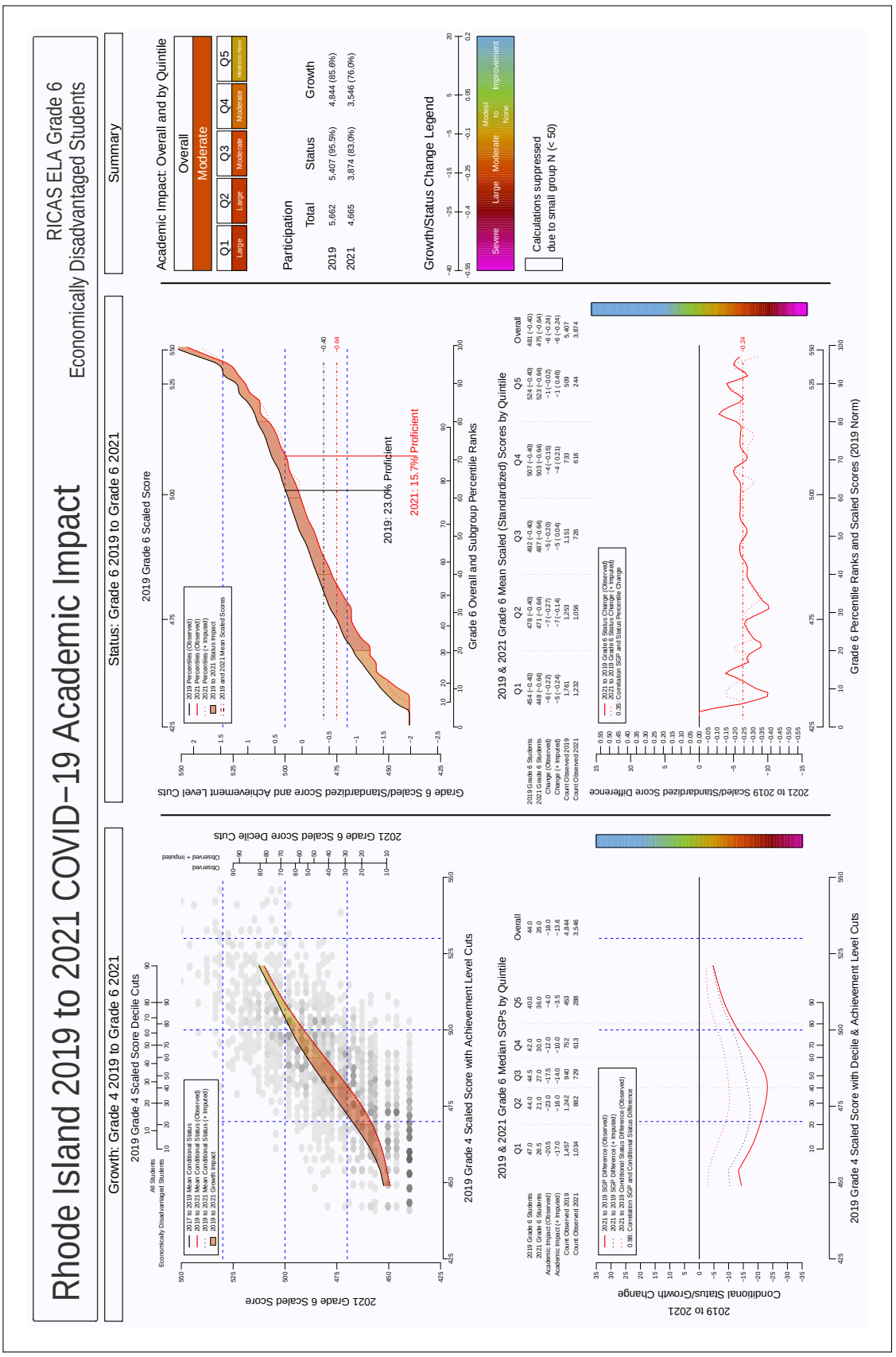


Figure 100: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, free/reduced lunch students

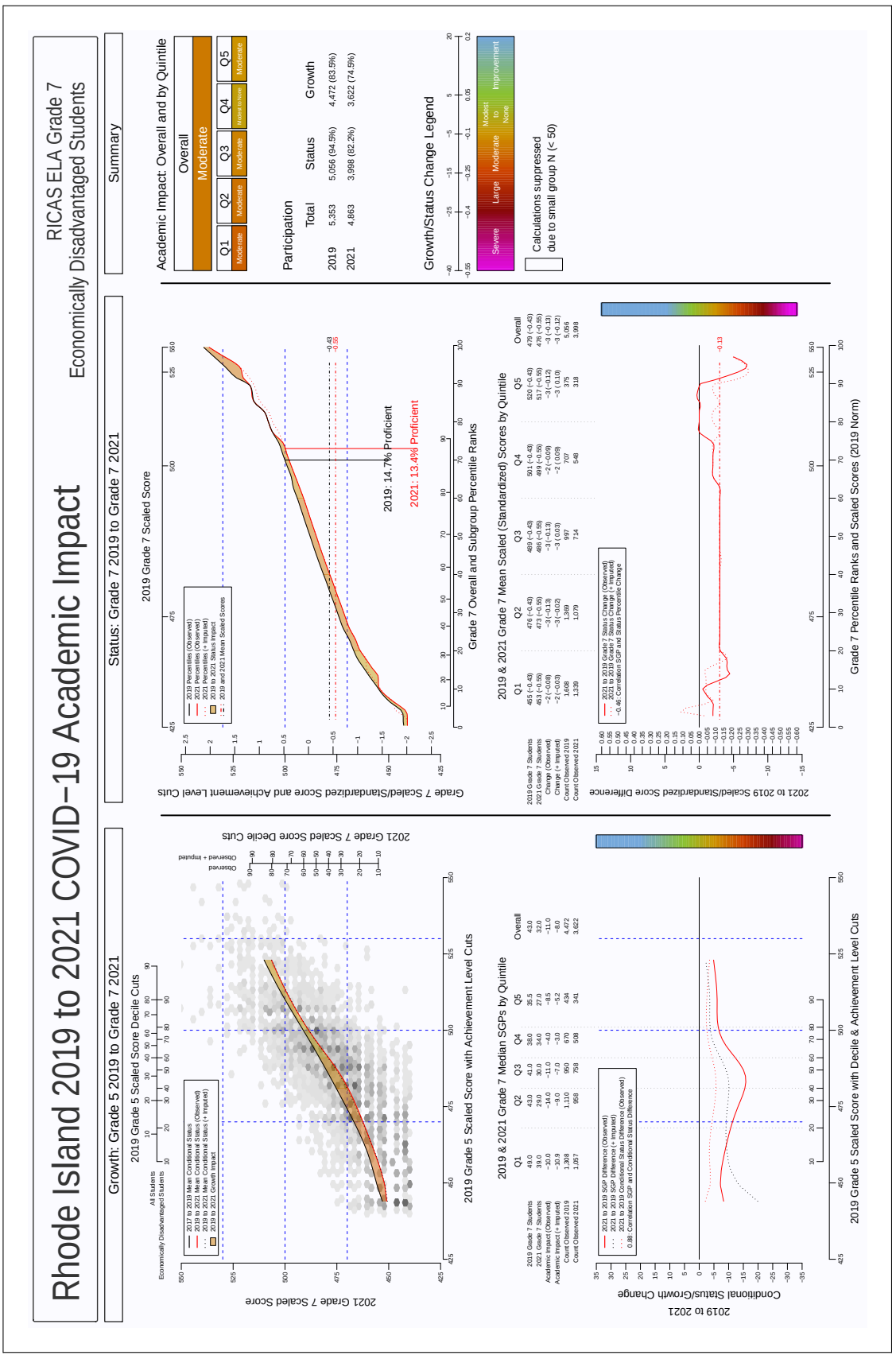


Figure 101: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, free/reduced lunch students

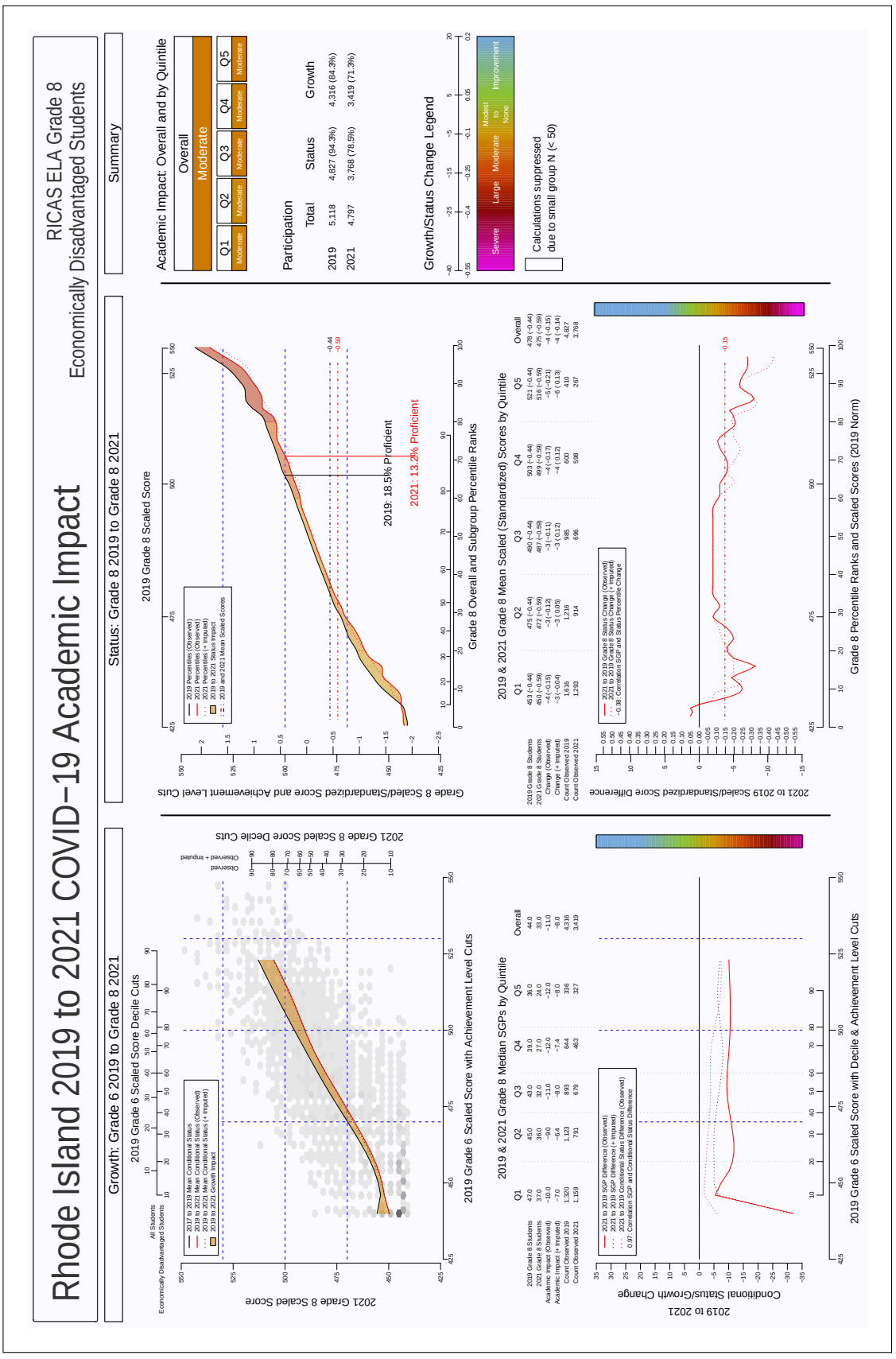


Figure 102: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, free/reduced lunch students

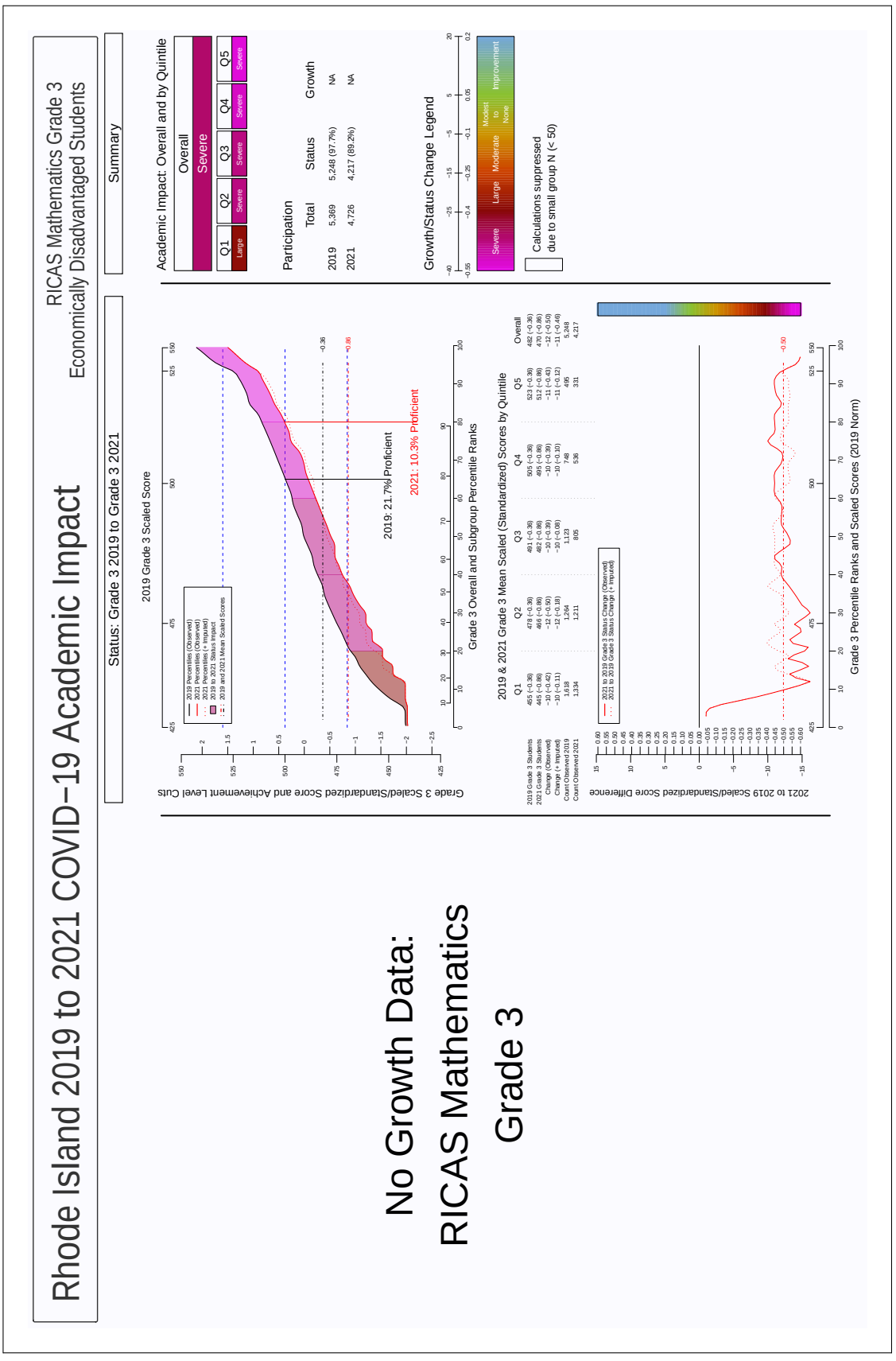


Figure 103: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, free/reduced lunch students

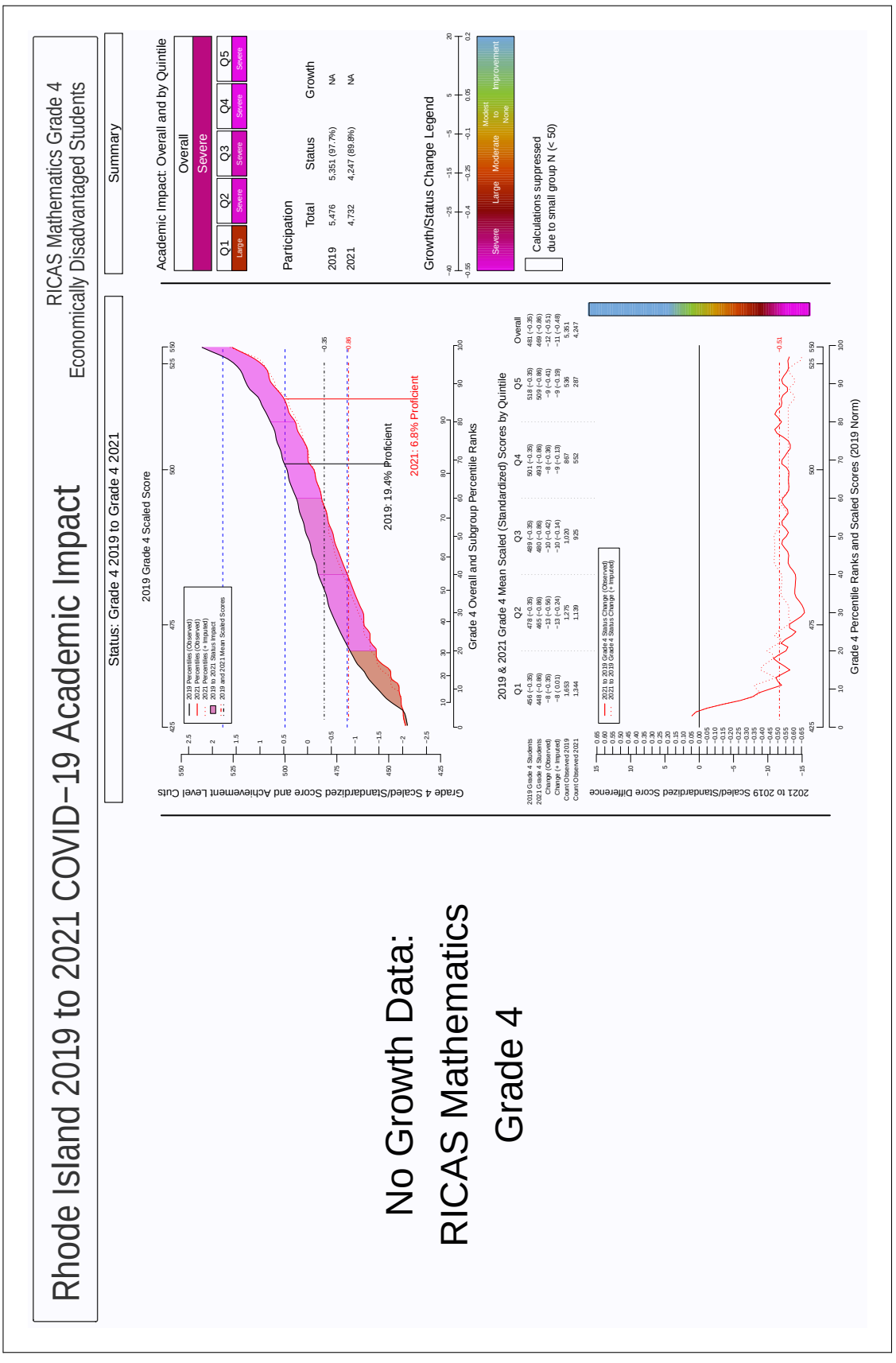


Figure 104: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, free/reduced lunch students

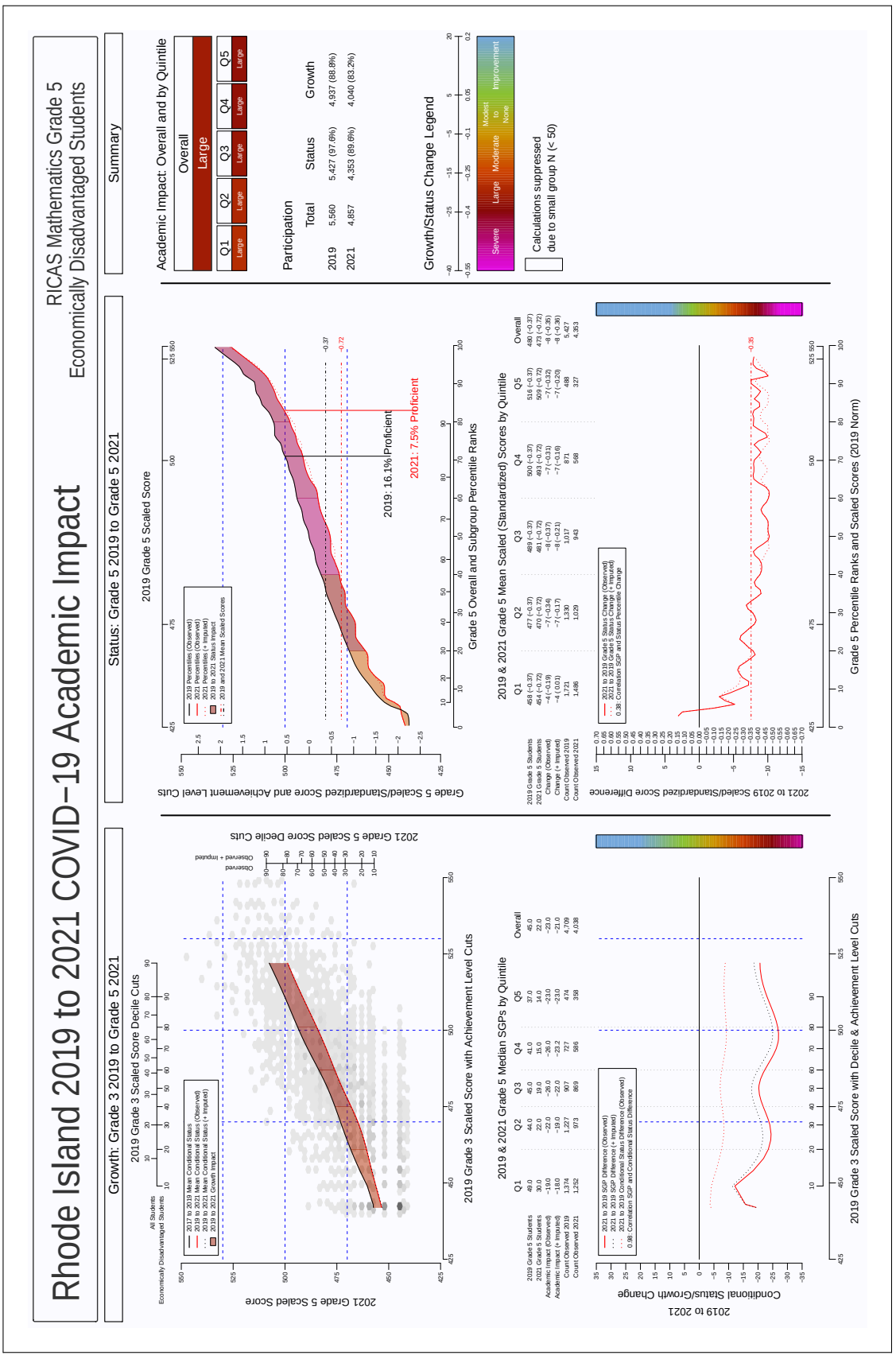


Figure 105: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, free/reduced lunch students

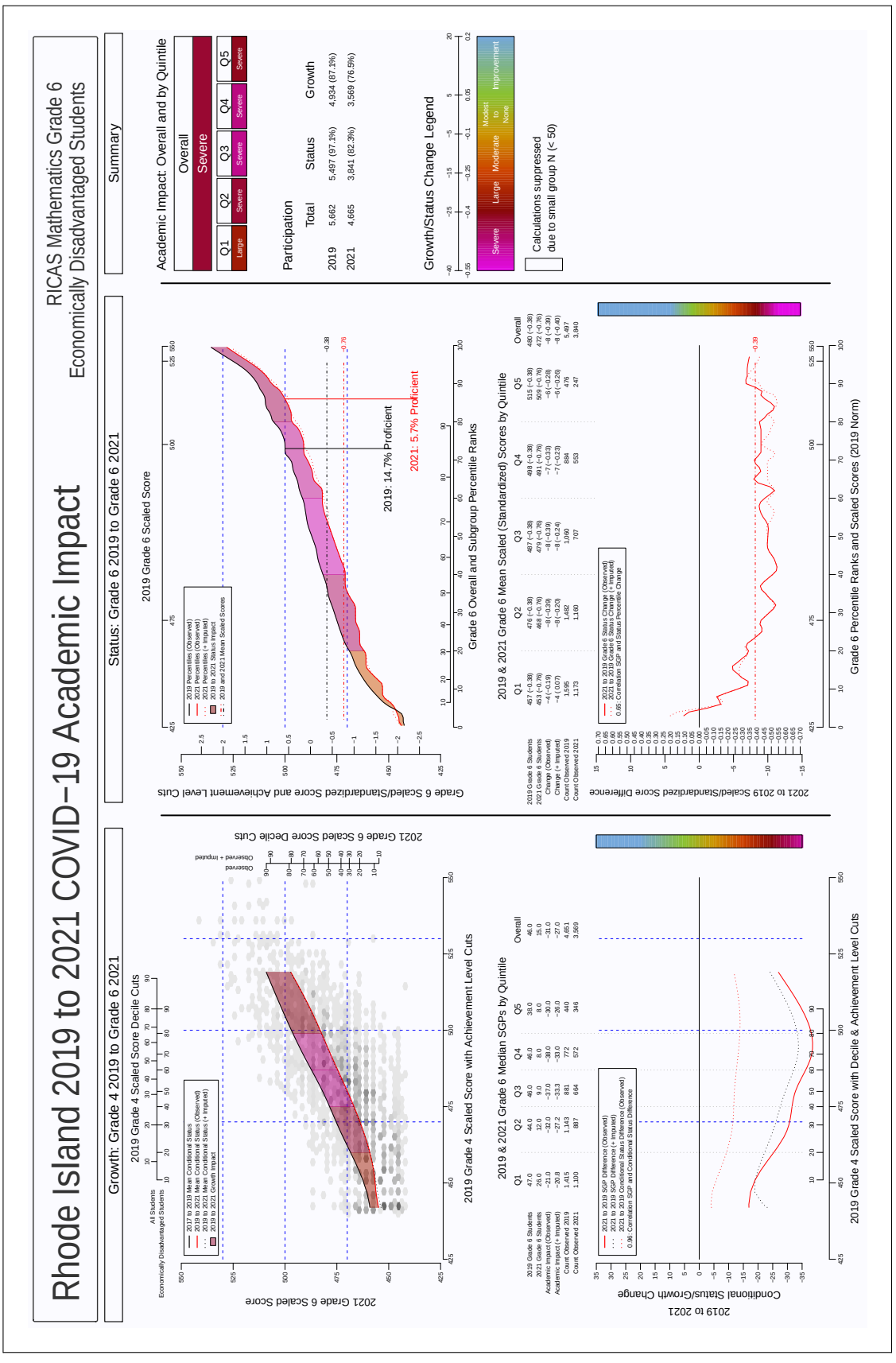


Figure 106: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, free/reduced lunch students

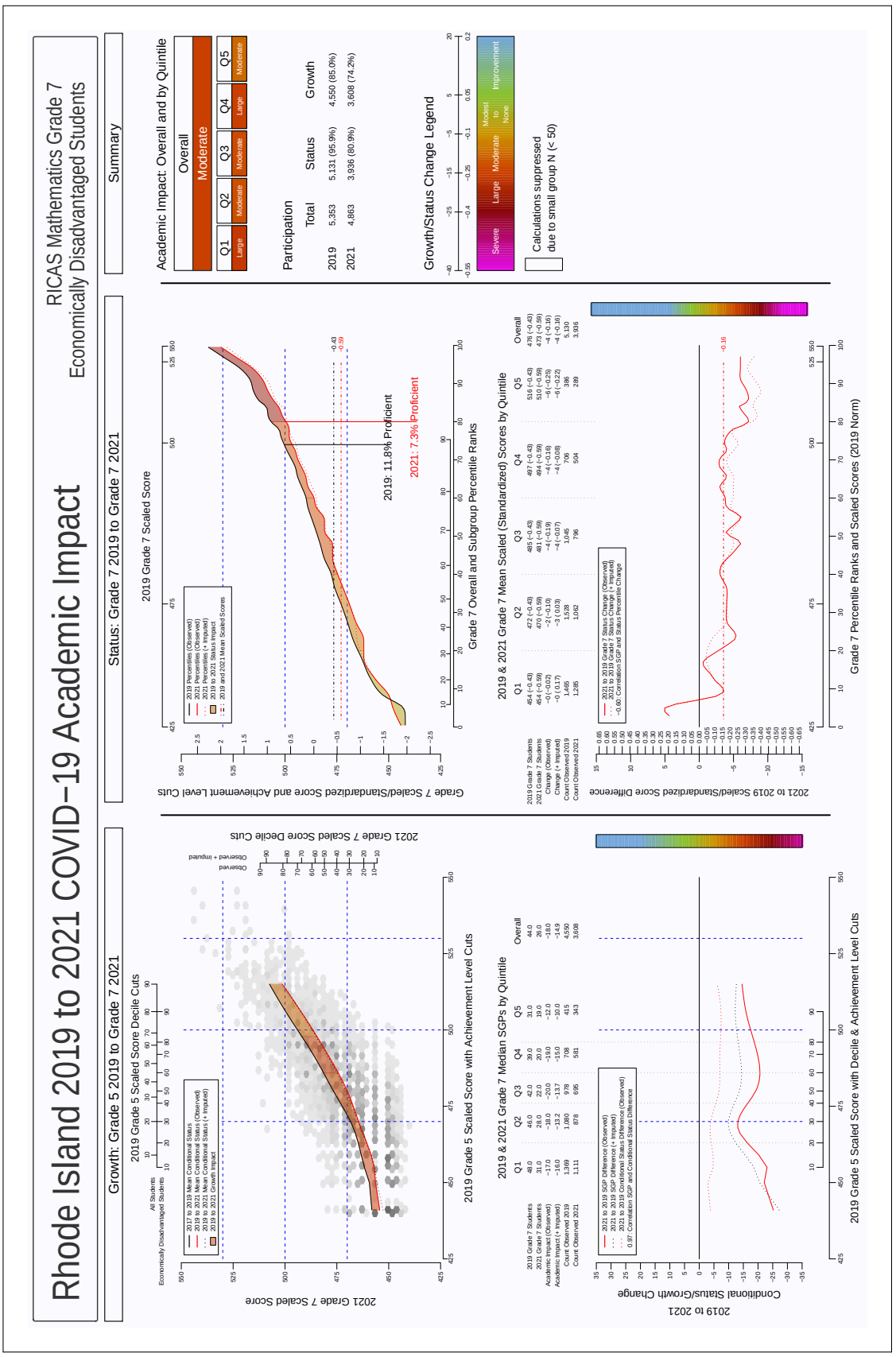


Figure 107: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, free/reduced lunch students

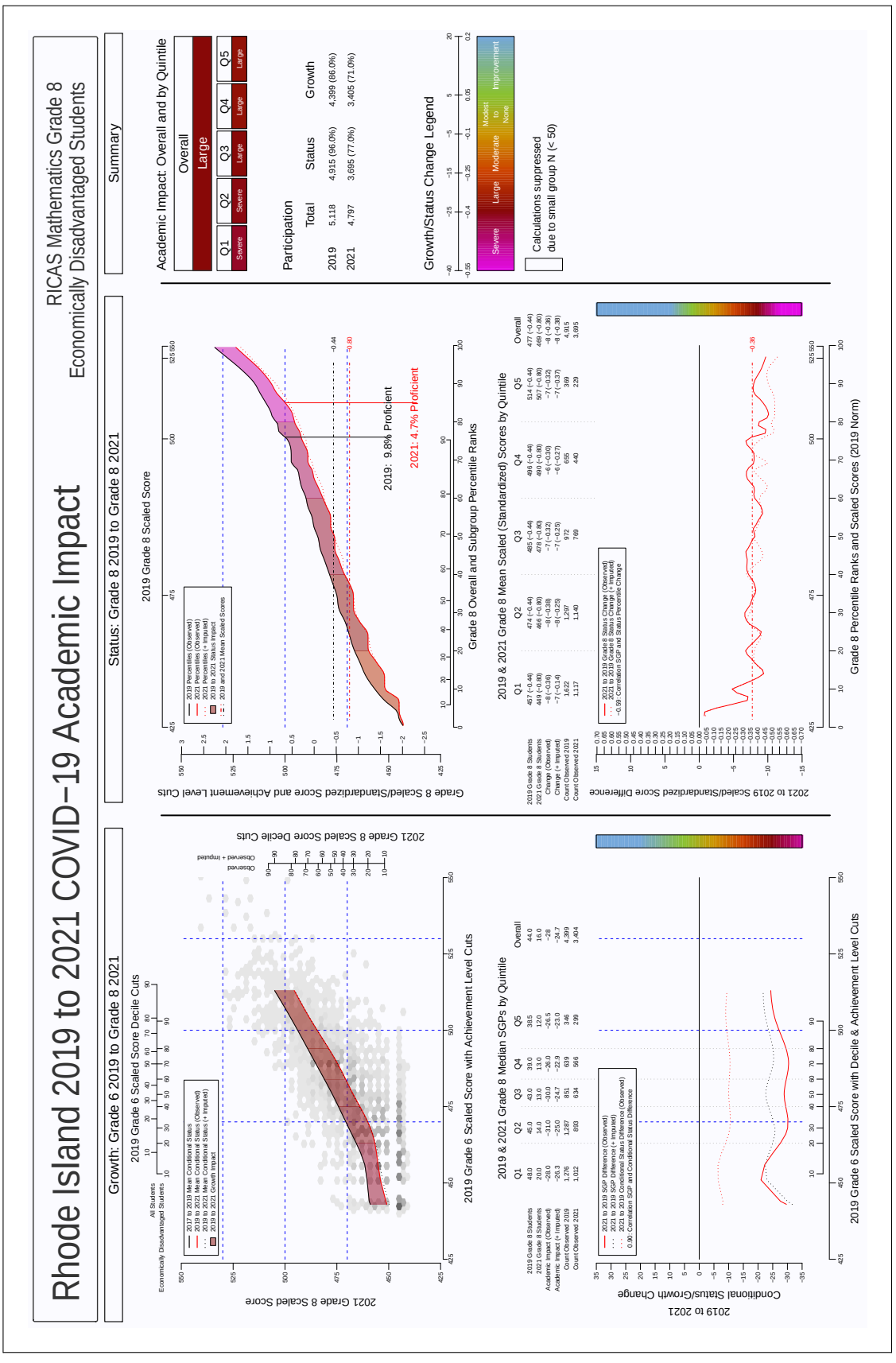


Figure 108: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, free/reduced lunch students

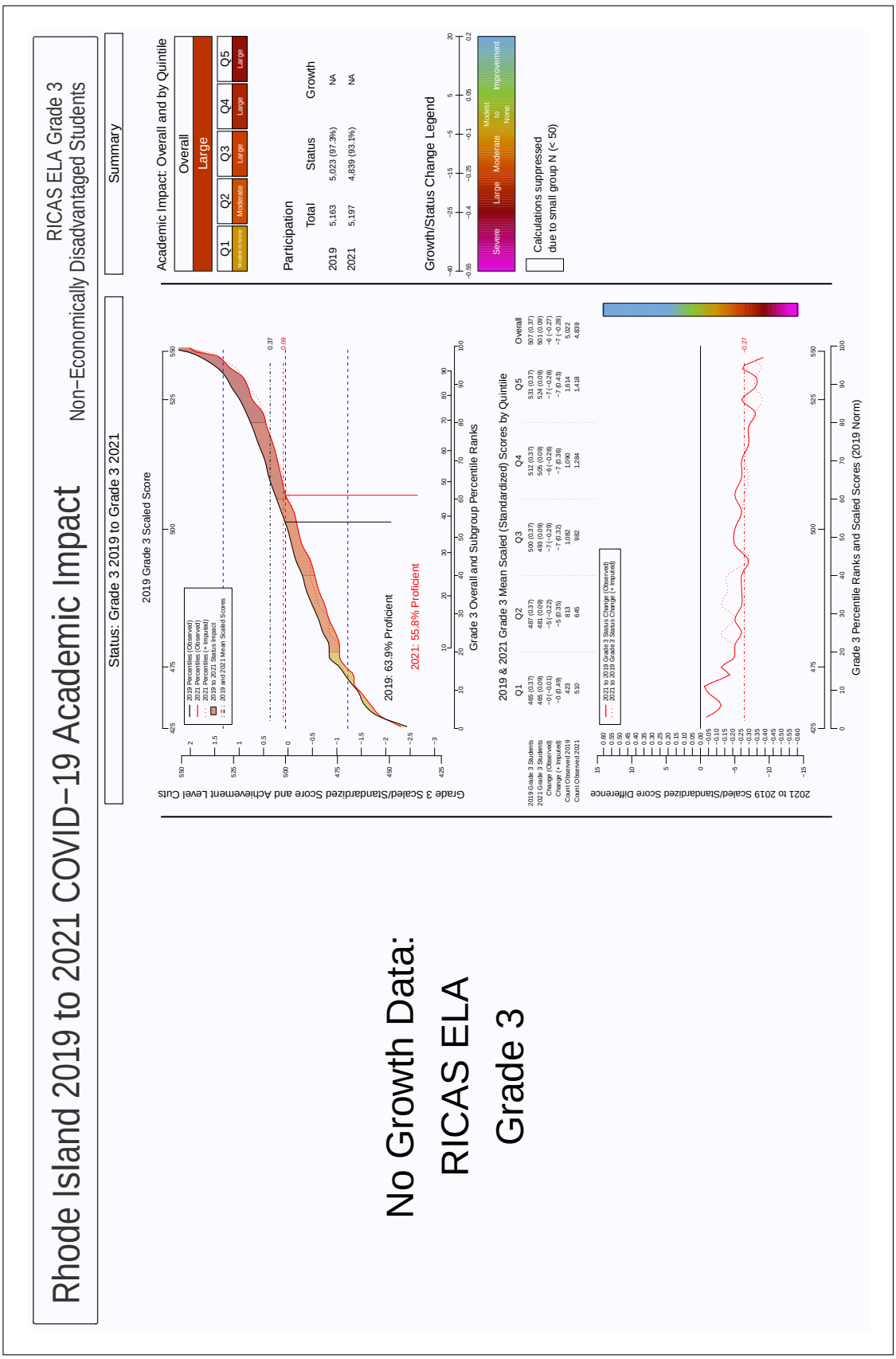


Figure 109: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, free/reduced lunch students

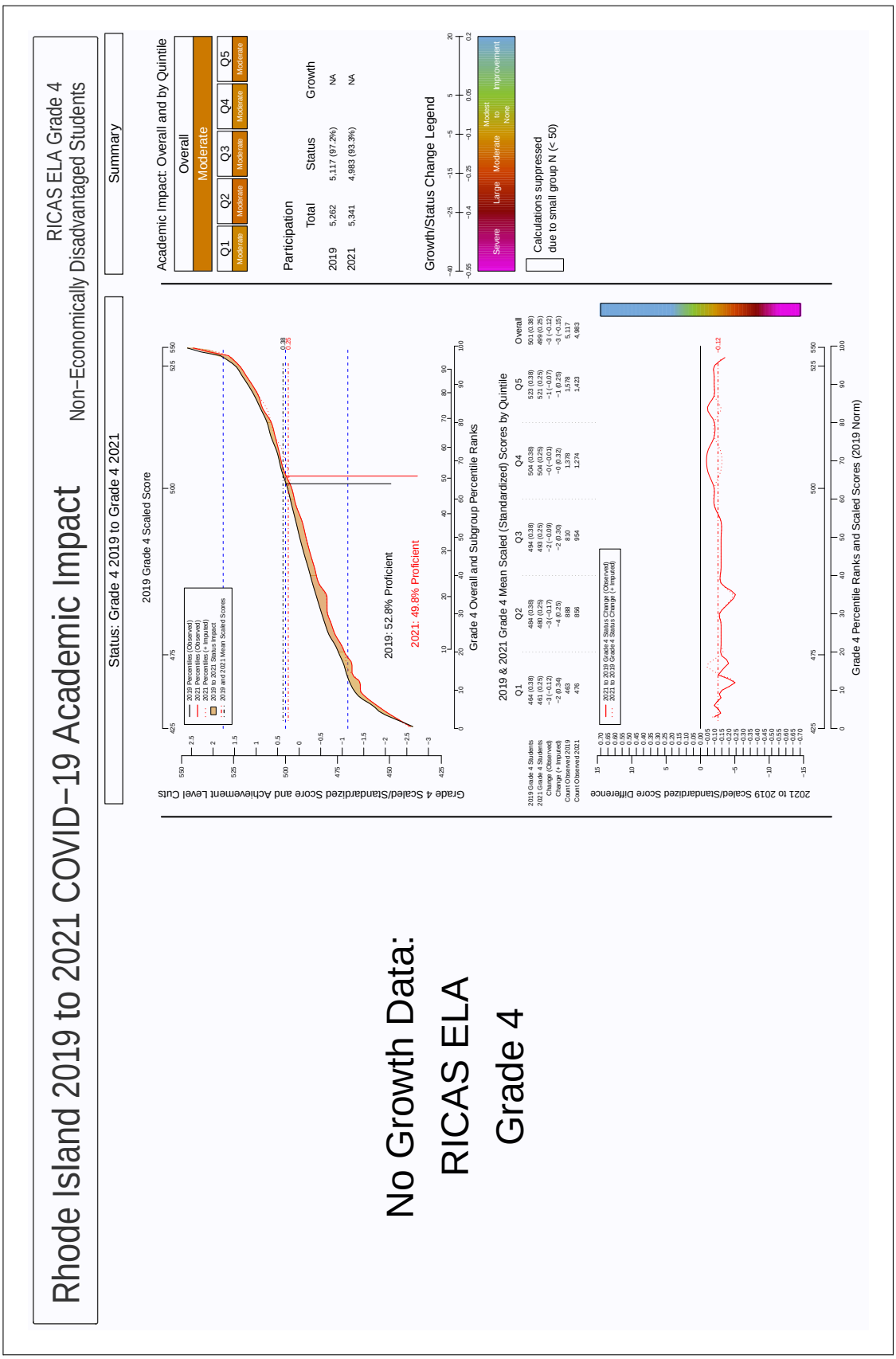


Figure 110: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, free/reduced lunch students

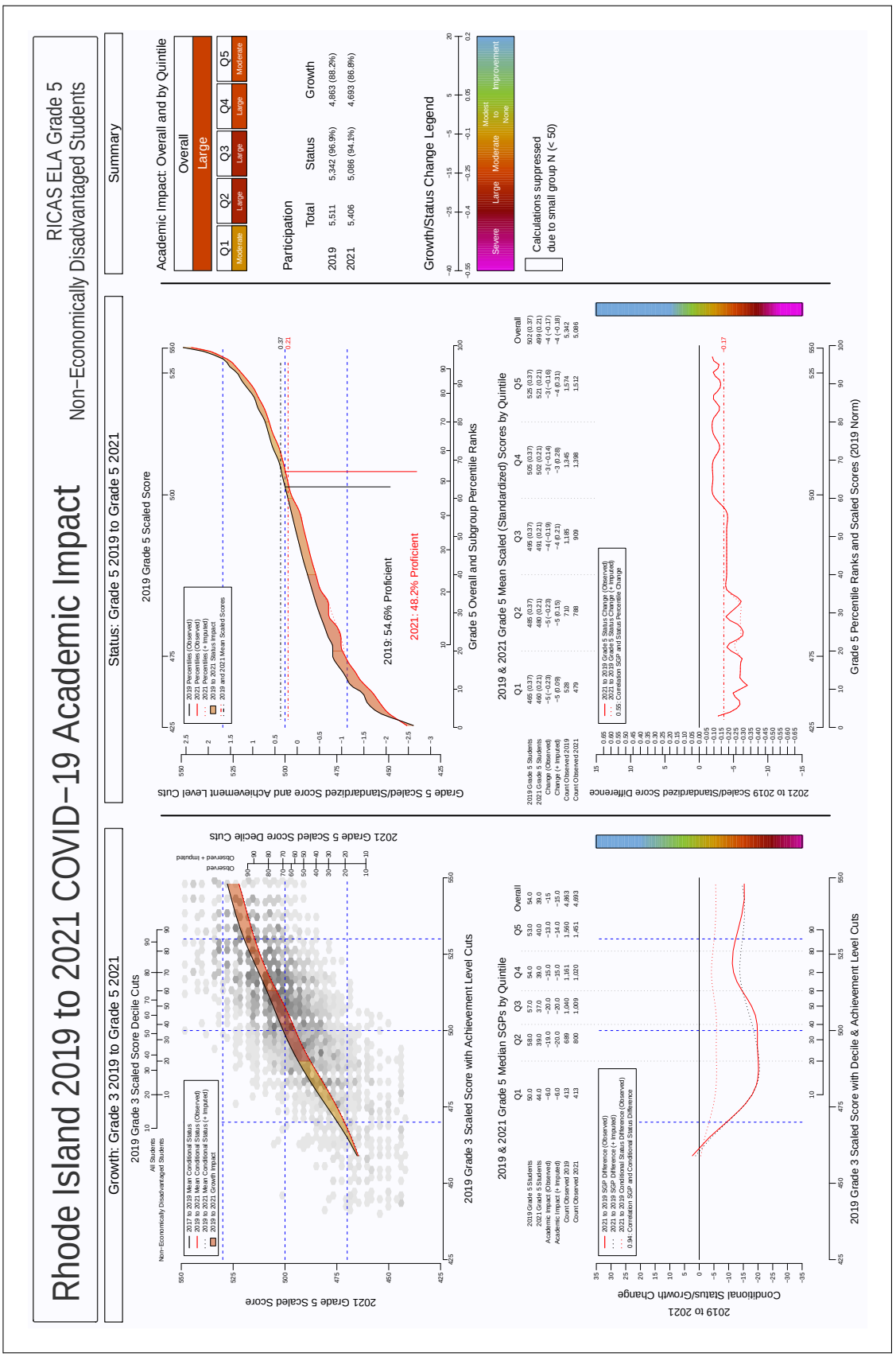


Figure 111: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, free/reduced lunch students

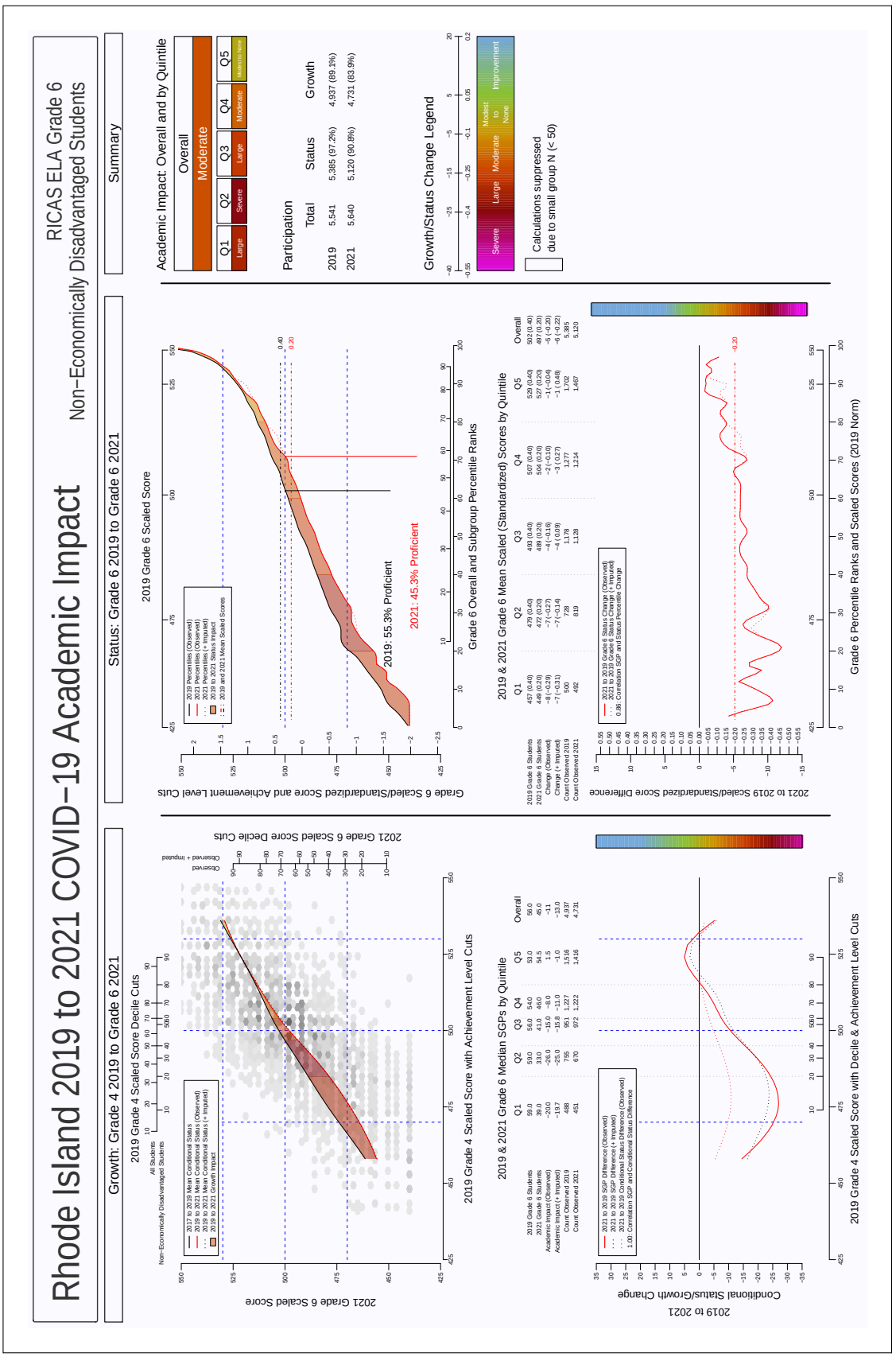


Figure 112: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, free/reduced lunch students

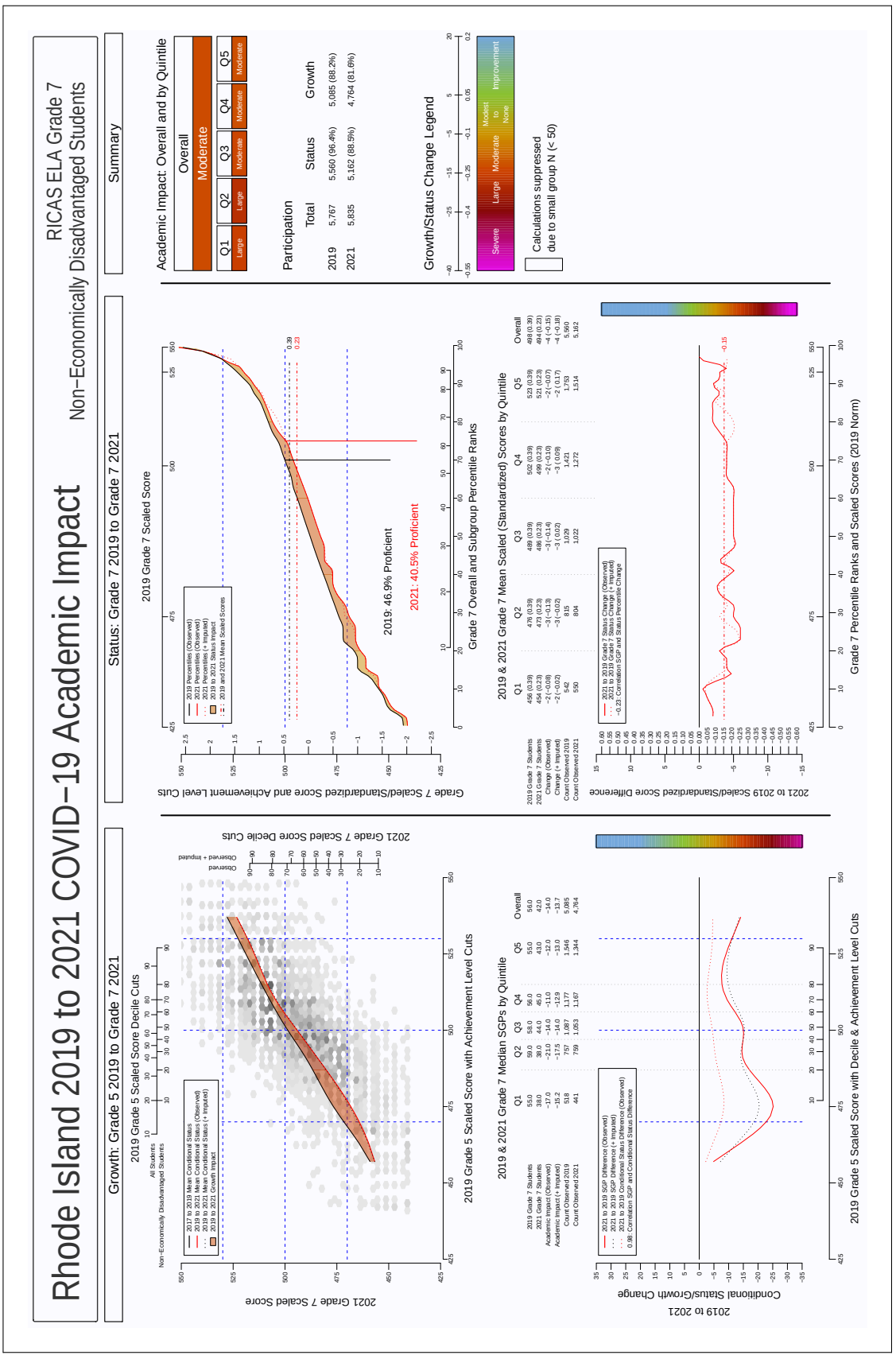


Figure 113: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, free/reduced lunch students

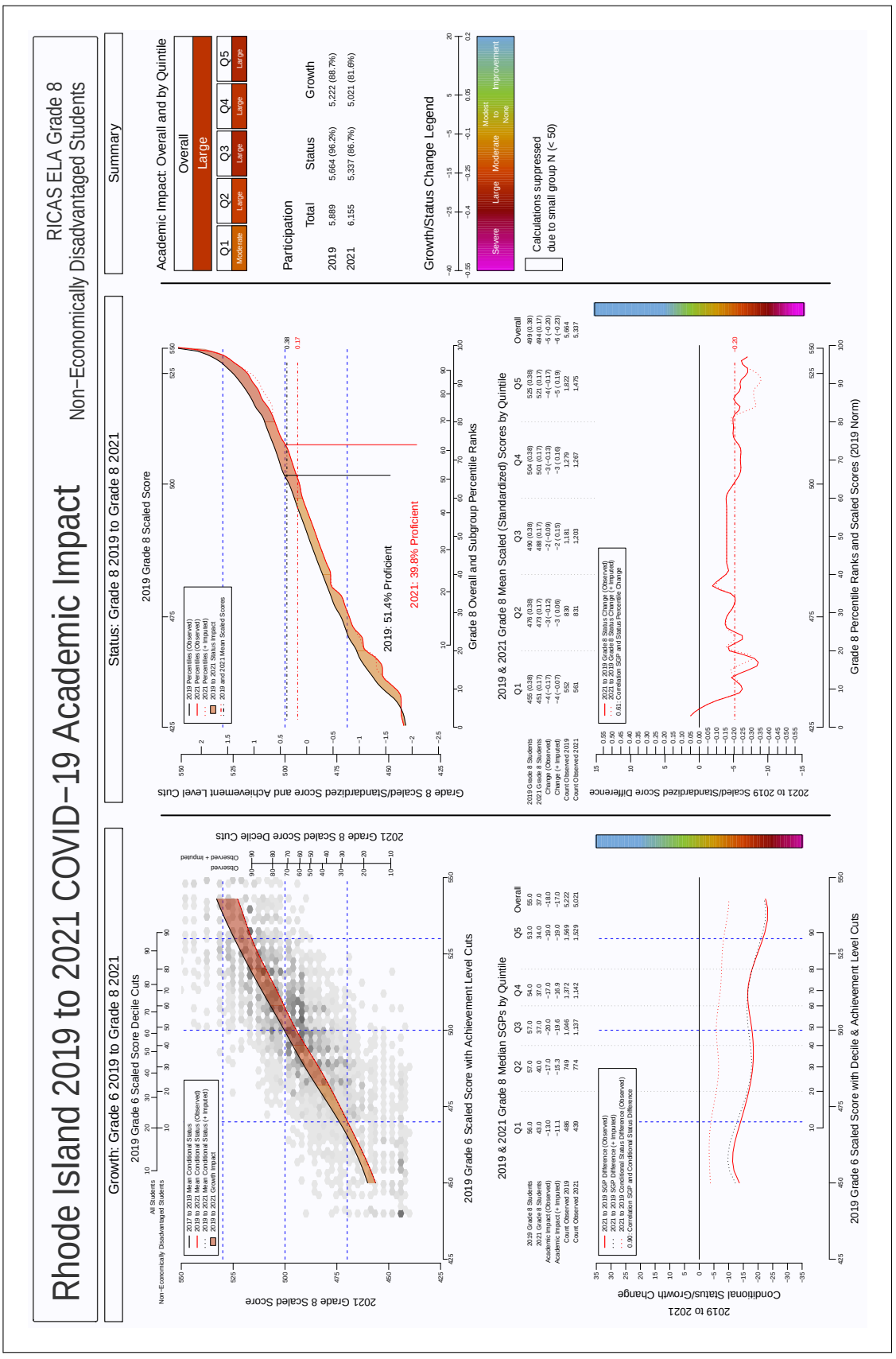


Figure 114: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, free/reduced lunch students

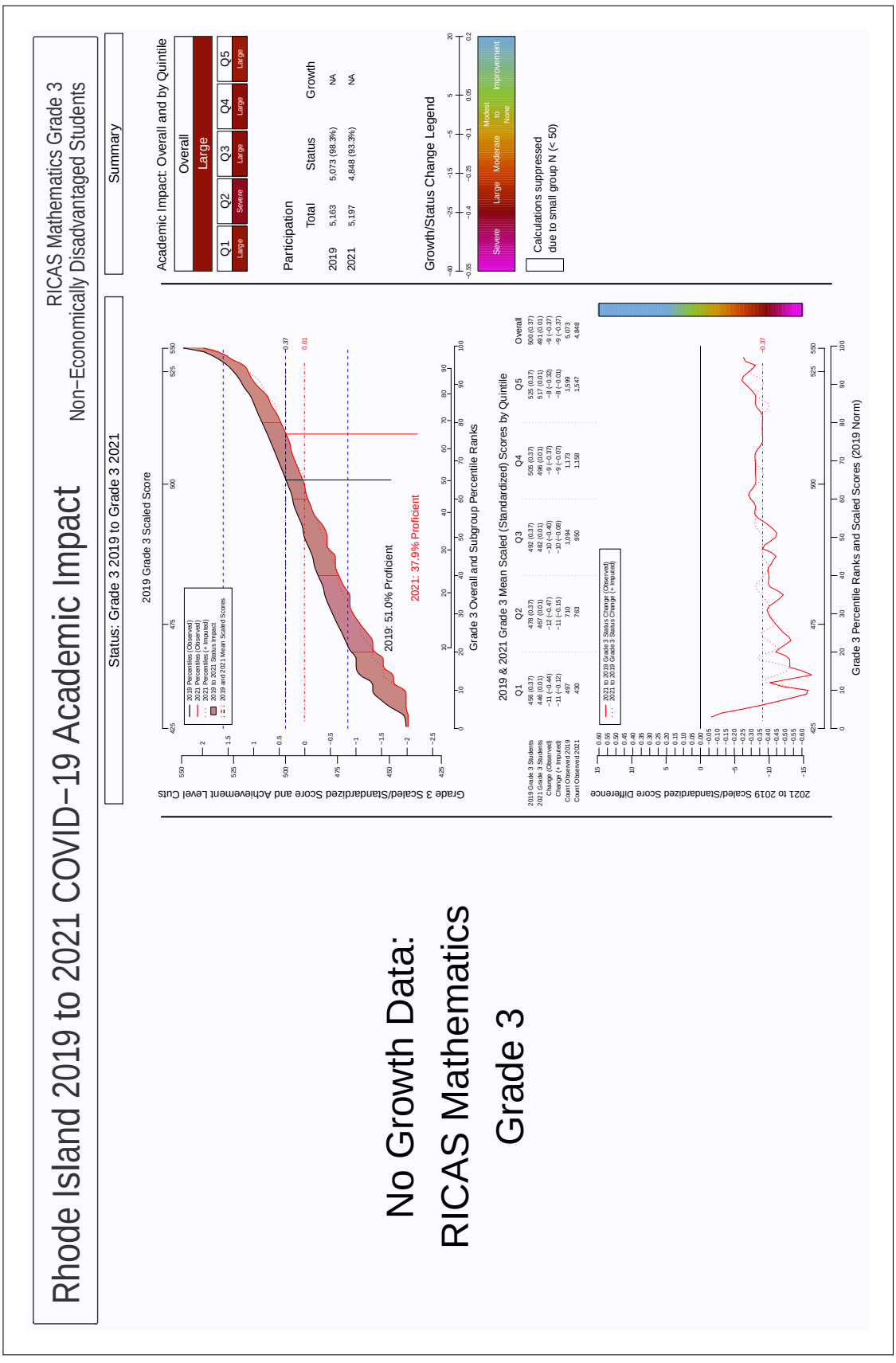


Figure 115: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, free/reduced lunch students

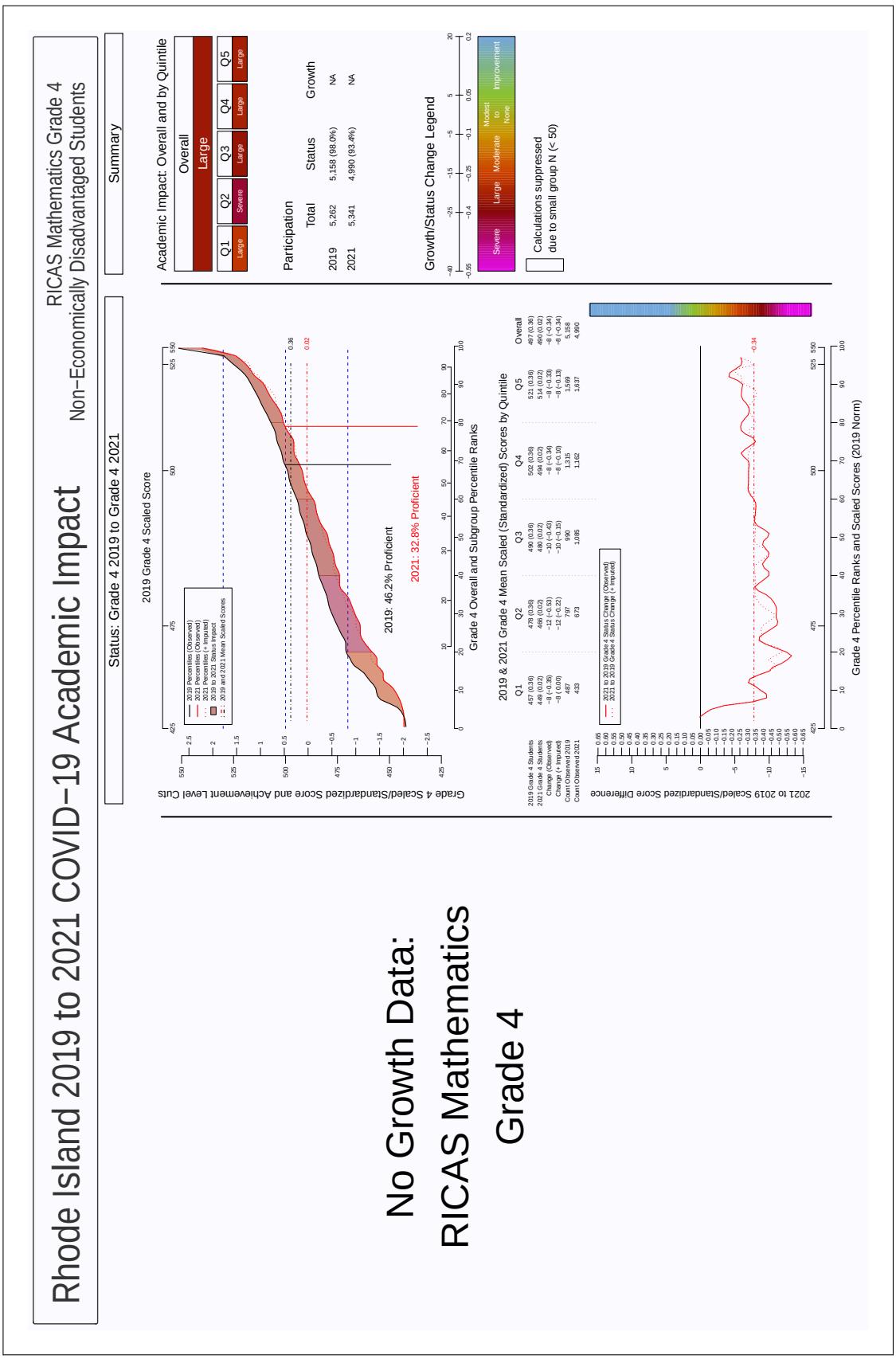


Figure 116: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, free/reduced lunch students

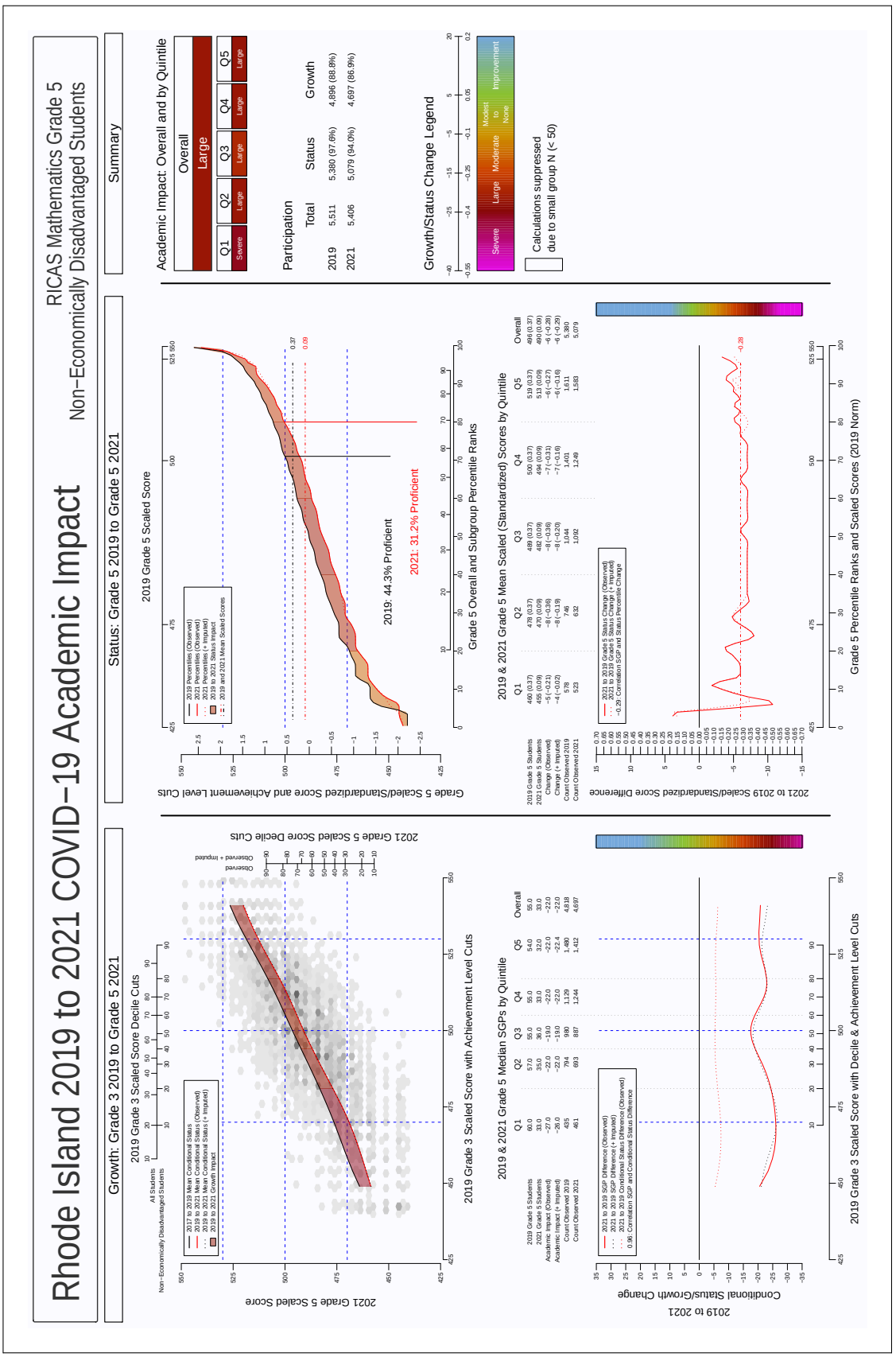


Figure 117: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, free/reduced lunch students

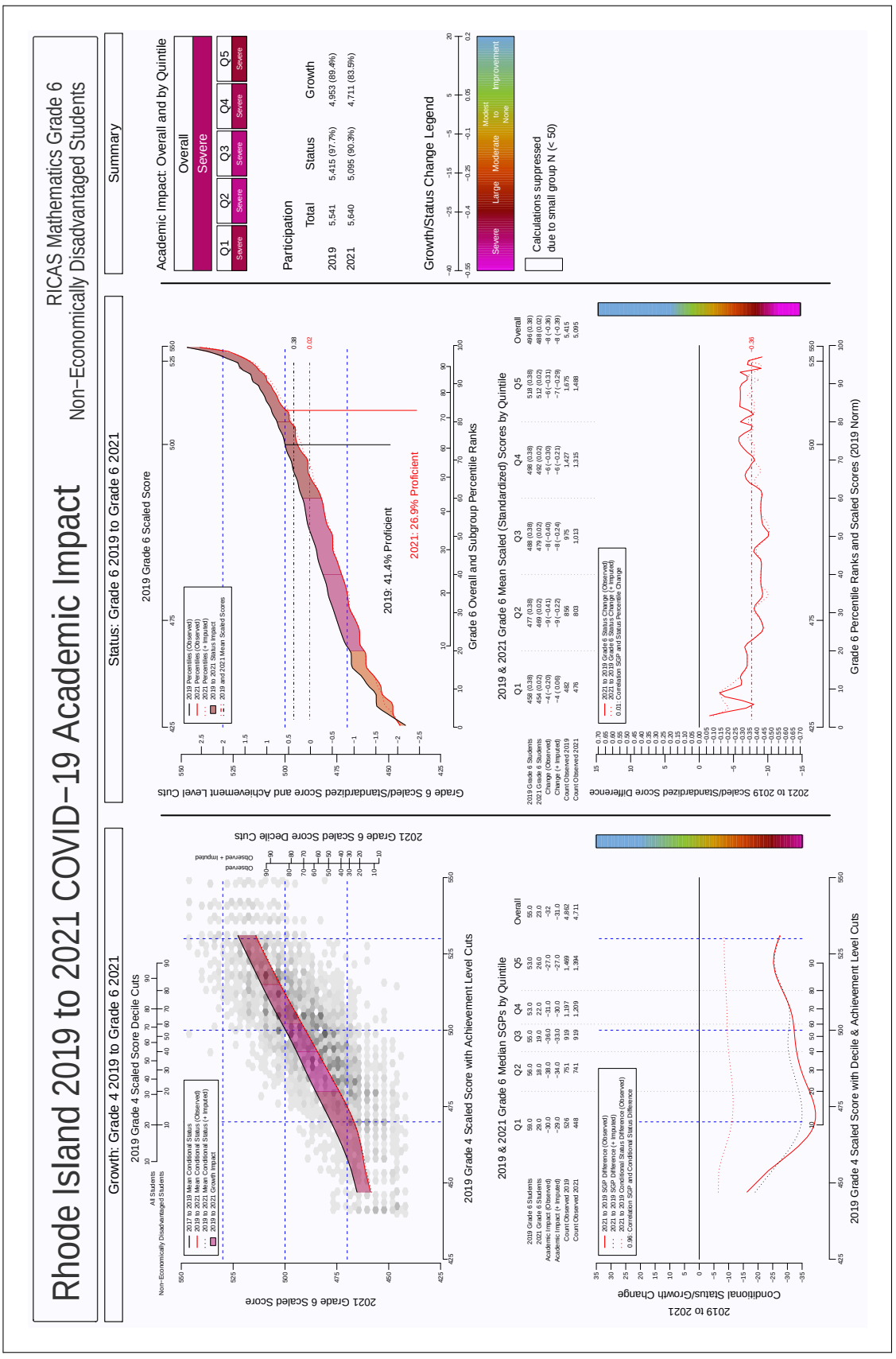


Figure 118: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, free/reduced lunch students

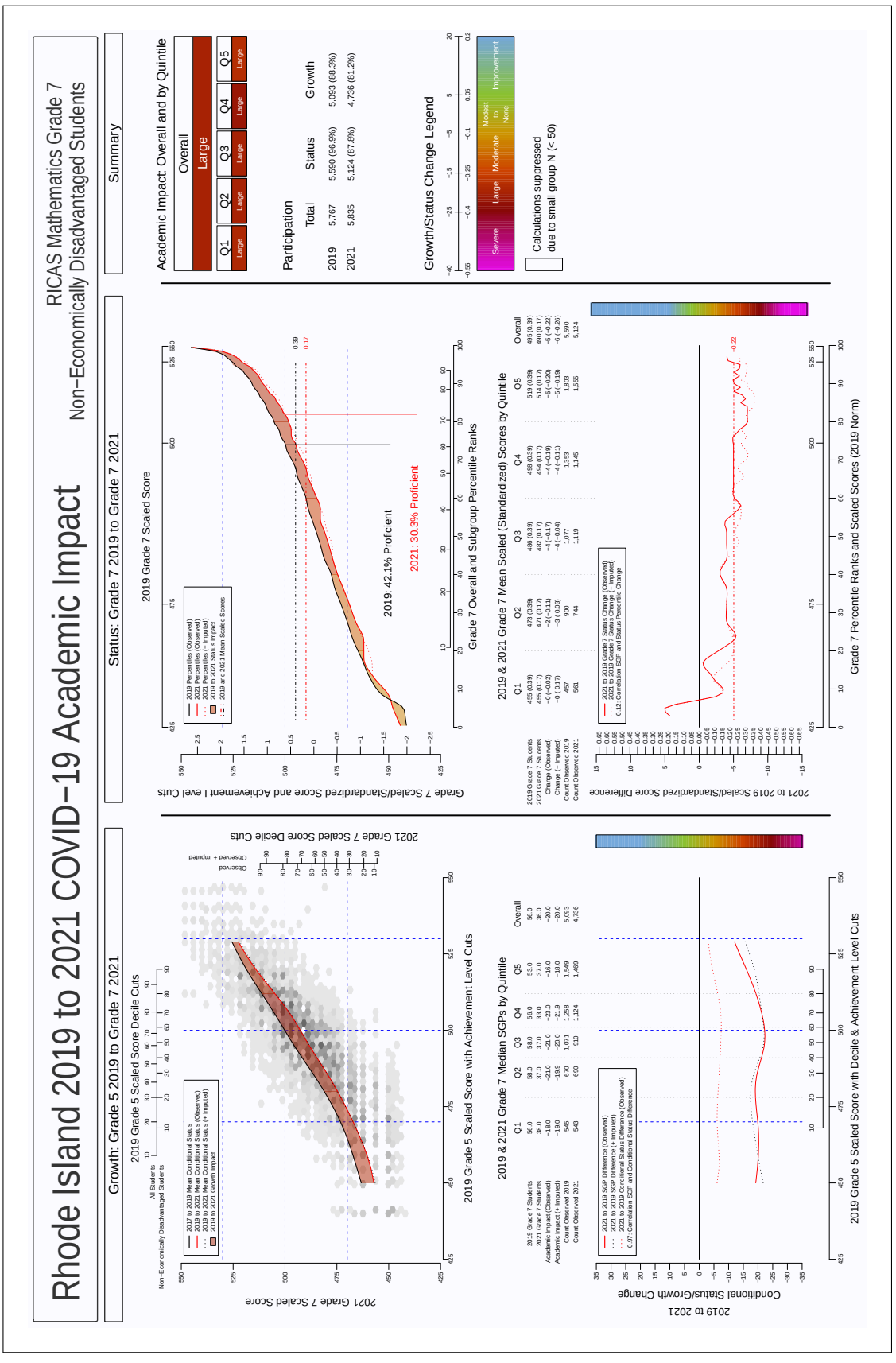


Figure 119: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, free/reduced lunch students

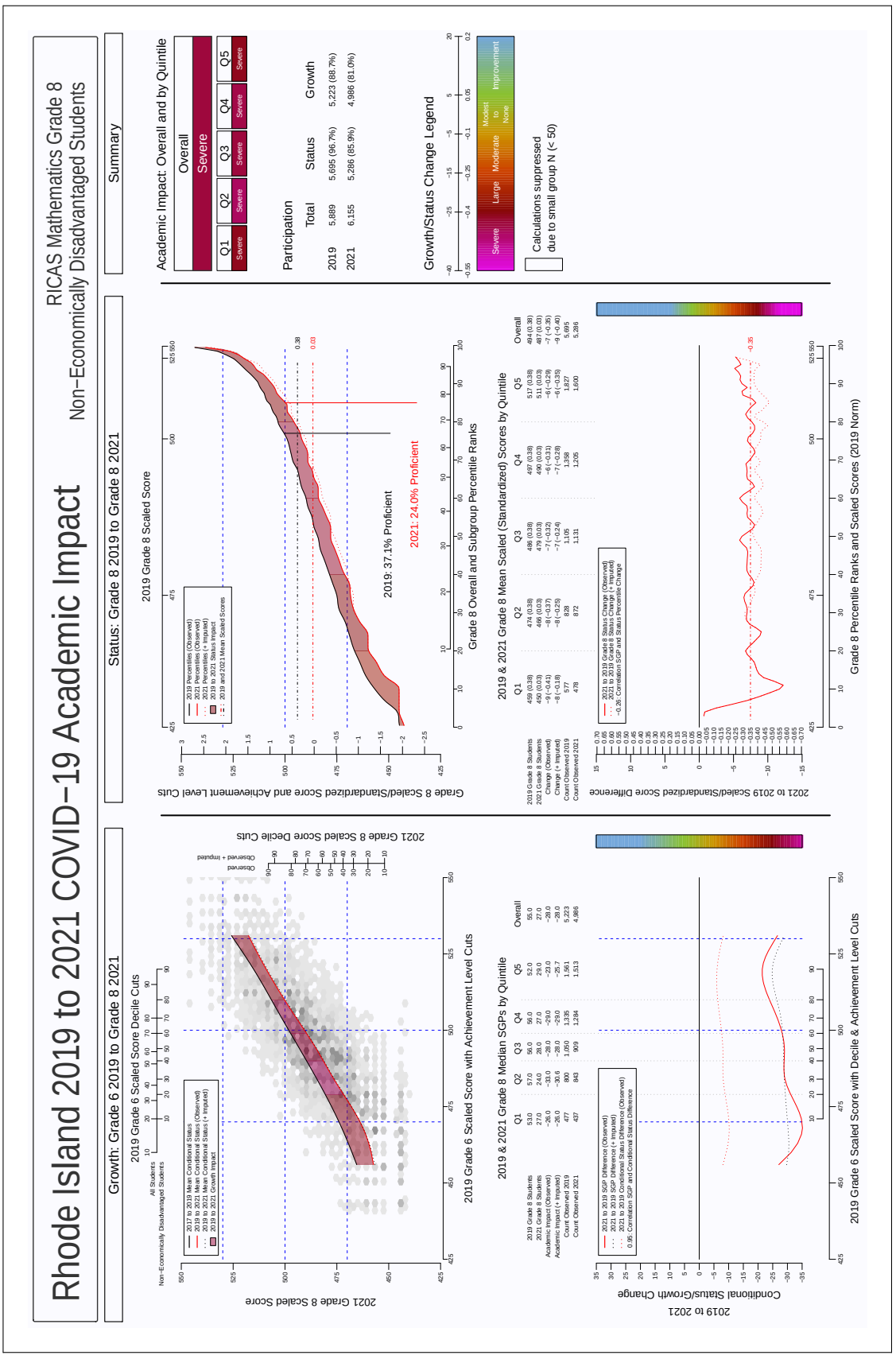


Figure 120: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, free/reduced lunch students

Grade by Content Area by gender

The figures on the following pages illustrate pandemic related academic impact for male and female students grouped by grade (3, 4, 5, 6, 7 or 8), content area)

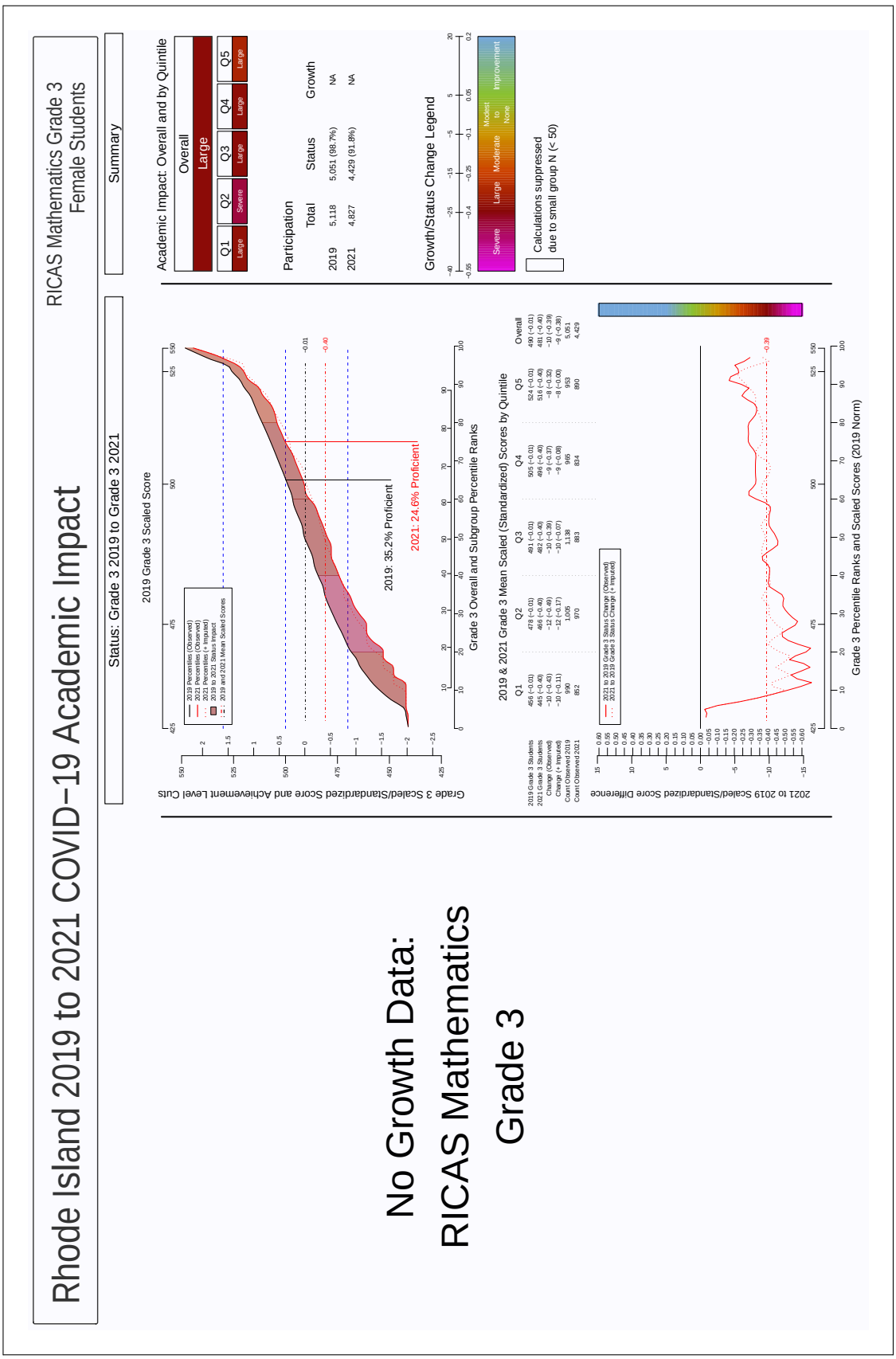


Figure 121: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, female students

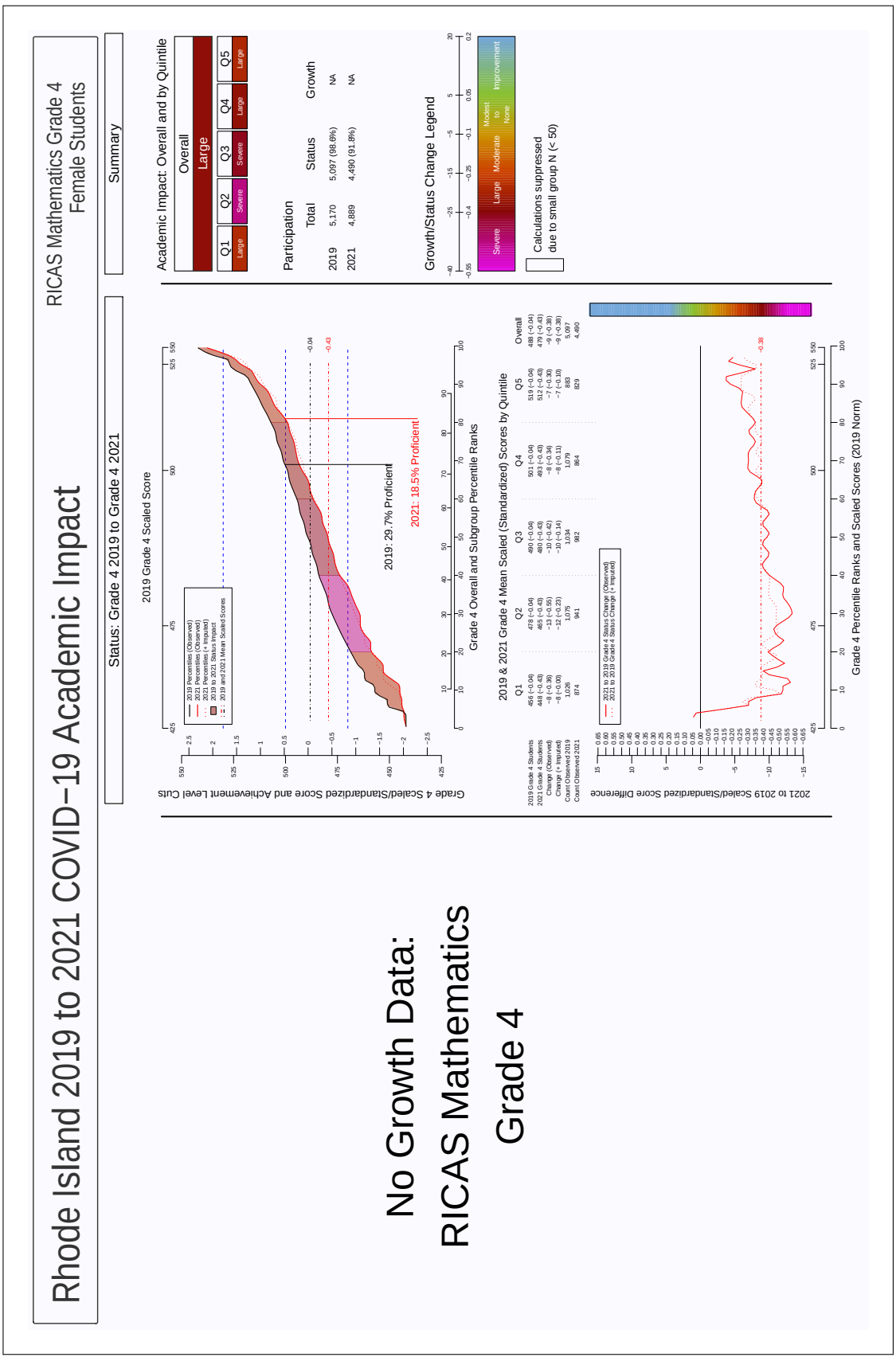


Figure 122: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, female students

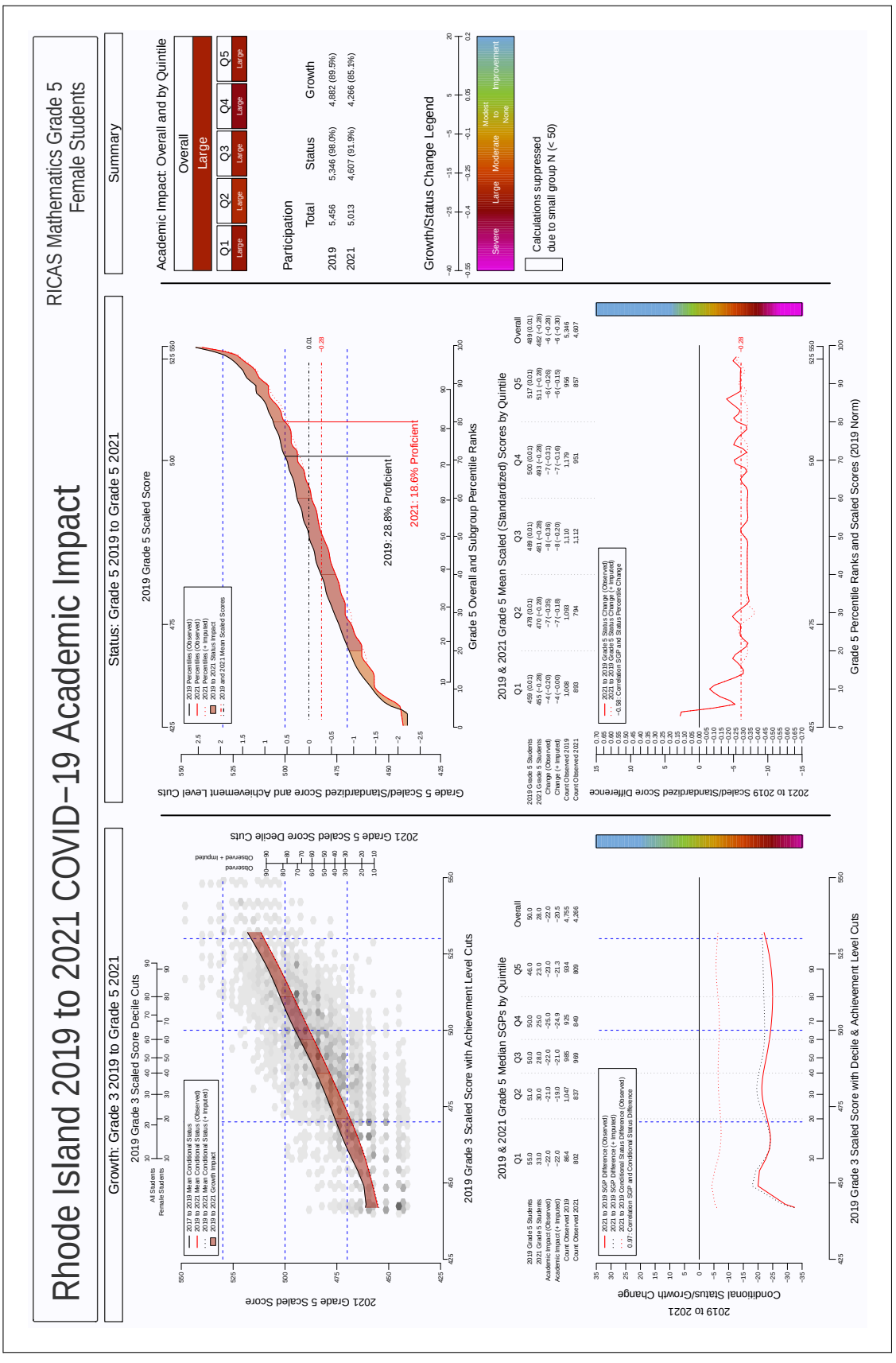


Figure 123: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, female students

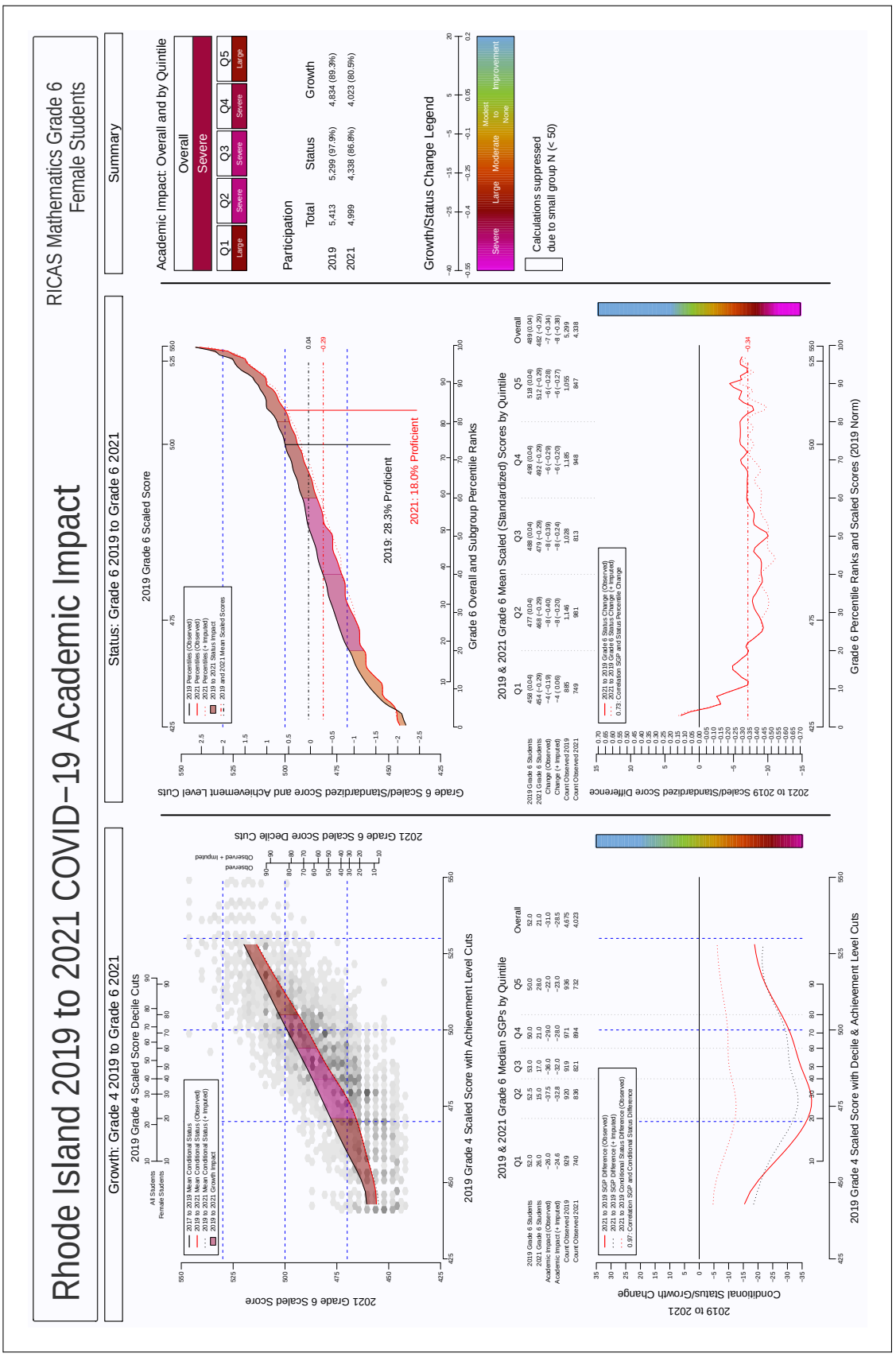


Figure 124: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, female students

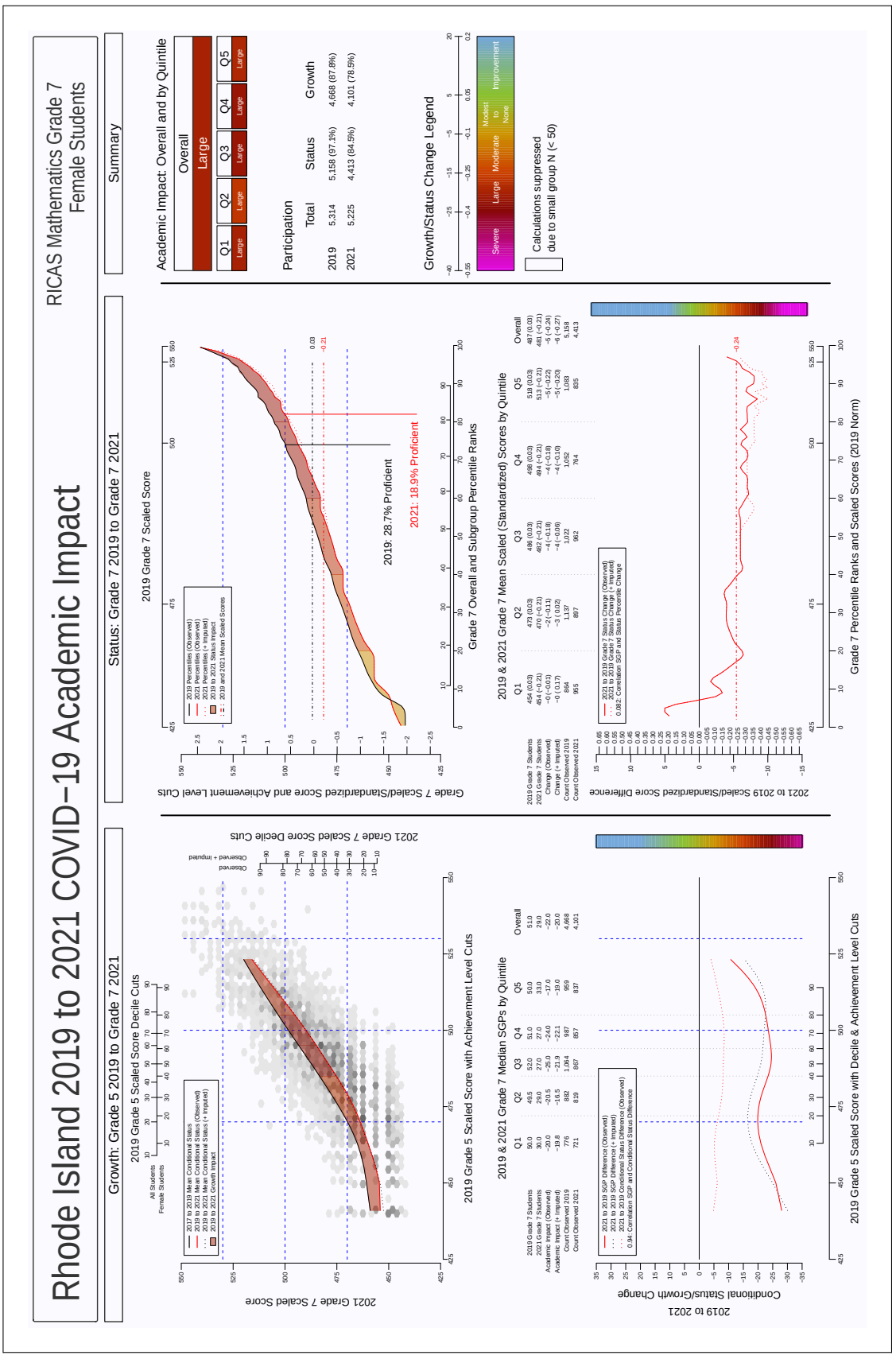


Figure 125: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, female students

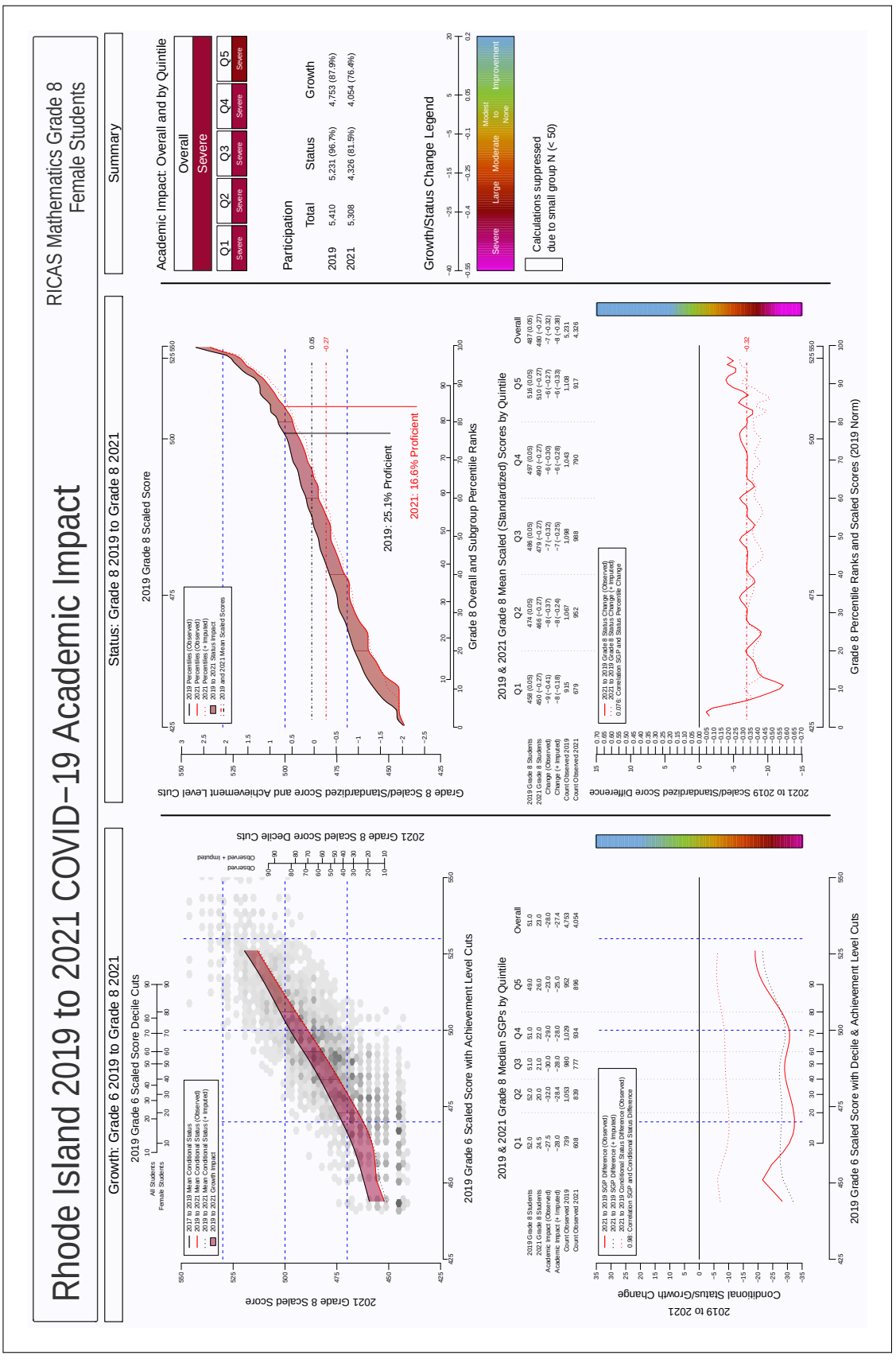


Figure 126: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, female students

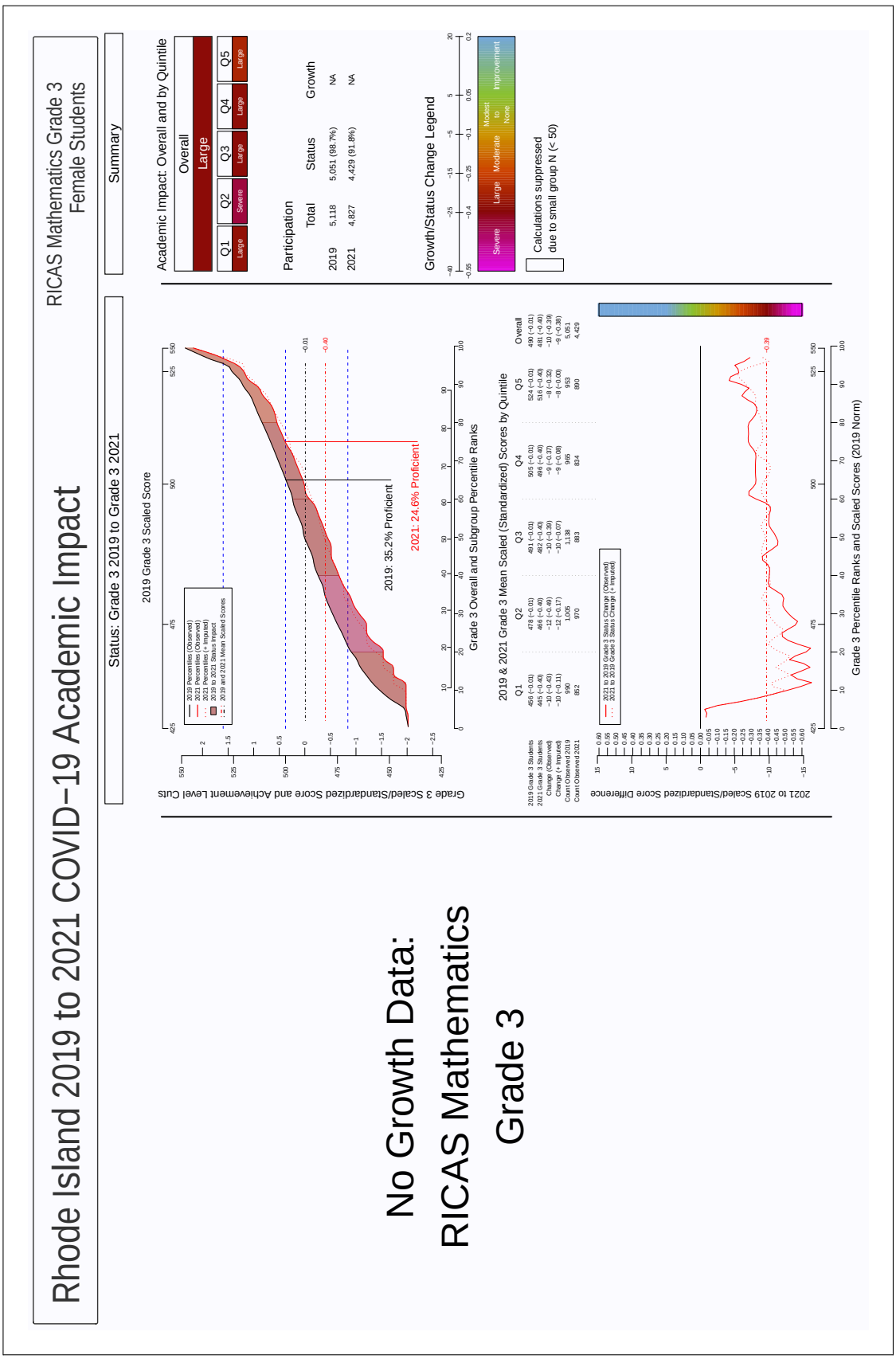


Figure 127: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, female students

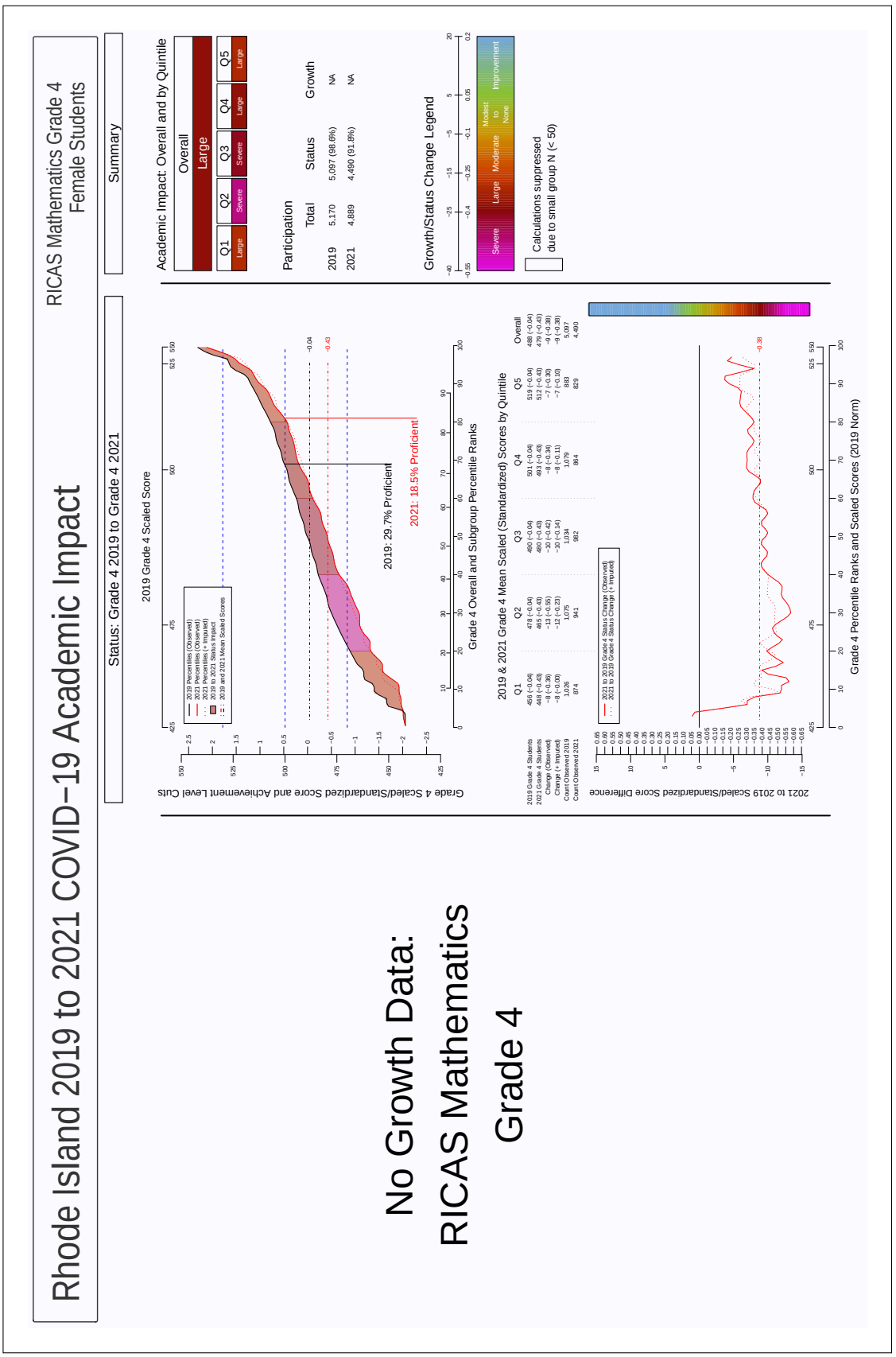


Figure 128: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, female students

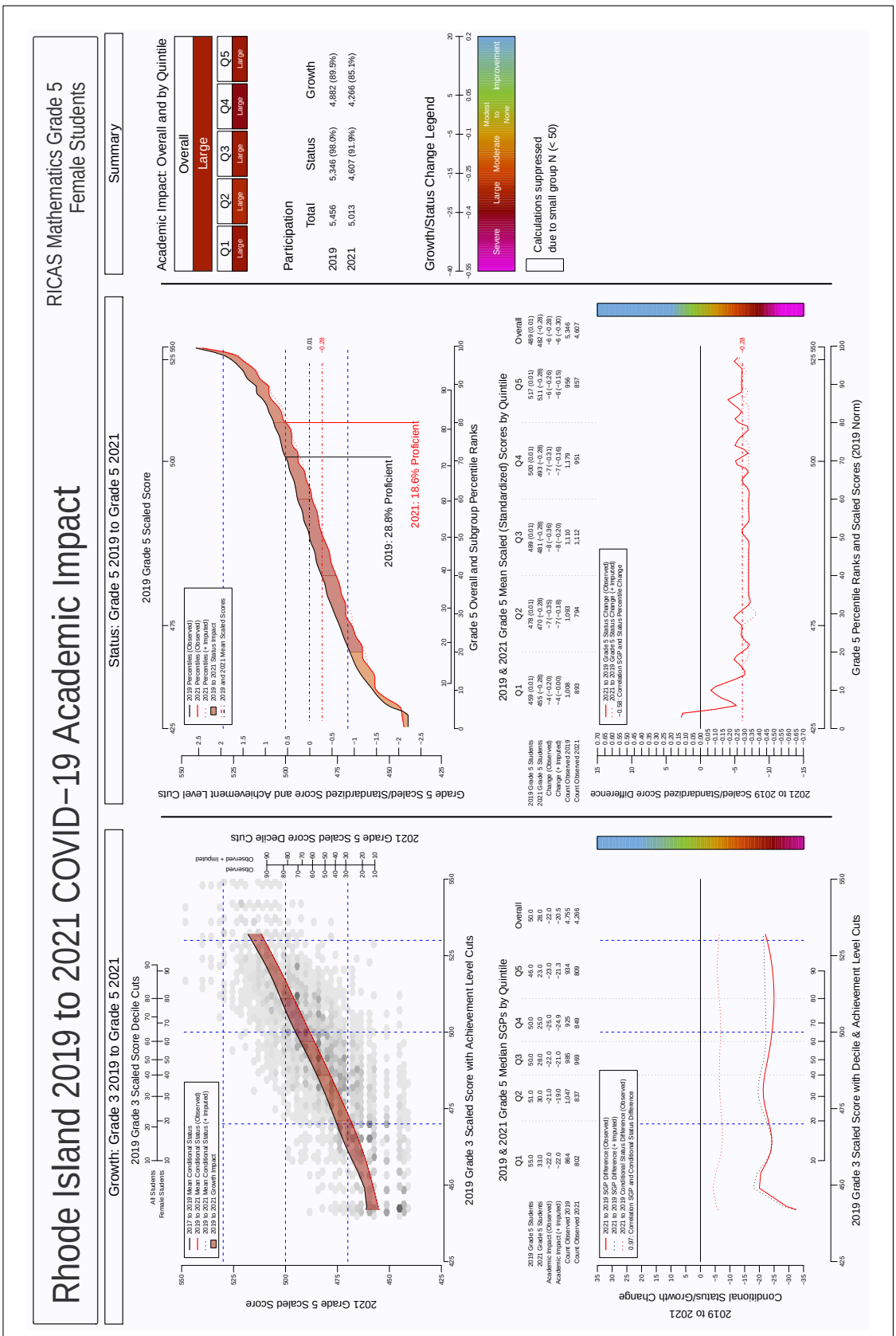


Figure 129: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, female students

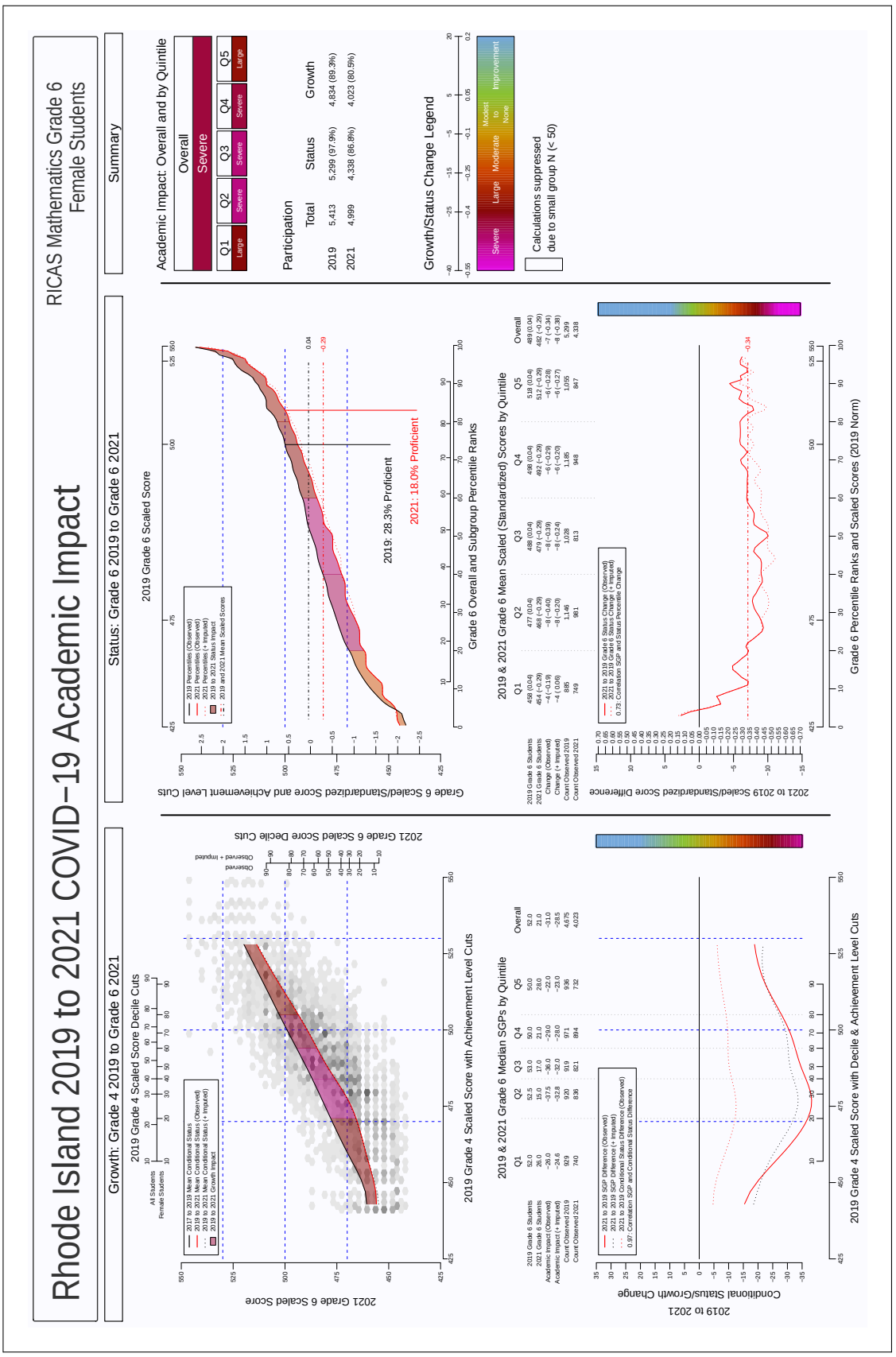


Figure 130: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, female students

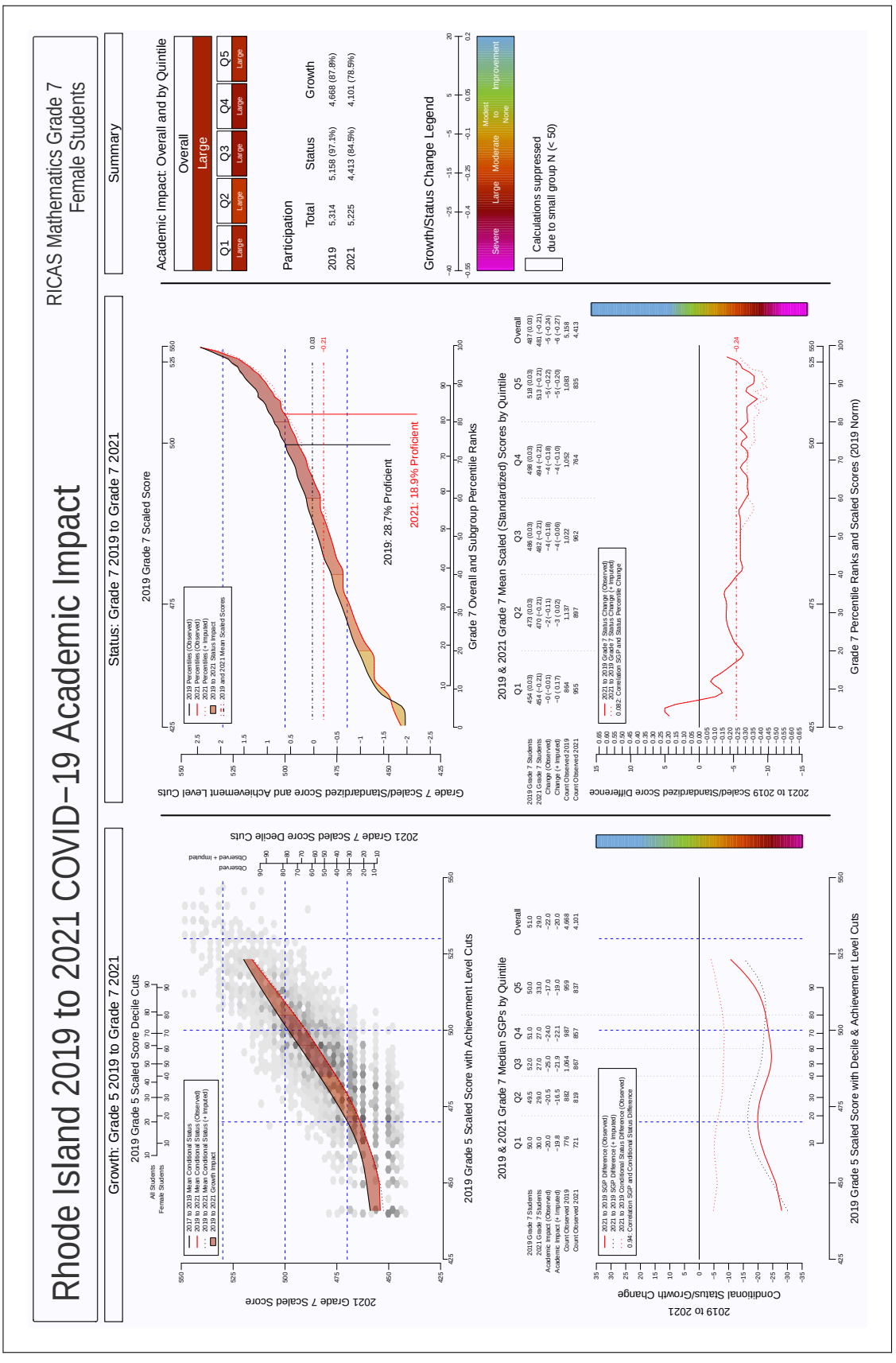


Figure 131: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, female students

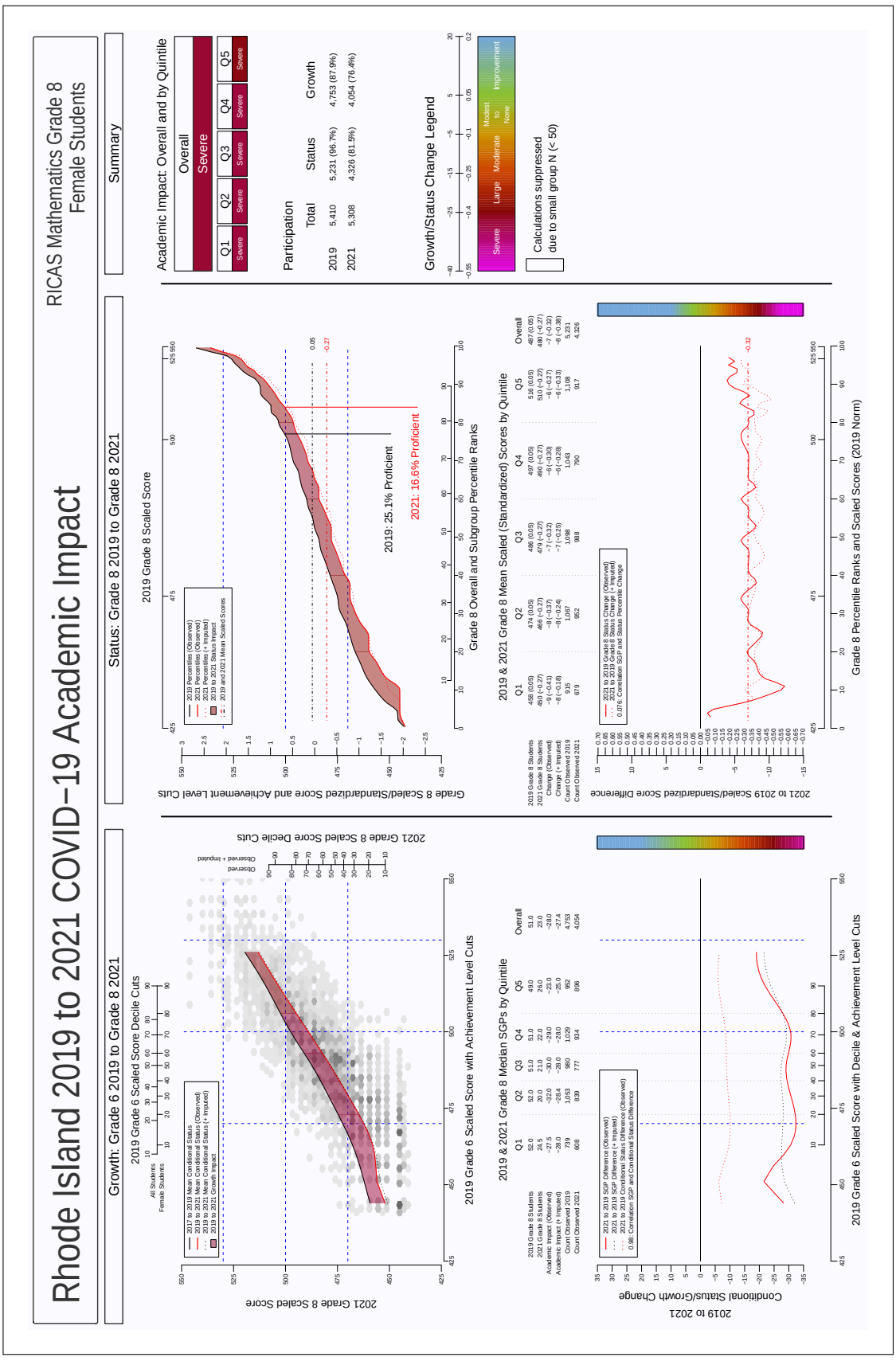


Figure 132: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, female students

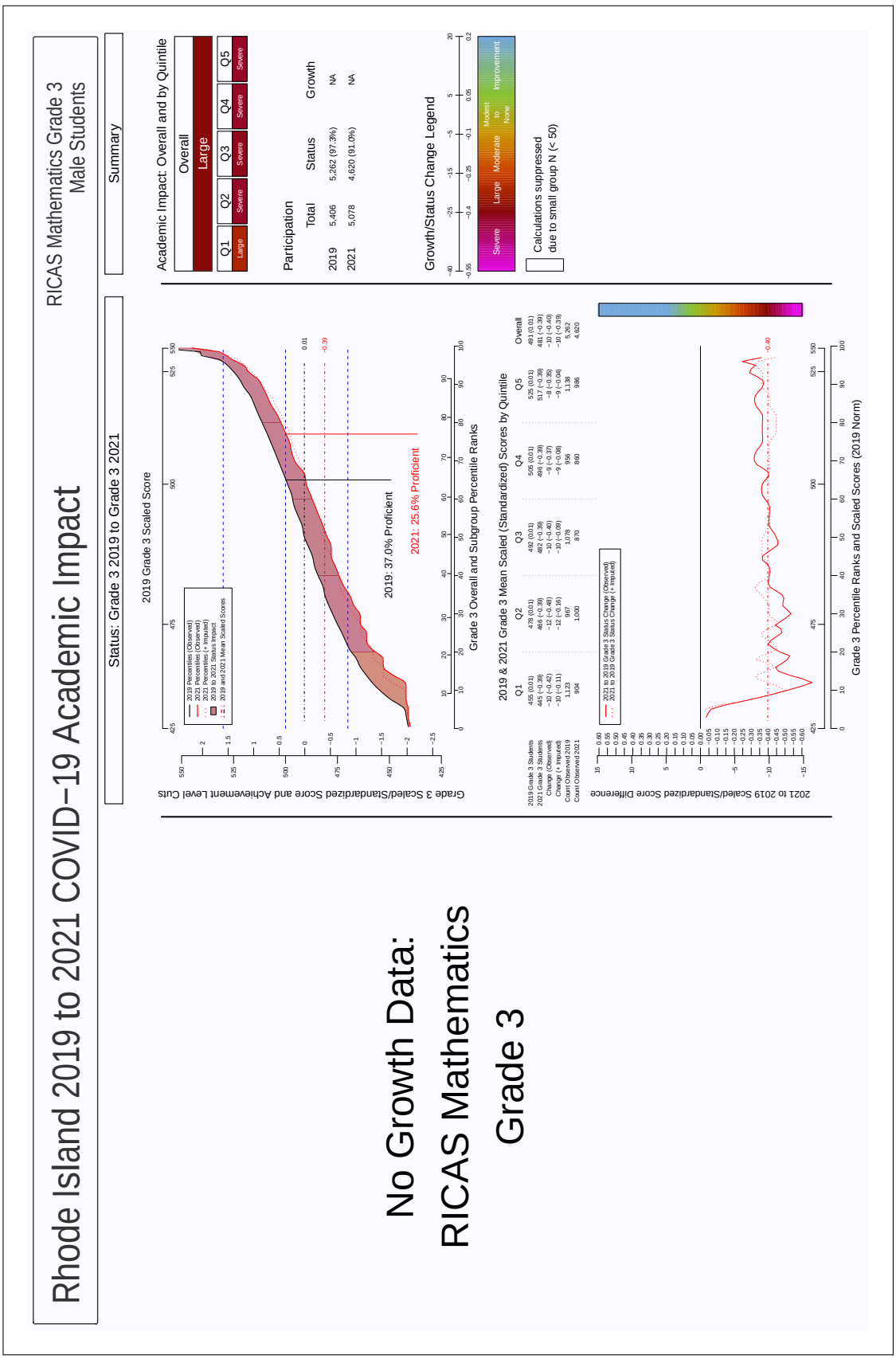


Figure 133: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 ELA, male students

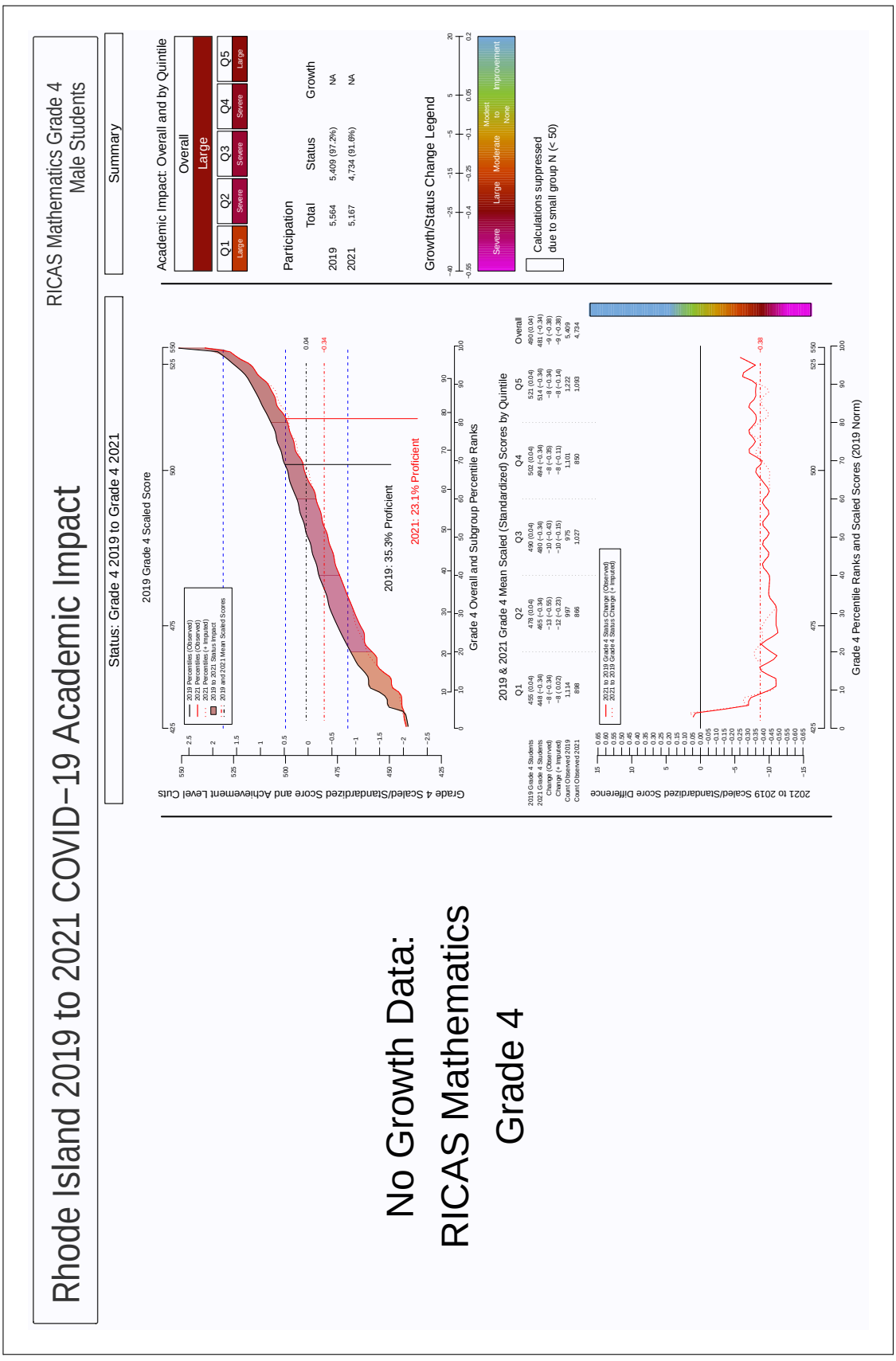


Figure 134: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 ELA, male students

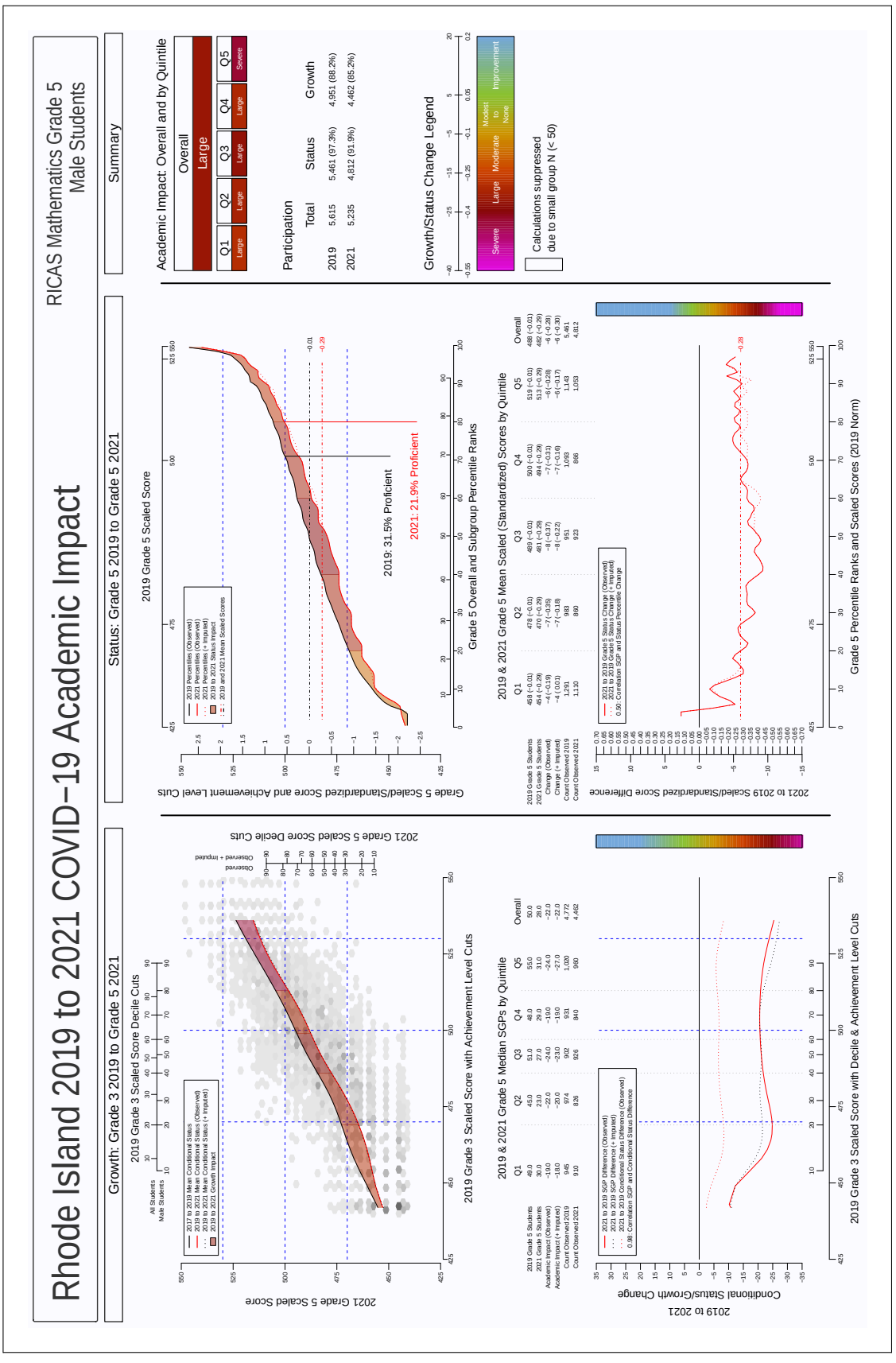


Figure 135: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 ELA, male students

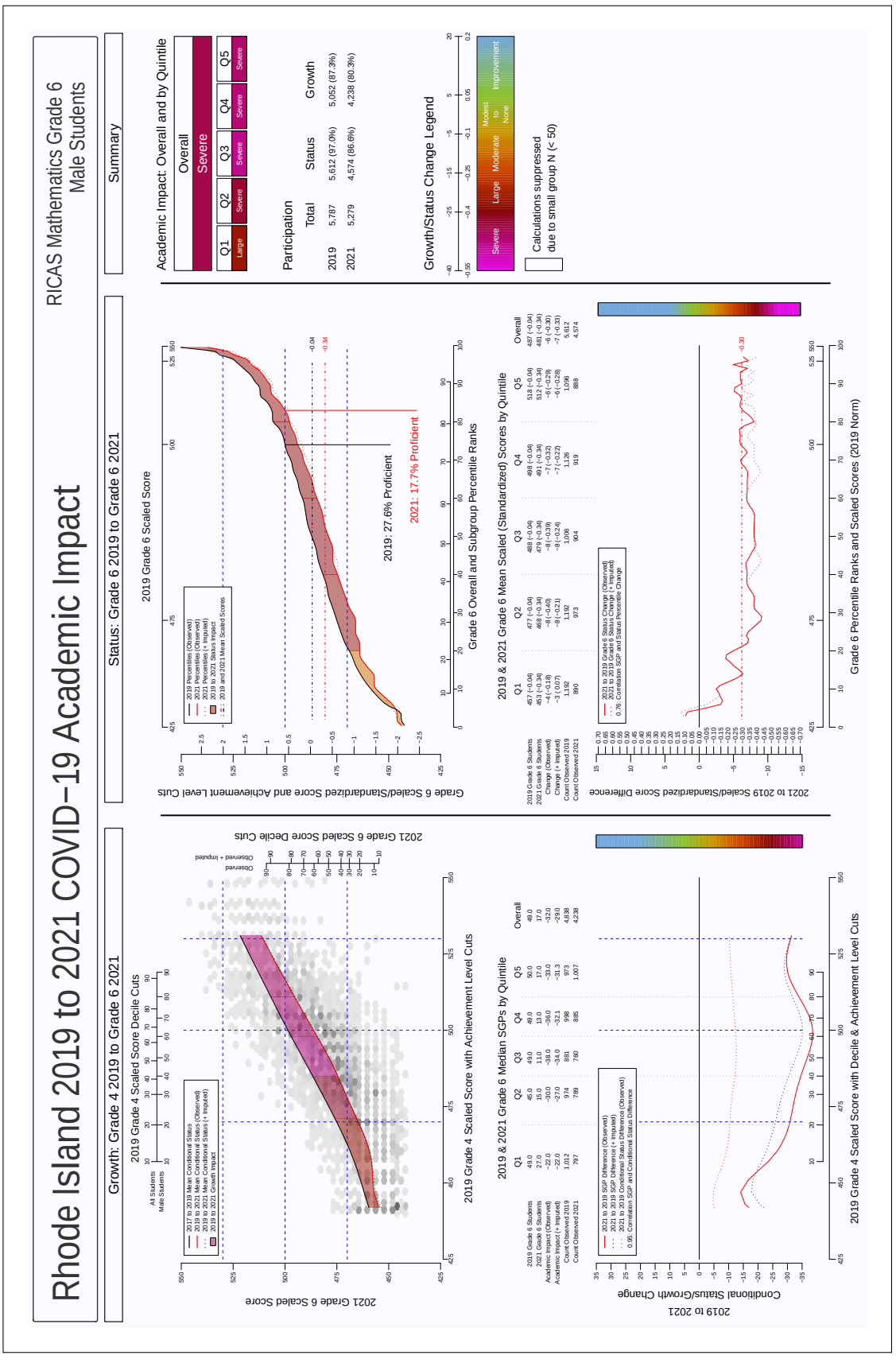


Figure 136: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 ELA, male students

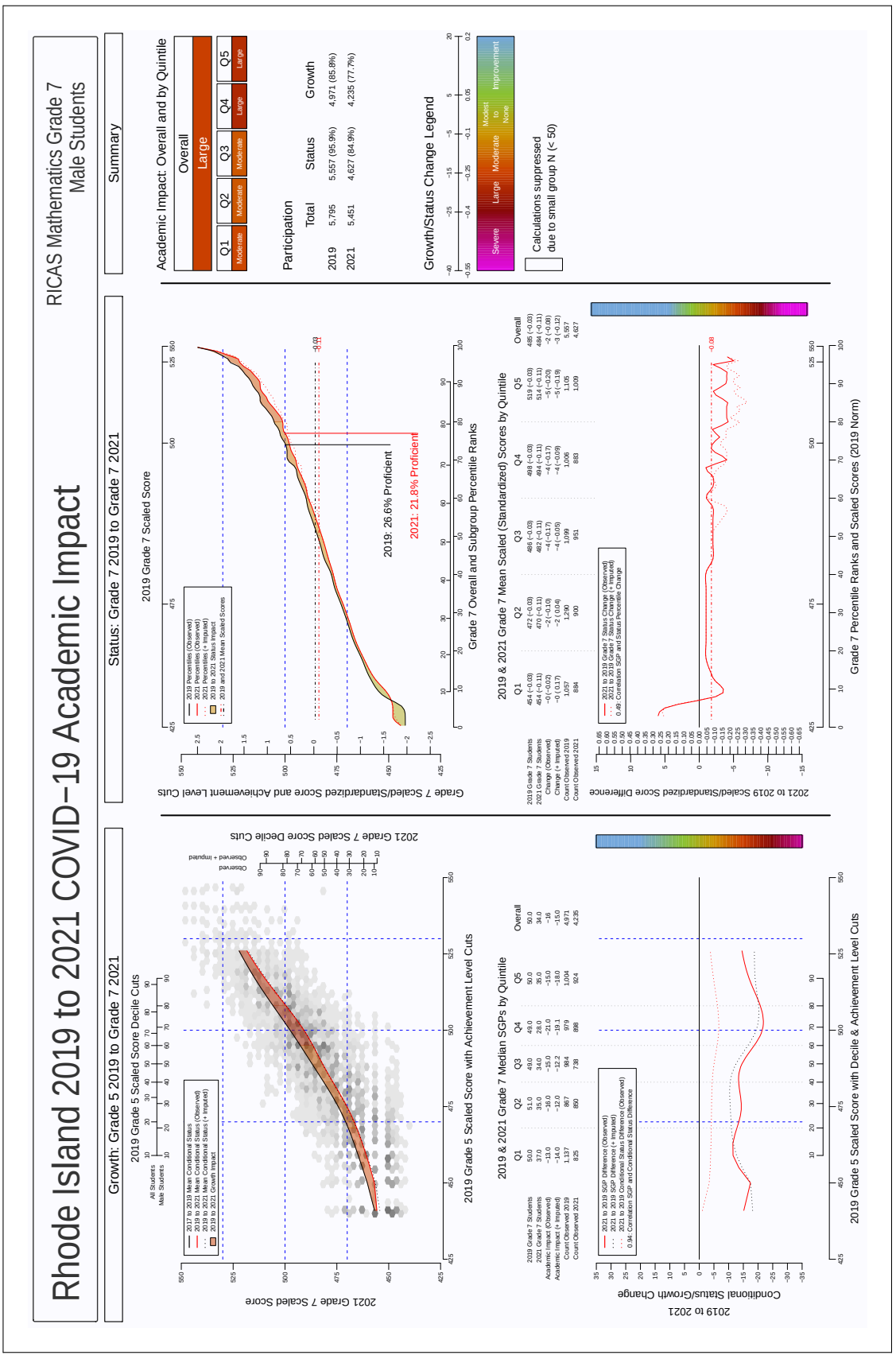


Figure 137: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 ELA, male students

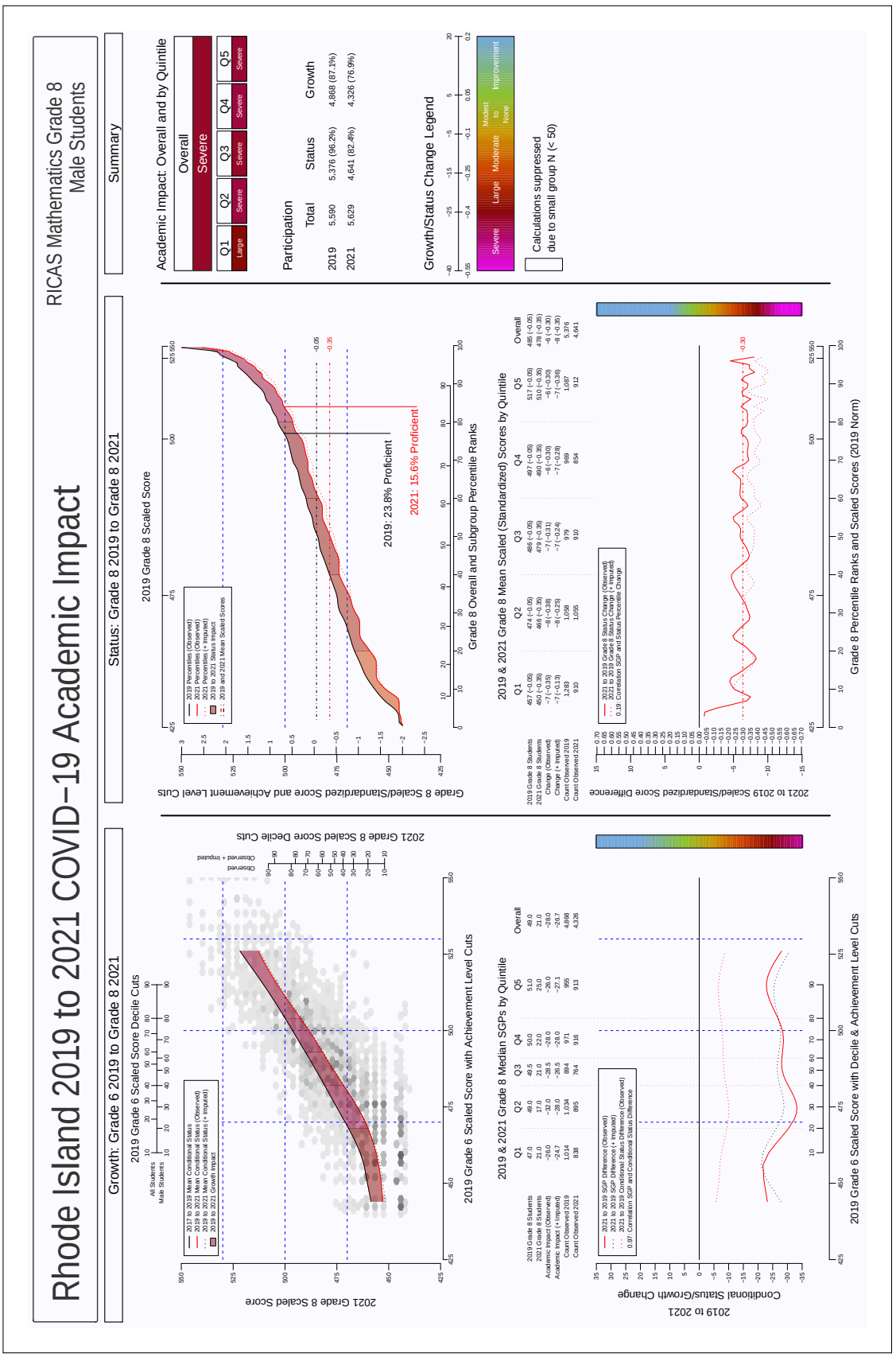


Figure 138: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 ELA, male students

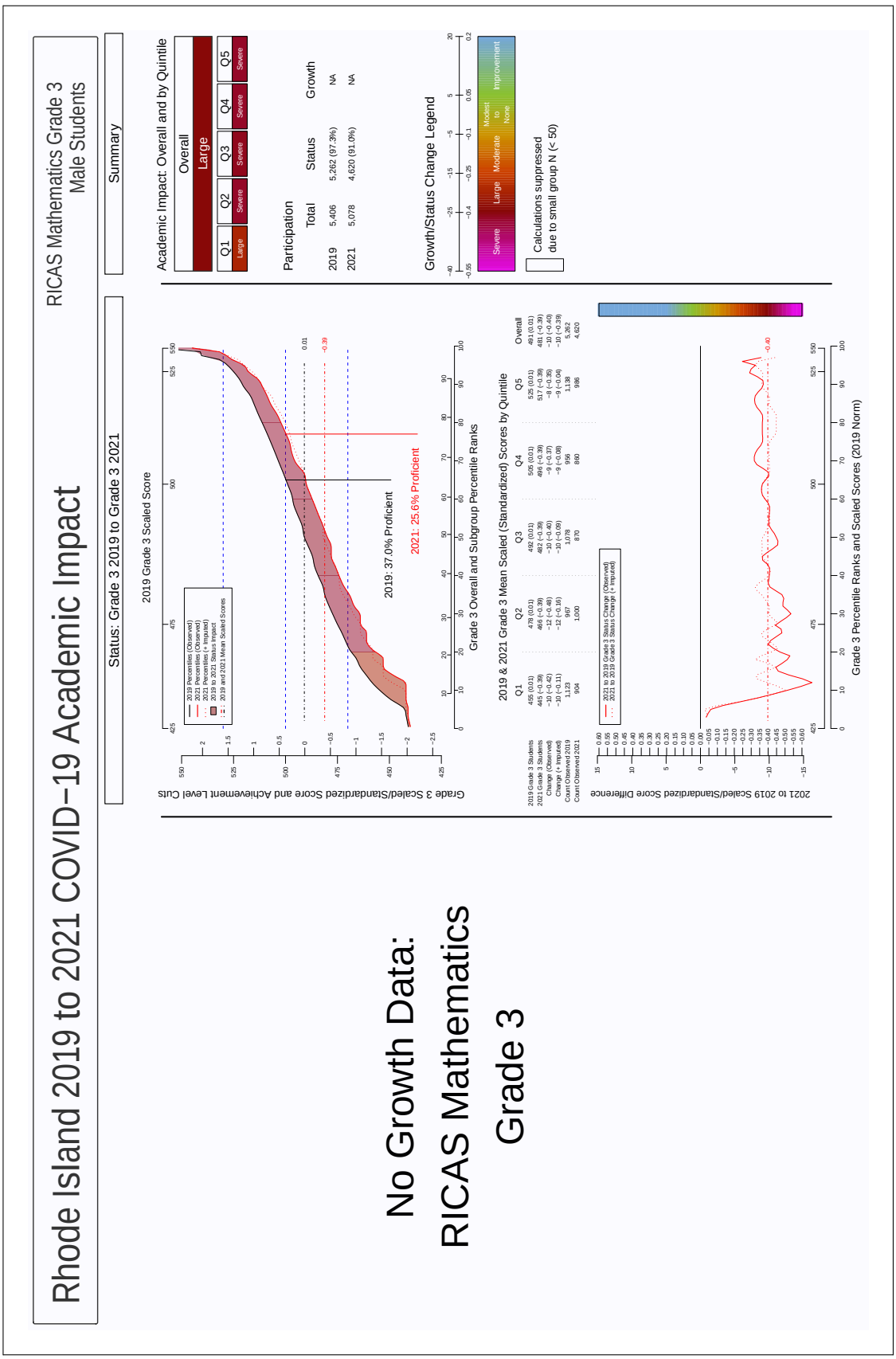


Figure 139: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 3 mathematics, male students

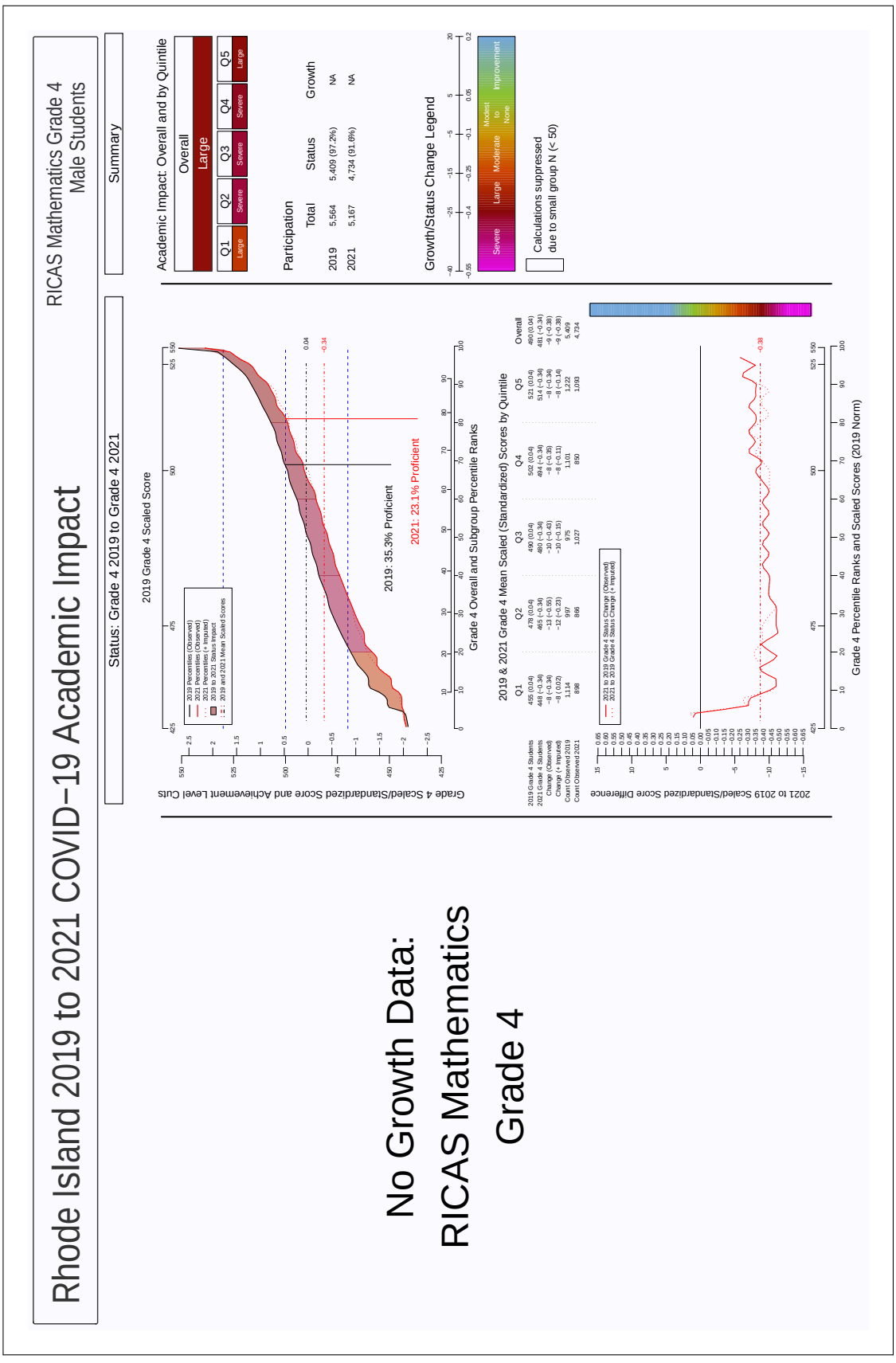


Figure 140: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 4 mathematics, male students

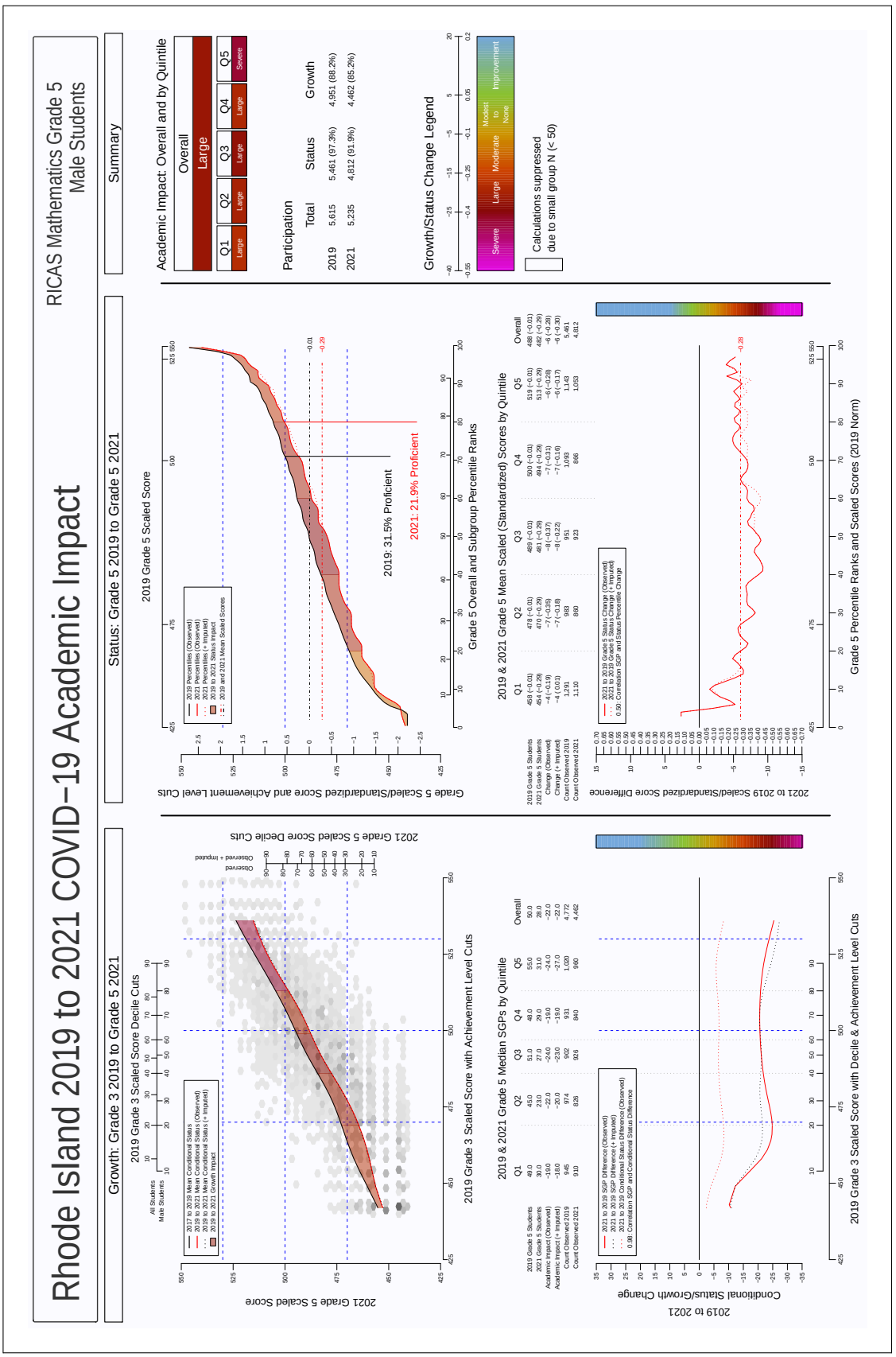


Figure 141: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 5 mathematics, male students

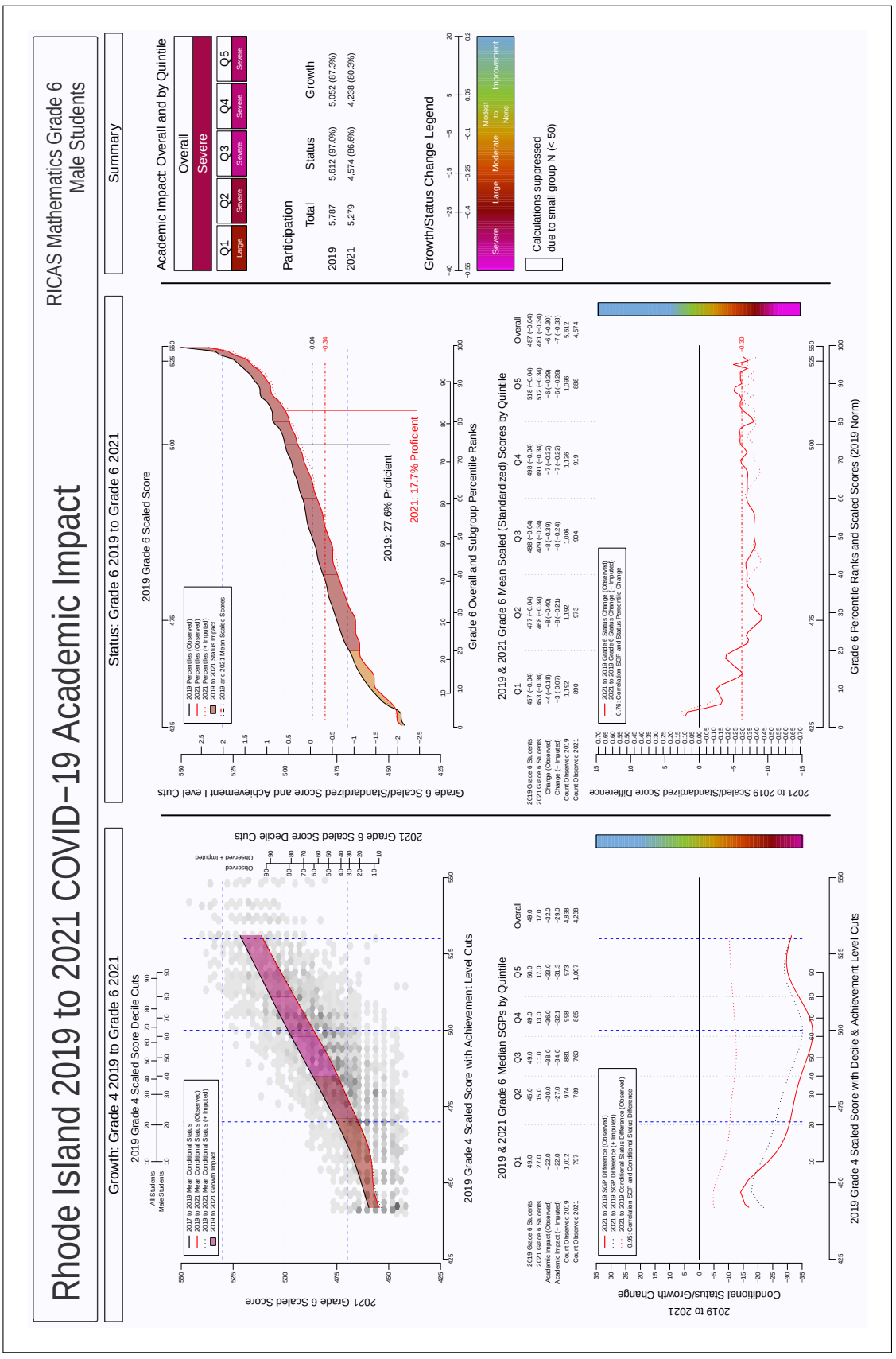


Figure 142: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 6 mathematics, male students

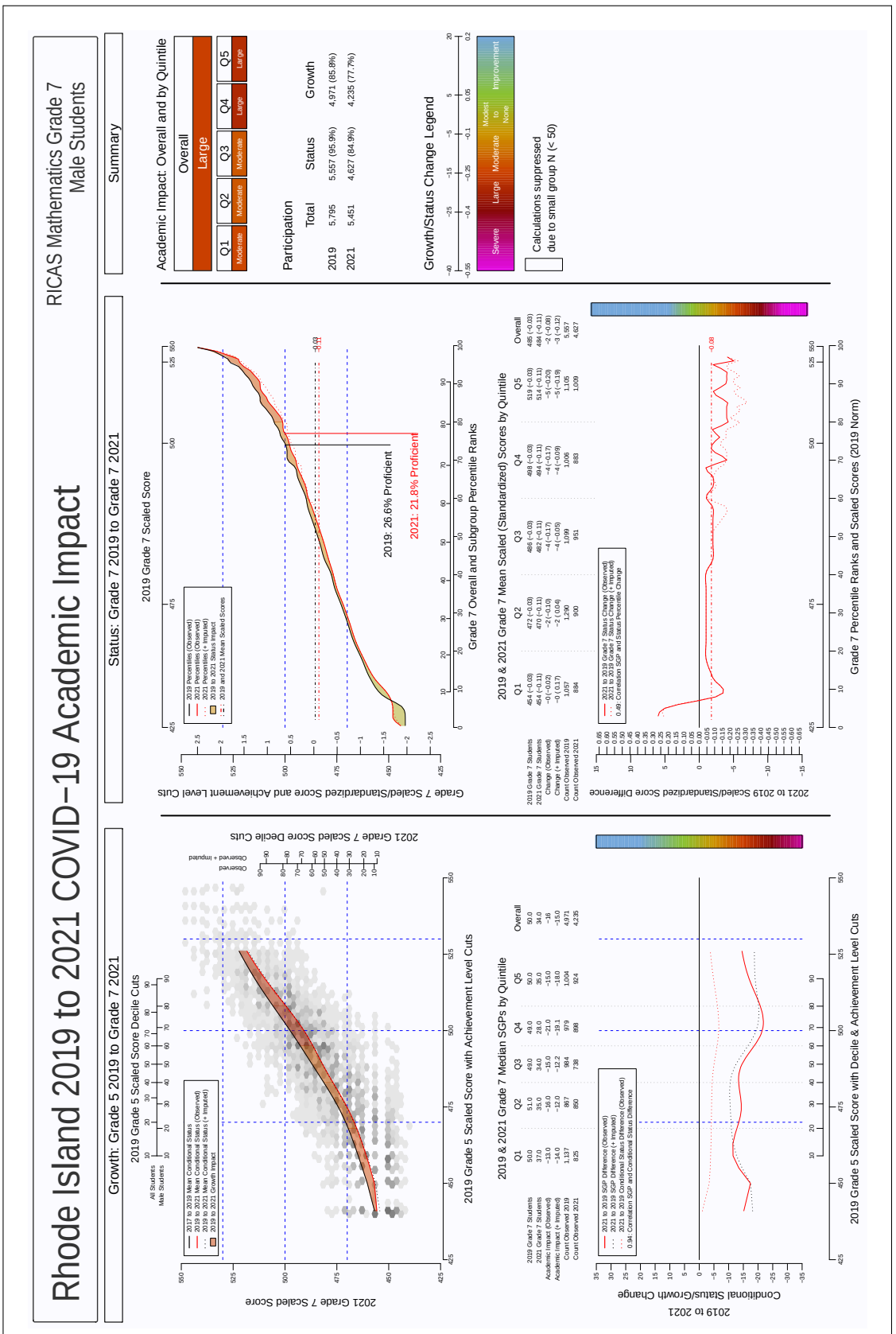


Figure 143: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 7 mathematics, male students

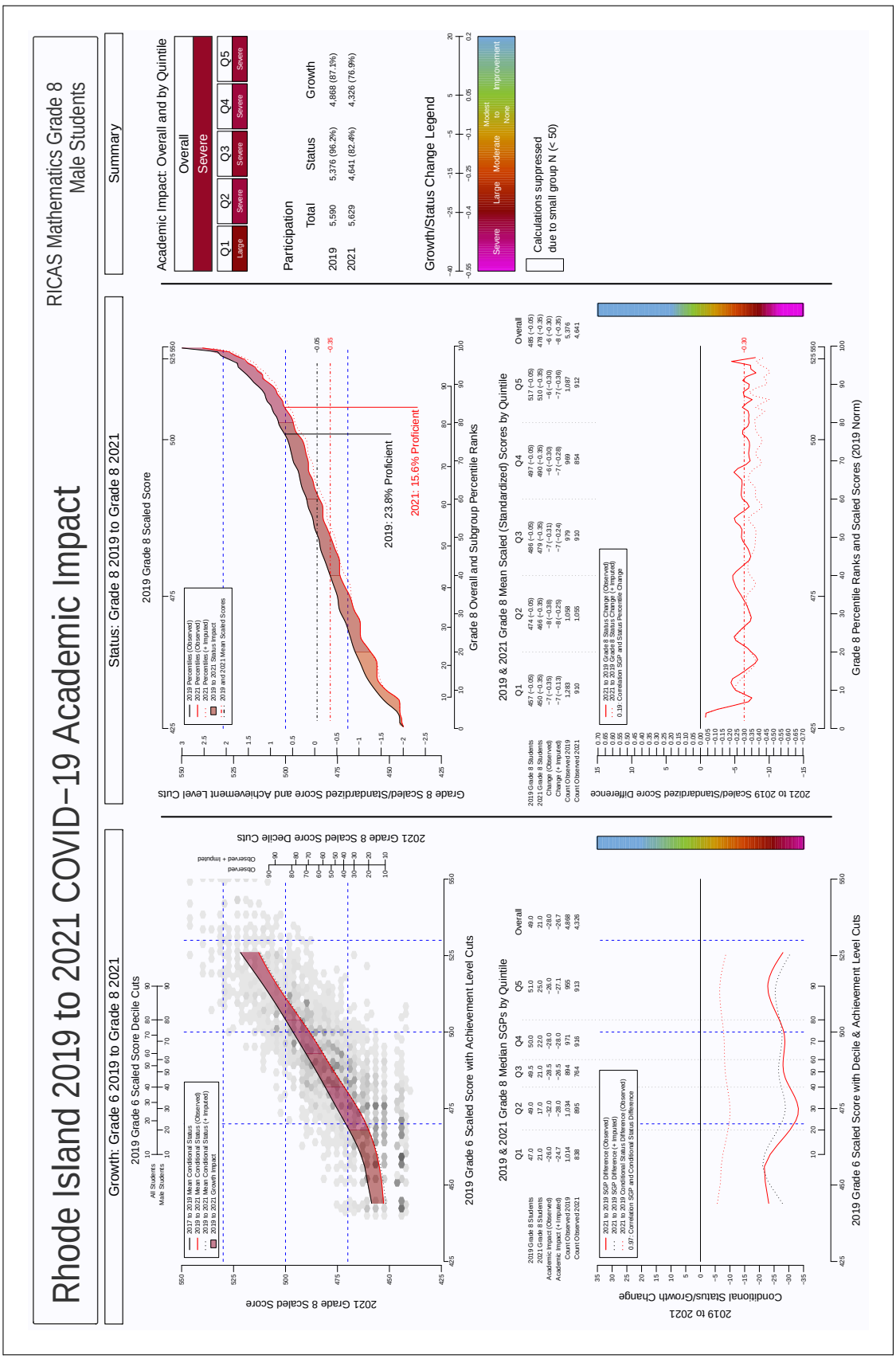


Figure 144: Rhode Island RICAS academic impact: Growth and status 2019 to 2021 grade 8 mathematics, male students

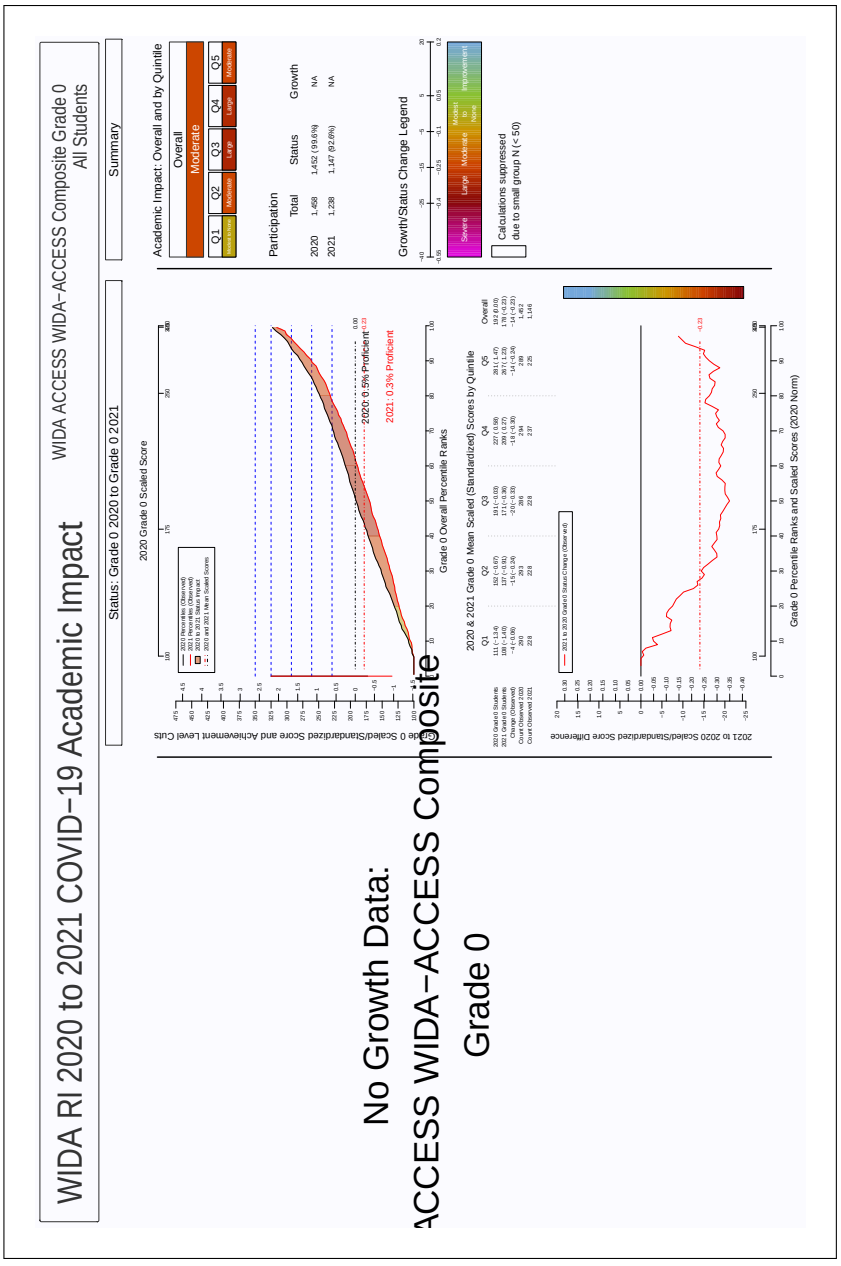


Figure 145: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade k composite

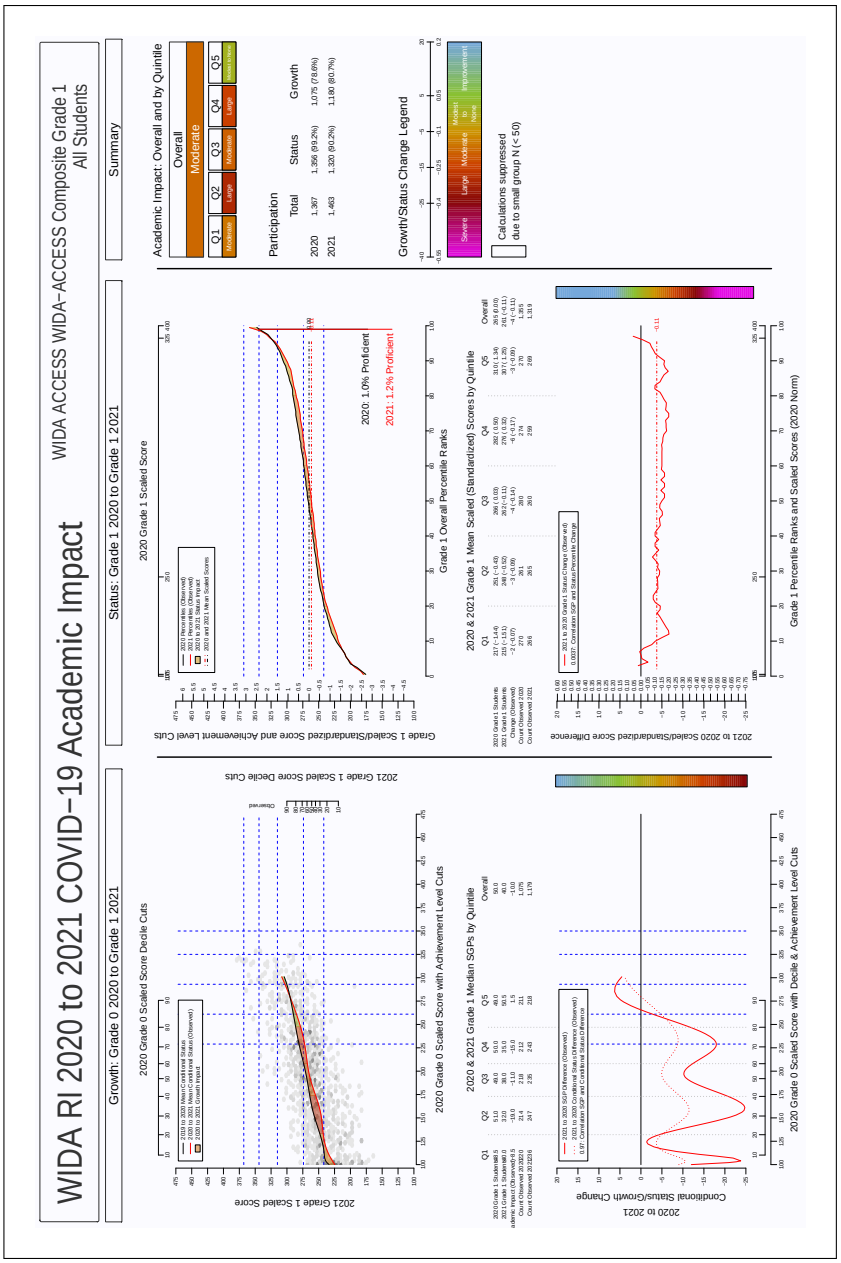


Figure 146: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 1 composite

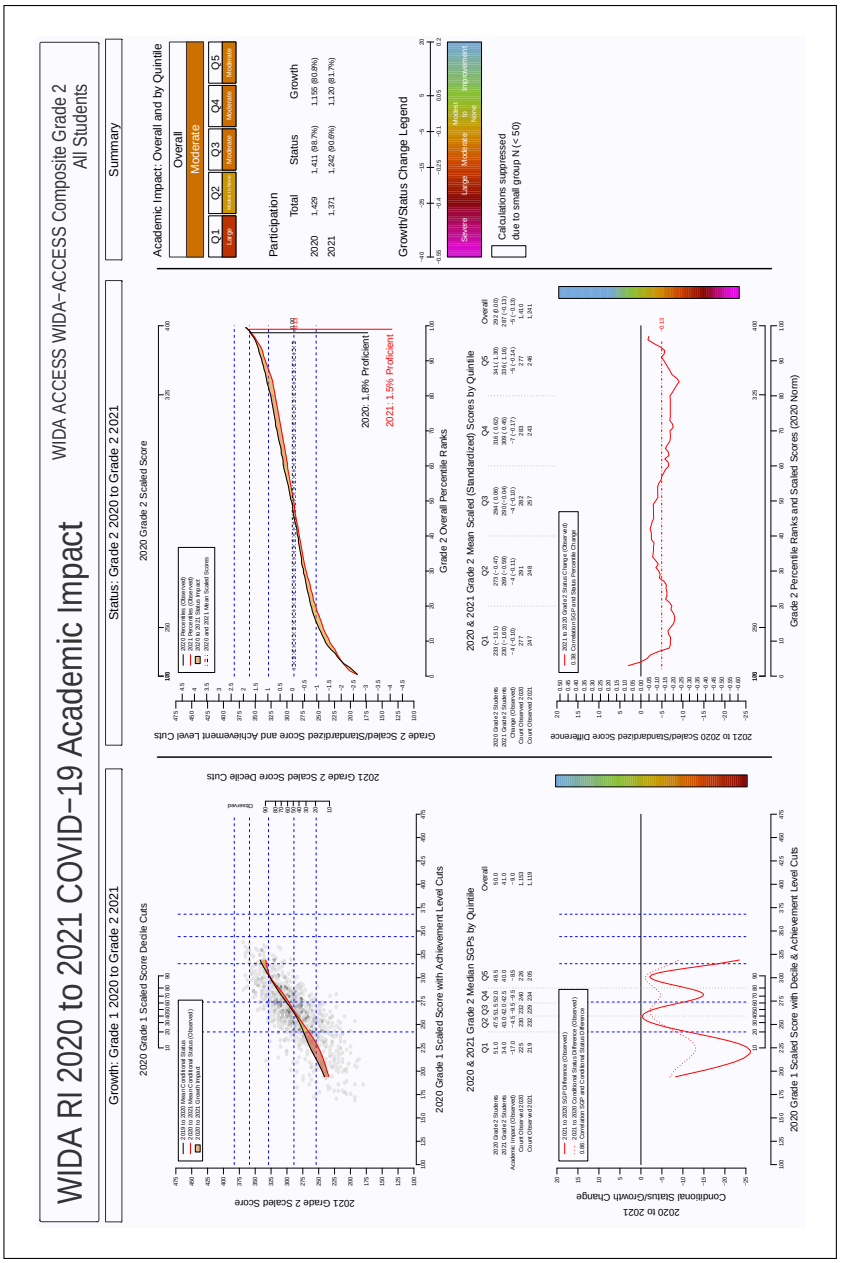


Figure 147: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 2 composite

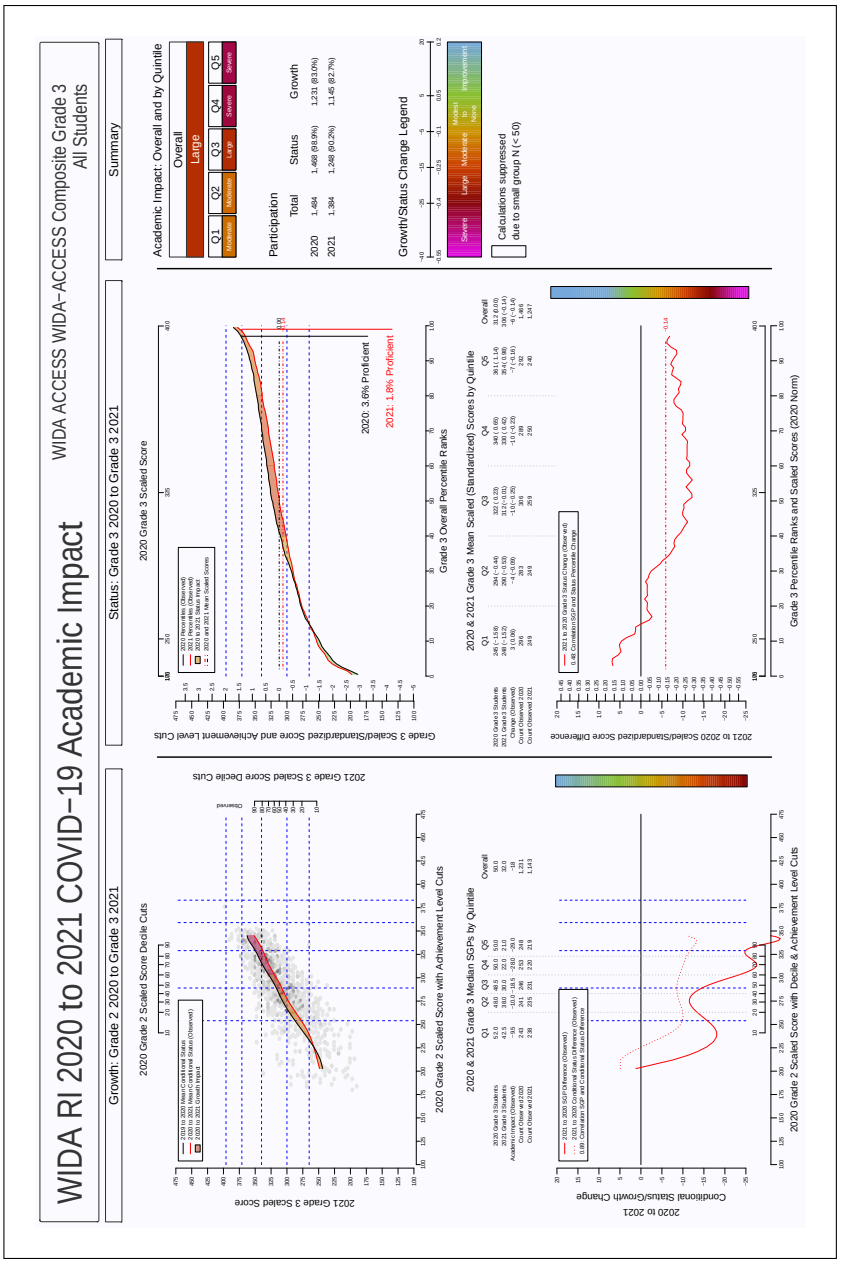


Figure 148: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 3 composite

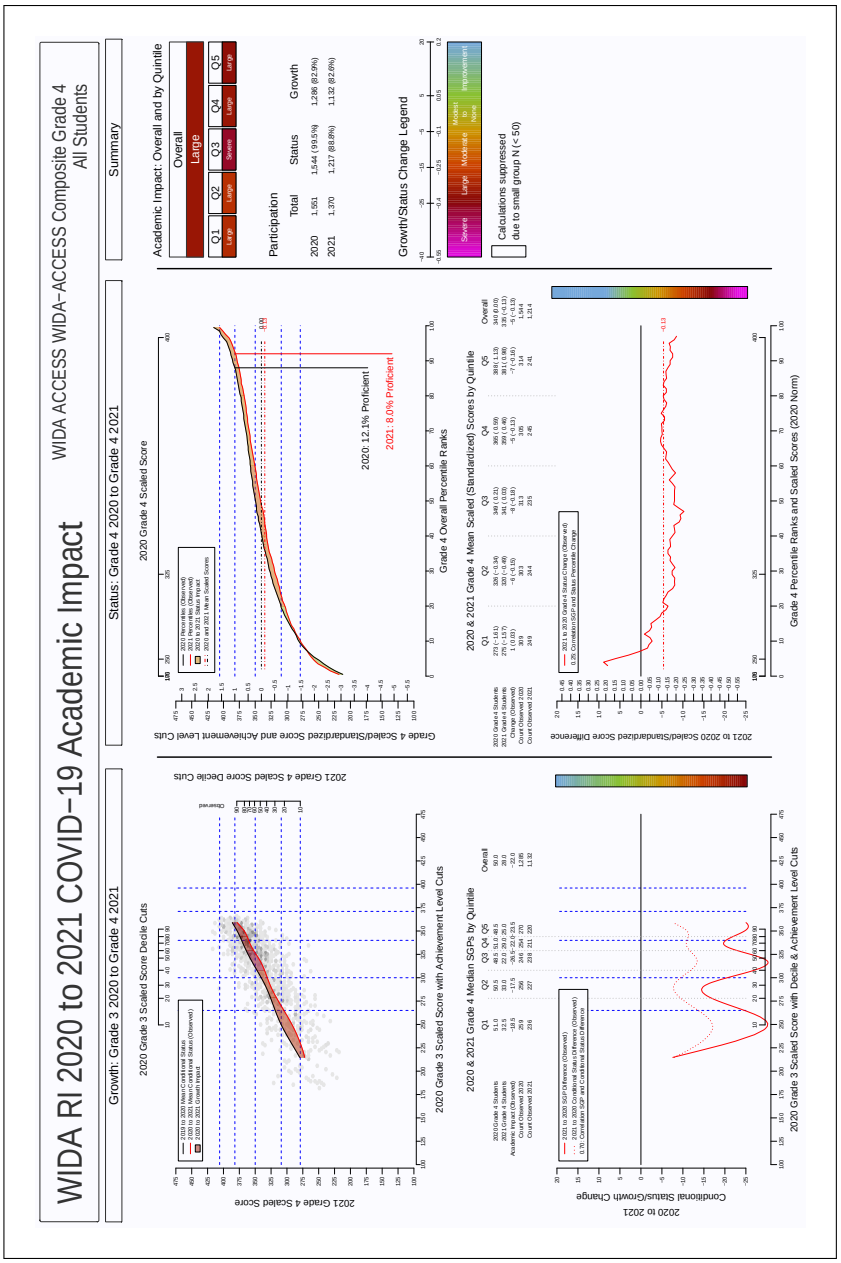


Figure 149: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 4 composite

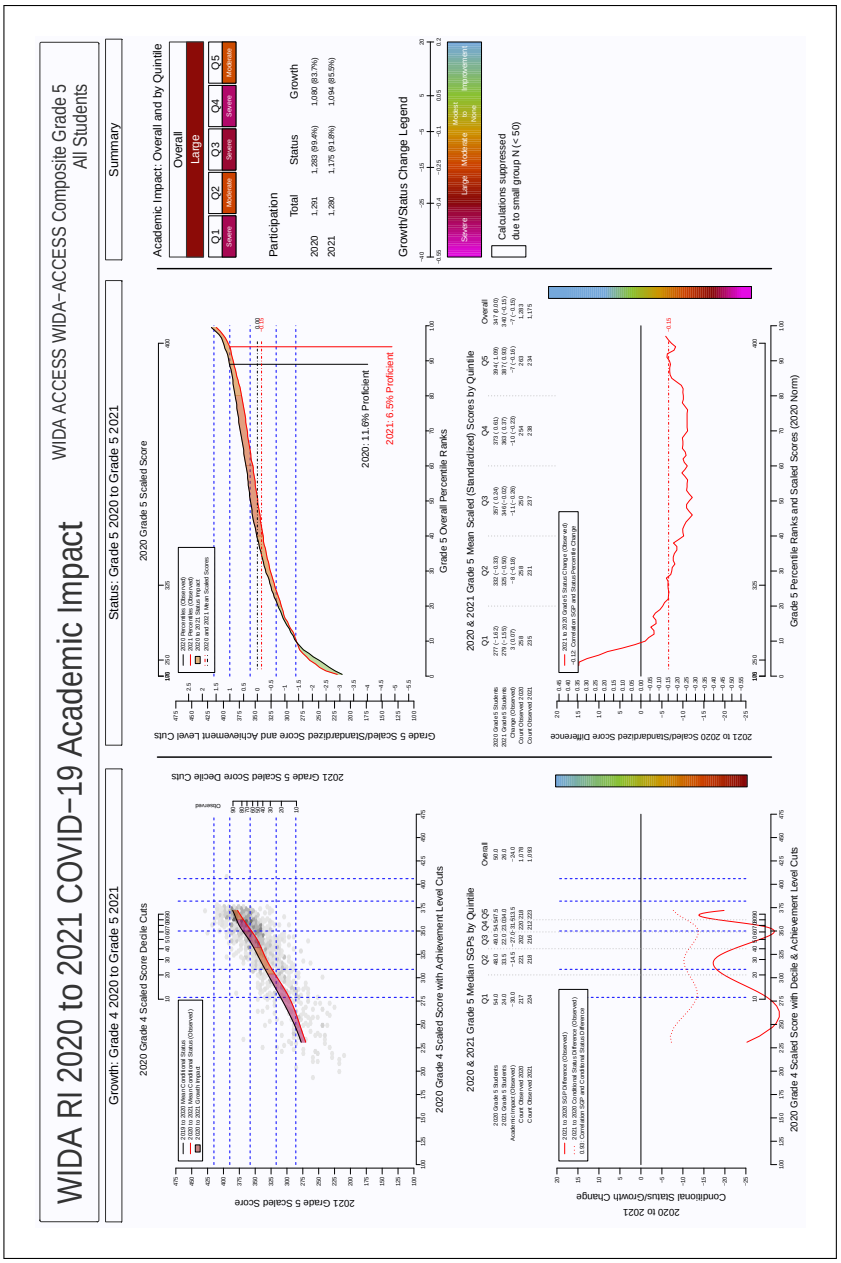


Figure 150: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 5 composite

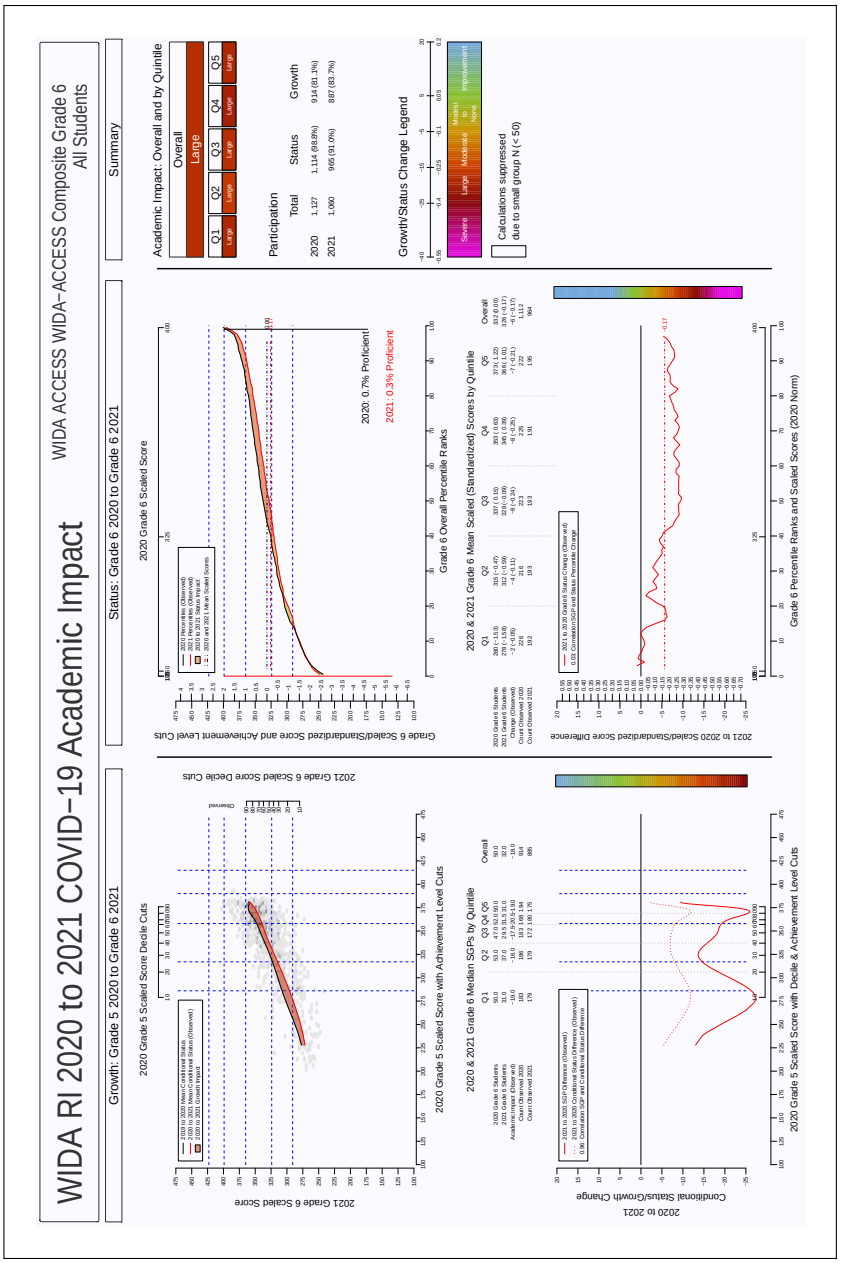


Figure 151: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 6 composite

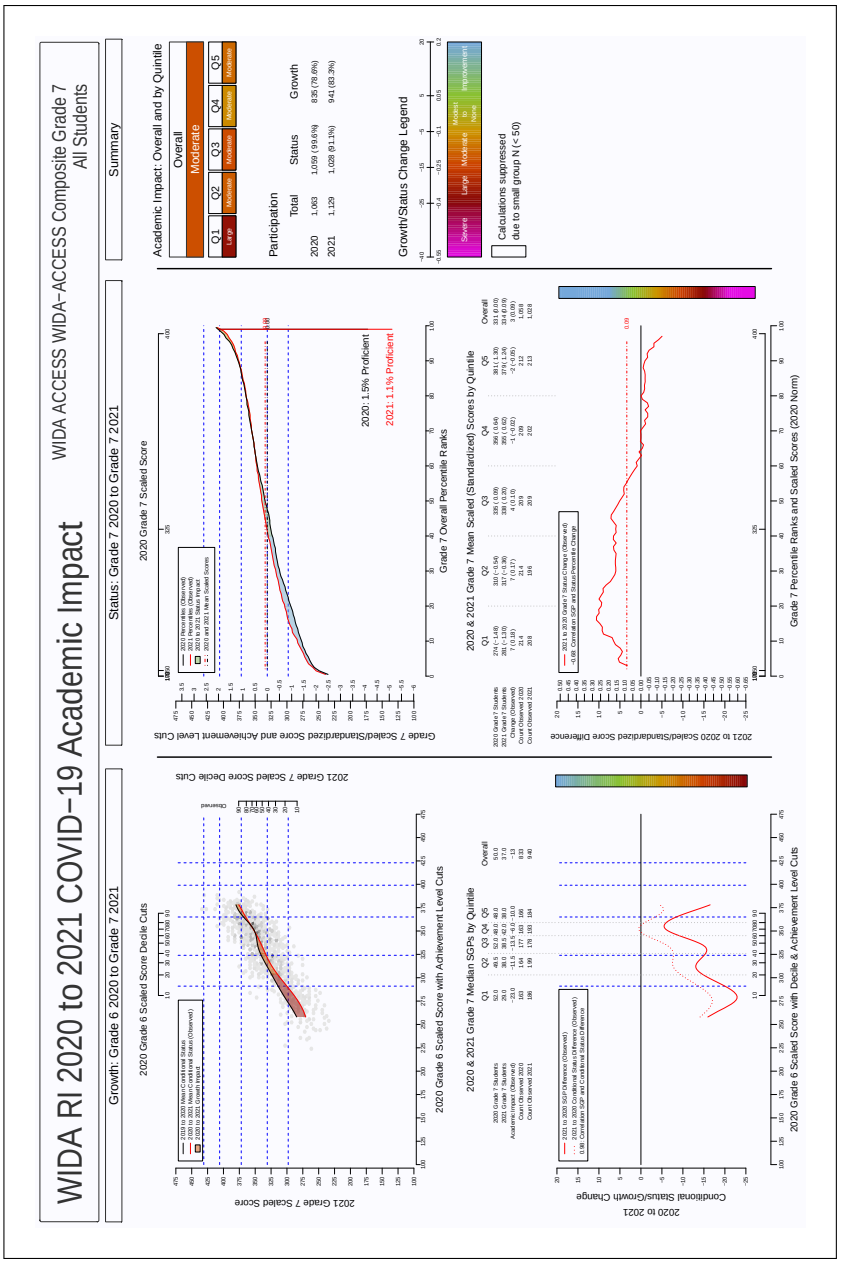


Figure 152: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 7 composite

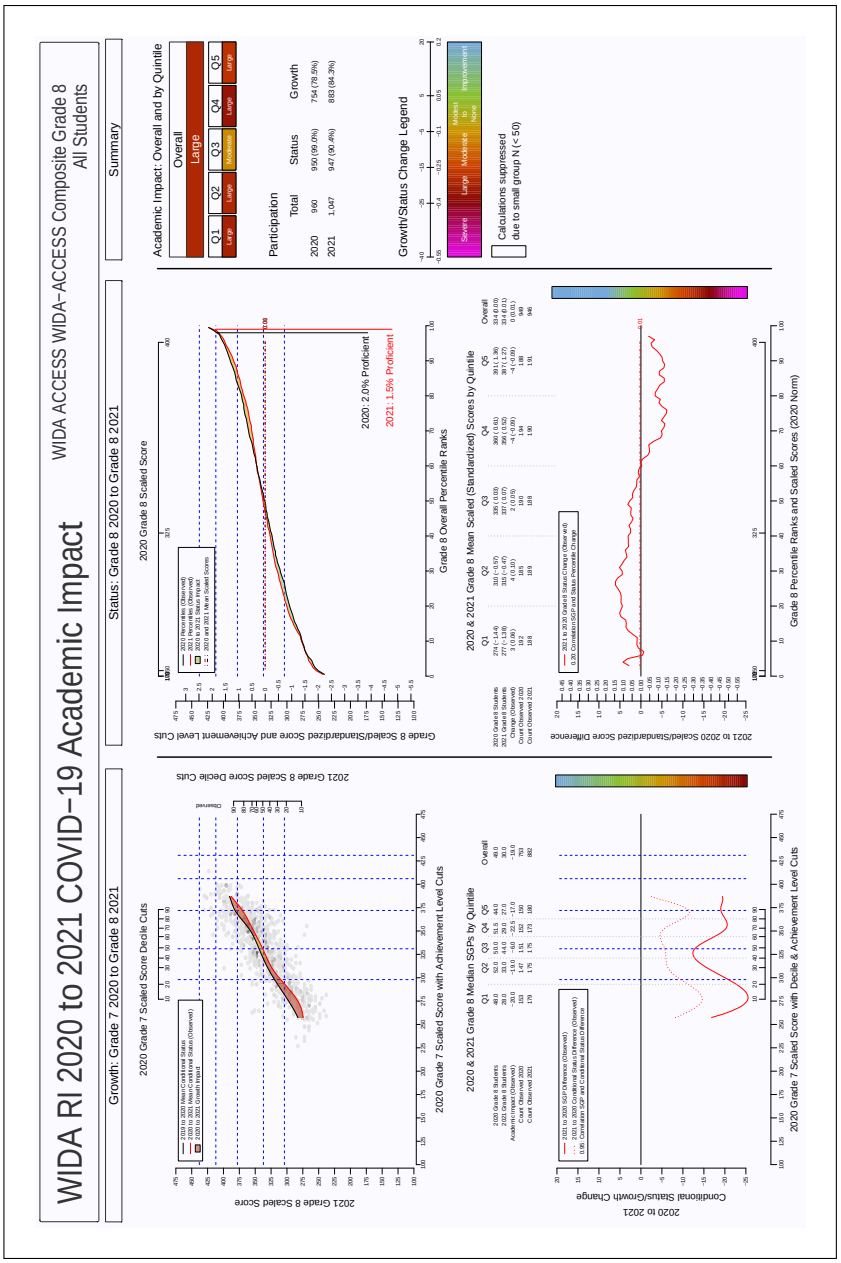


Figure 153: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 8 composite

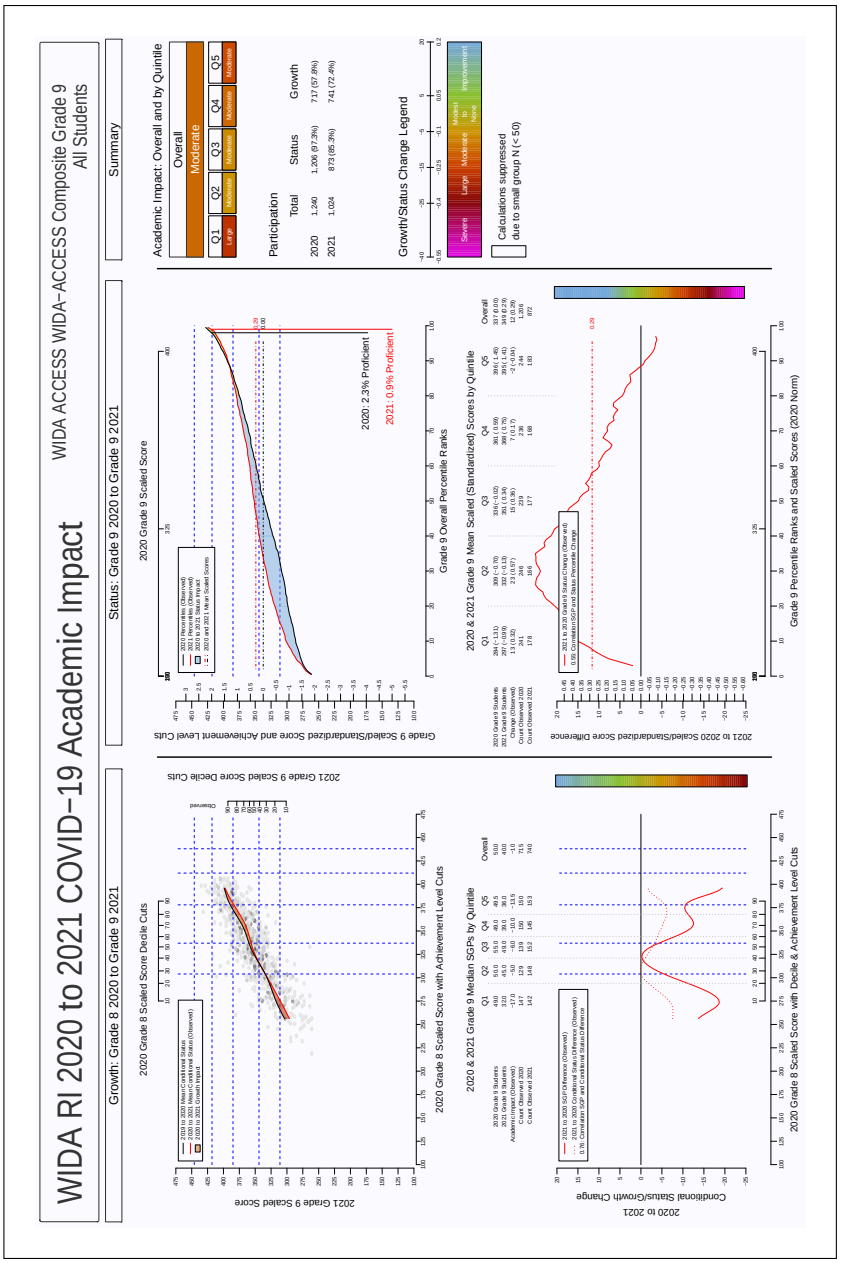


Figure 154: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 9 composite

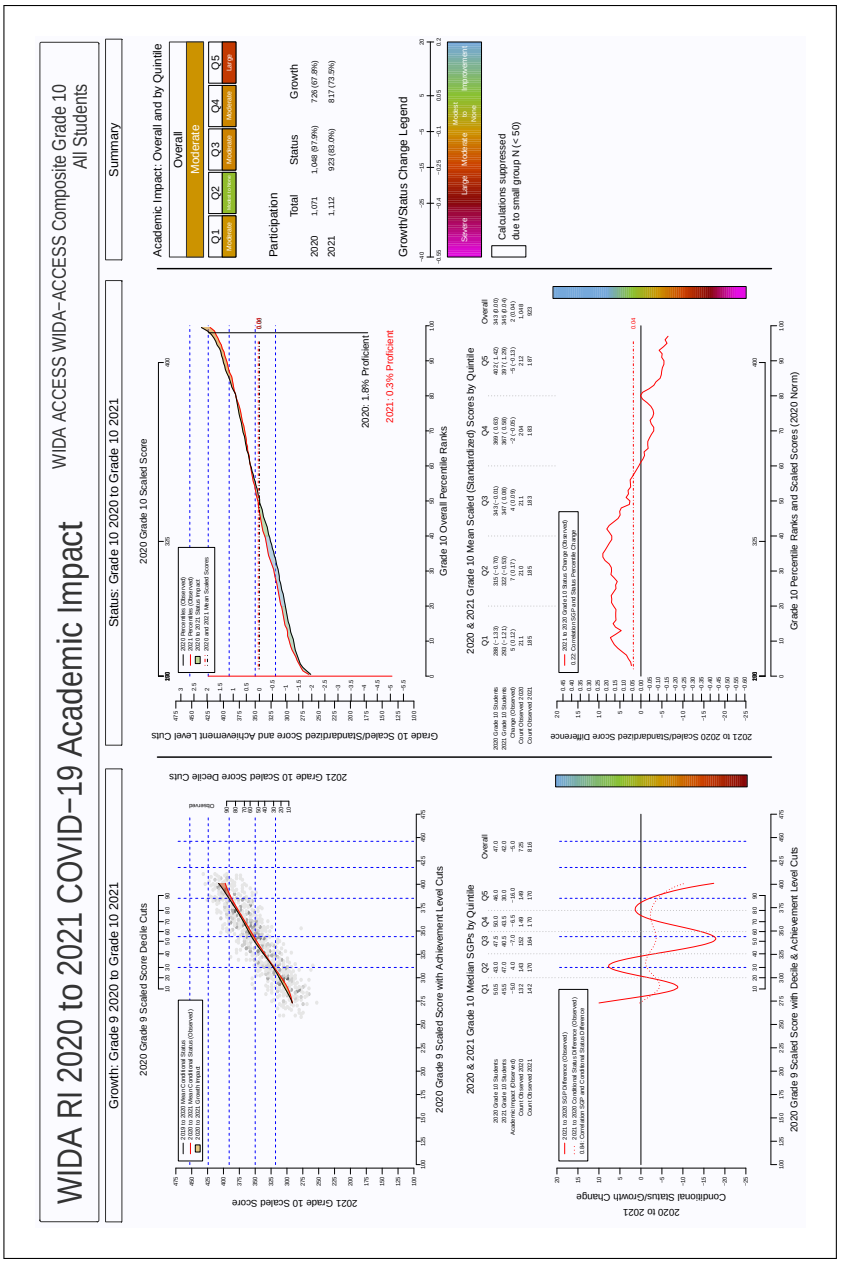


Figure 155: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 10 composite

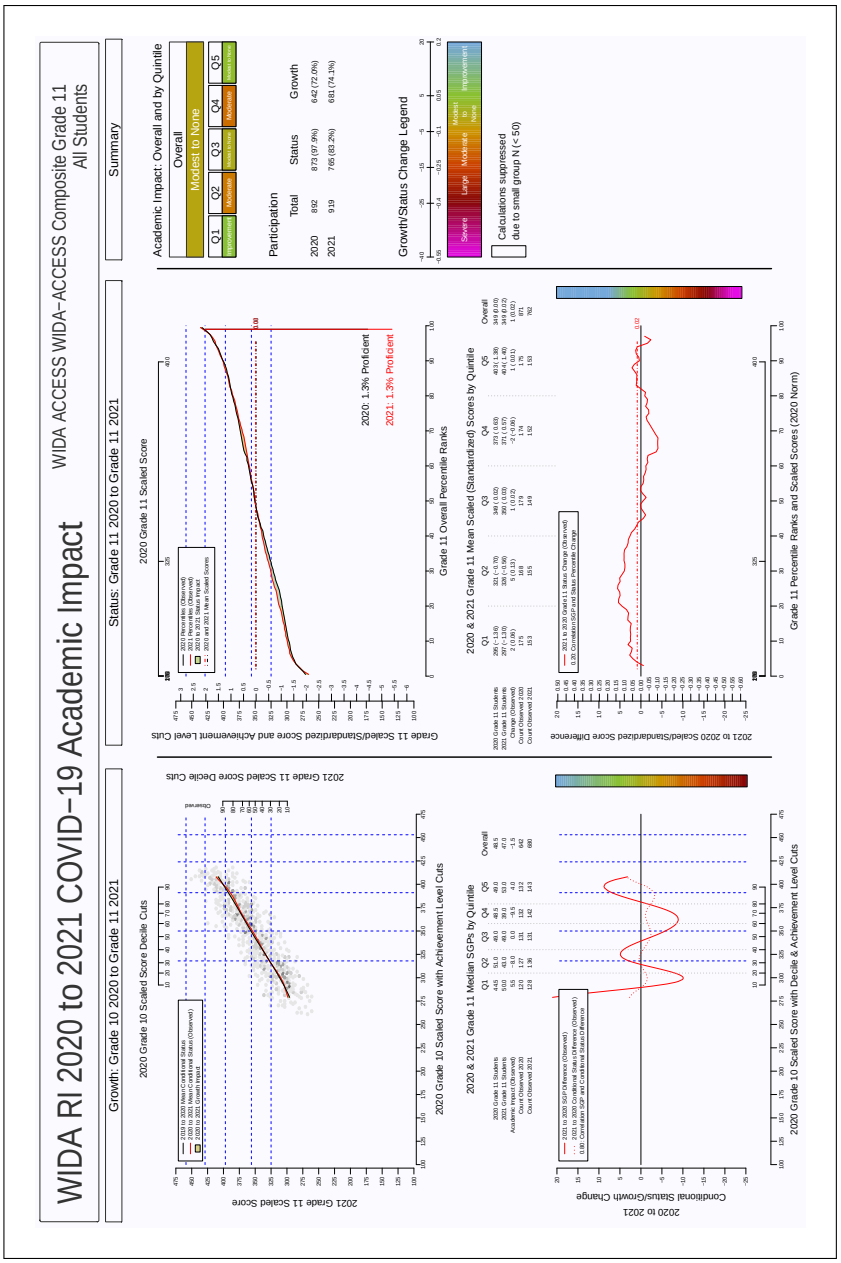


Figure 156: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 11 composite

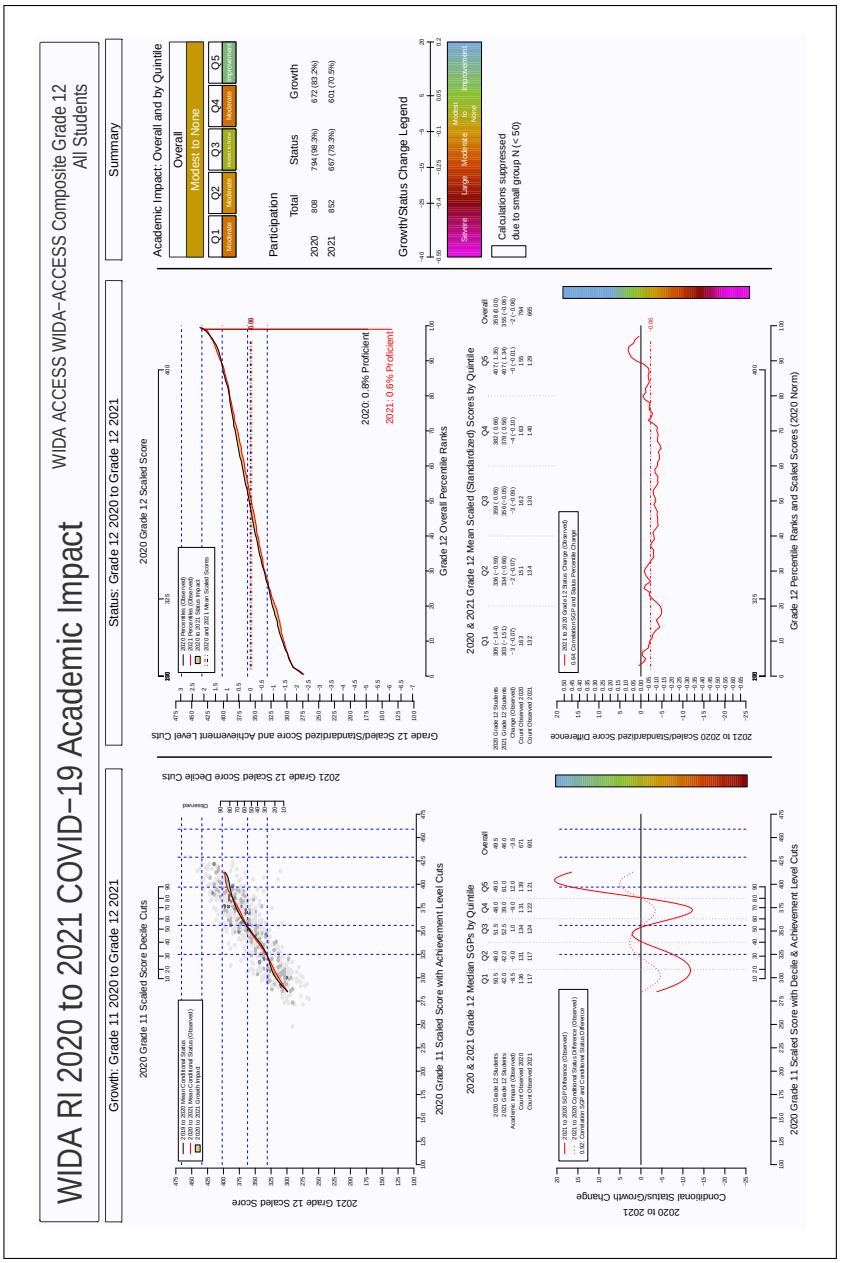


Figure 157: Rhode Island WIDA-ACCESS academic impact: Growth and status 2020 to 2021 grade 12 composite

COVID-19 Academic Impact in Rhode Island
Executive Summary

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April 26, 2022

Background

Despite tireless efforts of educators and parents to assist children with their education during the COVID-19 pandemic, evidence suggests that students in Rhode Island were substantially impacted academically. In Rhode Island, like the rest of the United States, K-12 education saw numerous and wide-ranging disruptions including where students attended class (remote or in-person), social-distancing protocols for schools, as well as COVID-19 outbreaks leading to school shutdowns.

Due to the impact on student education, it is of interest to understand the extent to which the pandemic impact students academically. States like Rhode Island who administered summative assessment in spring 2021 were able to examine the extent to which student academic attainment was impacted due to the pandemic utilizing pre-pandemic state assessment data as the baseline. The Rhode Island Department of Education together with the National Center for the Improvement of Educational Assessment utilized RICAS ELA and mathematics assessment data and WIDA-ACCESS English language proficiency assessment data to assess the impact the pandemic has had on student academic attainment.

The pandemic served as an academic headwind for students, slowing their learning due to the myriad of educational issues that arose that disrupted their learning. Academic impact refers to the extent to which learning slowed down (deceleration) — the difference between where students would have been absent the pandemic versus where they ended up with the pandemic. Fundamental to addressing and helping students recover from the academic impacts of the pandemic is a clear understanding of the academic impact. Targeted support requires an understanding of who, what, and how much to target:

Who Who were the students impacted academically by the pandemic?

What What content areas/subjects/fields were students impacted?

How Much How much were students academically impacted?

The following provides a brief synopsis of the academic impact findings with supporting analyses and figures at the end of this executive summary.

RICAS

Rhode Island's RICAS state assessment is administered in grades 3 to 8 in ELA and mathematics. Due to the pandemic in spring 2020, the annual 2020 test administration was canceled. To assess the academic impact of the pandemic 2021, RICAS student growth and status results were compared with pre-pandemic results to assess the academic impact to students overall and by demographic subgroups. General findings are as follows:[1]

- Academic impacts seen in mathematics were larger, in general, than in ELA. ELA impacts were moderate to large (see Figure 1). In mathematics impacts were large to severe.
- All demographic subgroups were impacted academically by the pandemic. However, there was variation in academic impact by demographic subgroups.
  - Of ethnic groups Hispanic students, overall, demonstrated the largest impacts in mathematics.
  - Economically and non-economically disadvantaged students were comparably impacted in ELA whereas in mathematics, economically disadvantaged students were slightly more impacted.
  - Female students demonstrated slightly more impact in ELA than male students. Female and male students were comparably impacted in mathematics.
- Academic impacts are larger in the higher grades than in the lower grades.
- English Language Learners demonstrated comparable academic impact to other demographic subgroups.
- Academic impact for special education students in grades 3 and 4 was demonstrably smaller than observed in other grades for special education students. This may be indicative of special efforts directed toward that group of students to ameliorate pandemic related academic disruptions.
- Examination of the results by quintile (see Figure 2) indicates greater academic impact for higher achieving students than lower achieving students in some grades, content areas and subgroups.
- Examination of academic impact results for larger districts (see Figure 5) indicates all districts with some impact but with substantial variability by district.

Analyses conducted qualified academic impact on an ordinal scale including severe, large, moderate, modest to none, and improvement. There is debate associated with how to communicate academic impact. In general, based upon long standing observations of student growth in Rhode Island and other states, severe, large, and moderate impacts are so large as to likely require more than a year to overcome with additional academic supports. Modest academic impacts can likely be ameliorated within a single year as the learning increases required are not so extreme as to require substantial intervention.

[1] Results supporting these findings are presented at the end of this summary in Figures 1, 2, and 5.

WIDA-ACCESS

Rhode Island's WIDA-ACCESS state assessment is an English language proficiency examination administered in grades K to 12. The assessment is administered primarily in late winter and thus, unlike RICAS, was administered to students statewide during the 2019-2020 academic year prior to the onset of the pandemic. To assess the academic impact of the pandemic, 2021 WIDA-ACCESS student growth and status results were compared with pre-pandemic results (spring 2020) to assess the academic impact to students overall and by demographic subgroups. General findings are as follows:

- Academic impacts as measured by the composite score moderate to large academic impact in the elementary and middle school grades with lesser impact in the high school grades (see Figure 3).
- Academic impact by achievement quintile generally indicates higher achieving students with more severe impact (see Figure 4).

With regard to the nominal impact in high school, recall that academic impact is synonymous with deceleration in student learning. The absence of academic impact implies learning for those students showed modest to no deceleration. This result is more puzzling when we see that for students in lower grades, academic impact was large (i.e., learning decelerated appreciably). There are two competing hypotheses for this situation:

- Student, pre-pandemic, typical rates of learning were supported through some combination of factors.
- Student, pre-pandemic, typical rates of learning were low to begin with such that deceleration couldn't occur.

Given that these little results are consistent across seven states, it seems likely that the latter hypothesis holds.

Conclusion

2021 Rhode Island RICAS and WIDA-ACCESS data was successfully used in combination with historical Rhode Island assessment data to model the academic impact the pandemic has had on Rhode Island students. The results demonstrate substantial negative academic impacts on students with larger impacts in mathematics than in ELA. Results, in general, show larger impacts in higher grades than lower grades. However, in some grade and content areas there were uneven impacts as well as variability by demographic and academic subgroups.

In general, the magnitude of the impacts imply that high rates of learning (i.e., academic growth) will need to be supported for a substantial amount of time (three to five years) in order for recovery to pre-pandemic levels to take place. Academic growth rates necessary to ameliorate pandemic related impact will likely not occur without additional supports needed to sustain such learning. RICAS and WIDA-ACCESS data from 2022 assessment will be a critical barometer to determine whether recovery has commenced or whether students continue to fall further behind academically.

Appendix

Each of the following figures shows the academic impact associated with the pandemic on student RICAS and WIDA-ACCESS assessments. Academic Impact was separated into 5 categories based upon the growth impact (or status impact in grades 3 and 4) observed.

Severe Growth Impact ≤ -25 or Status Impact ≤ -0.4.

Large $-25 <$ Growth Impact ≤ -15 or $-0.4 <$ Status Impact ≤ -0.25.

Moderate $-15 <$ Growth Impact ≤ -5 or $-0.25 <$ Status Impact ≤ -0.1.

Modest to None $-5 <$ Growth Impact ≤ 5 or $-0.1 <$ Status Impact ≤ 0.05.

Improvement Growth Impact > 5 or Status Impact > 0.05.

To help illustrate academic impact a color scale is used ranging from magenta (Severe) to blue (Improvement). Due to the nature of the cutscores, academic impact of different groups may receive colors that are very close to one another (because their academic impacts values are very close to one another) even though their category name is different.

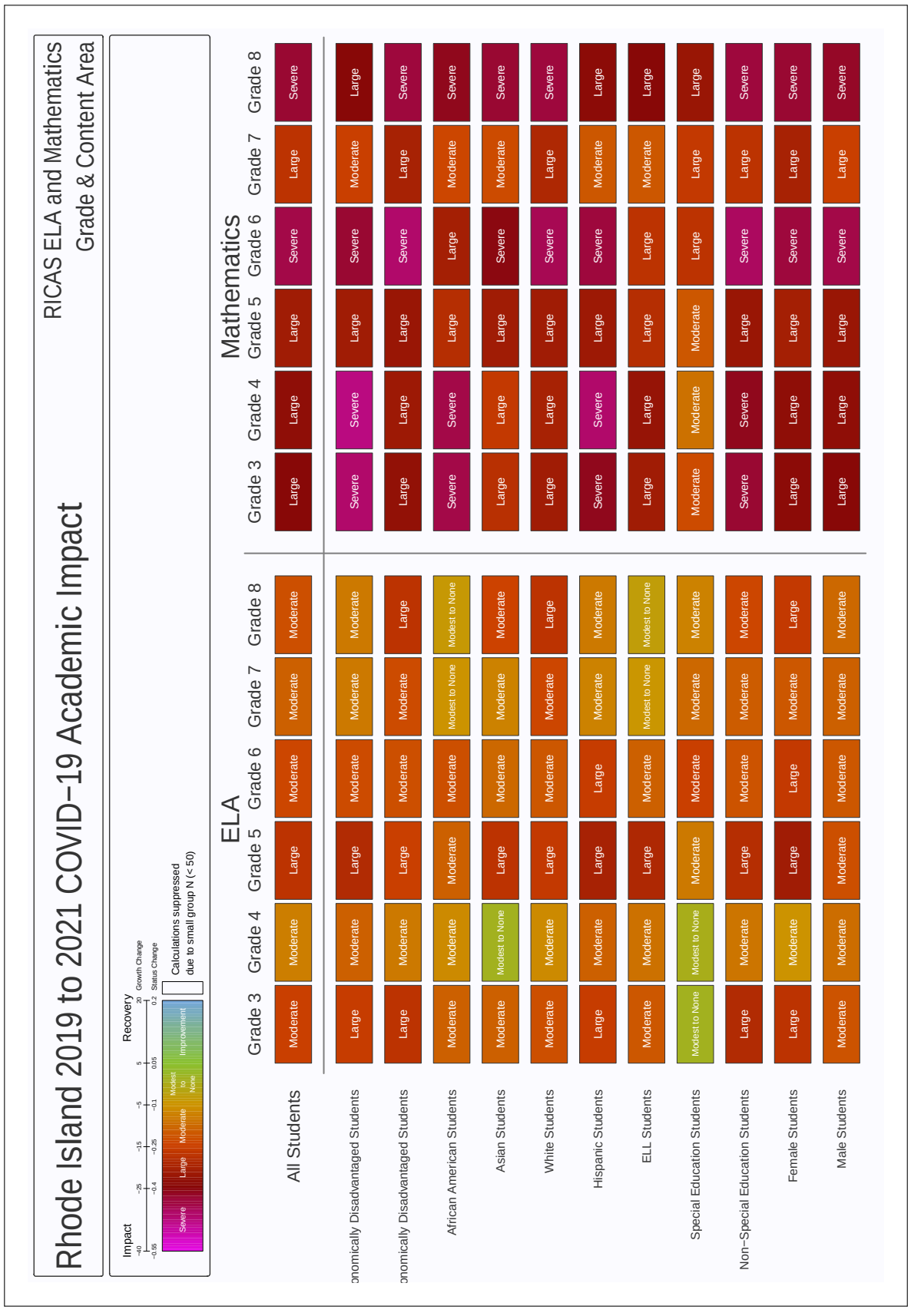

Figure 1: RICAS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

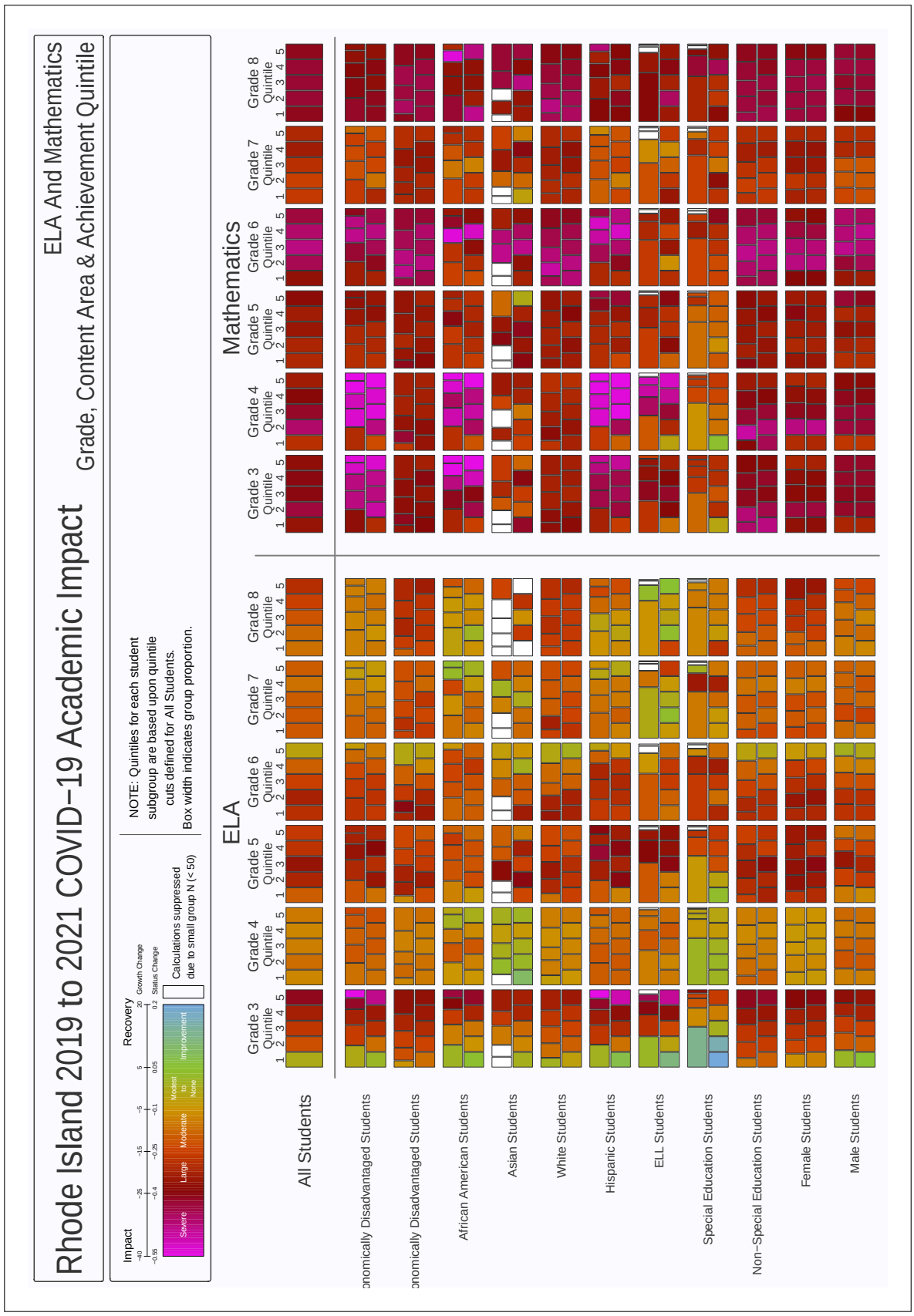

Figure 2: RICAS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

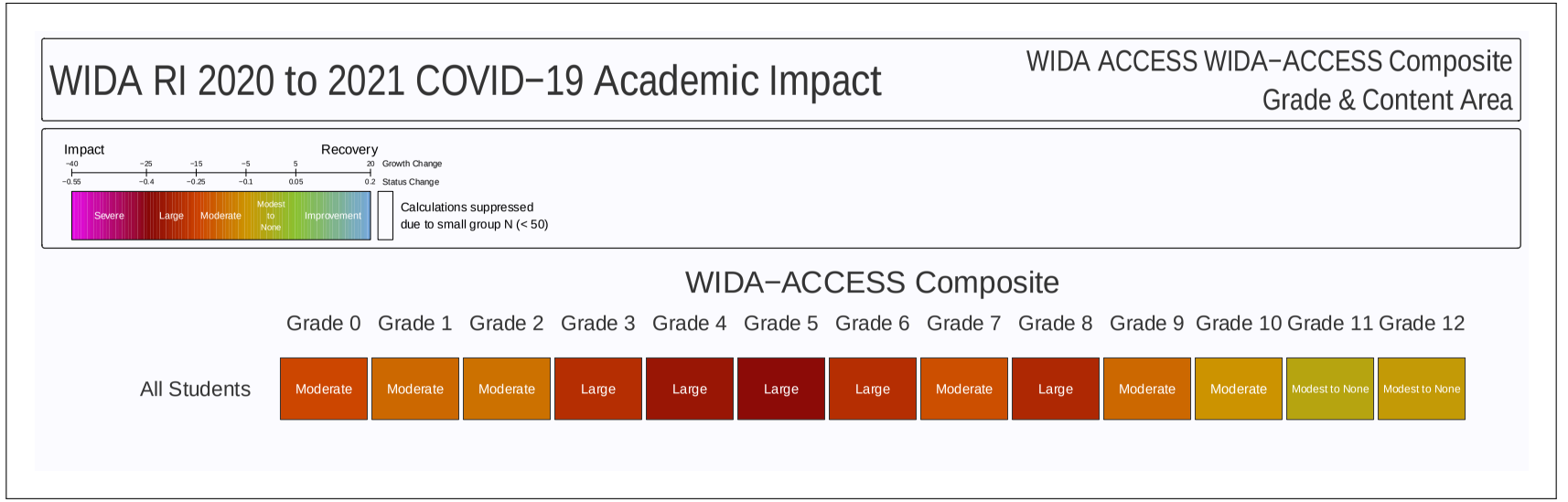

Figure 3: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

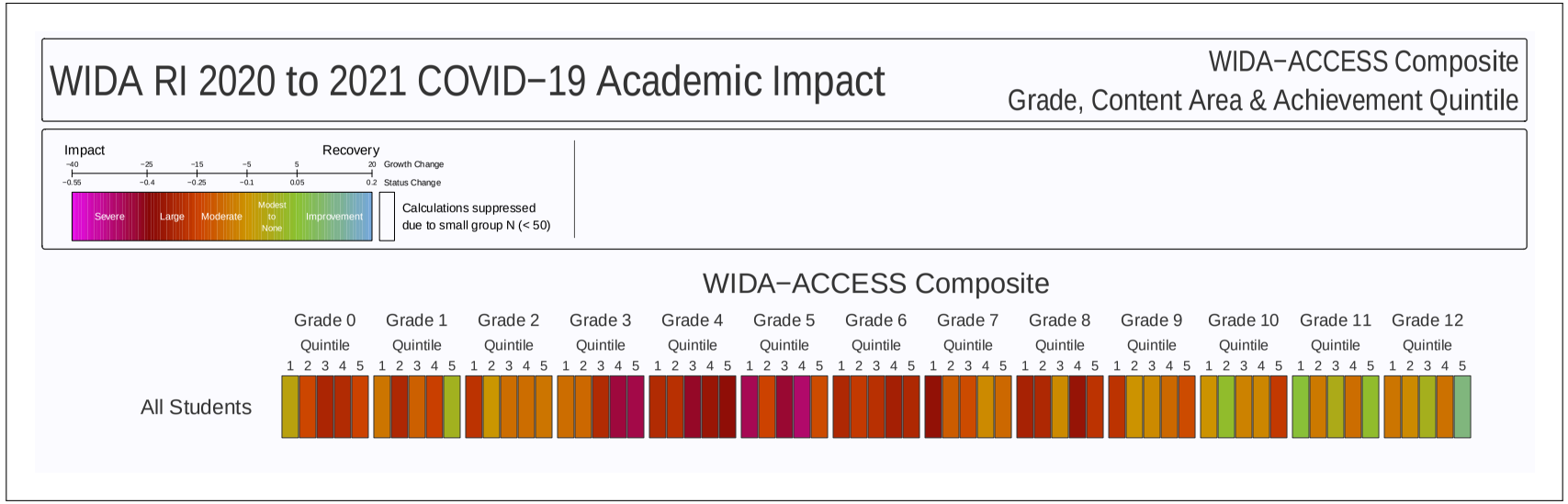

Figure 4: WIDA-ACCESS Academic Impact Overview for all students and student subgroups by grade, content area and achievement quintile

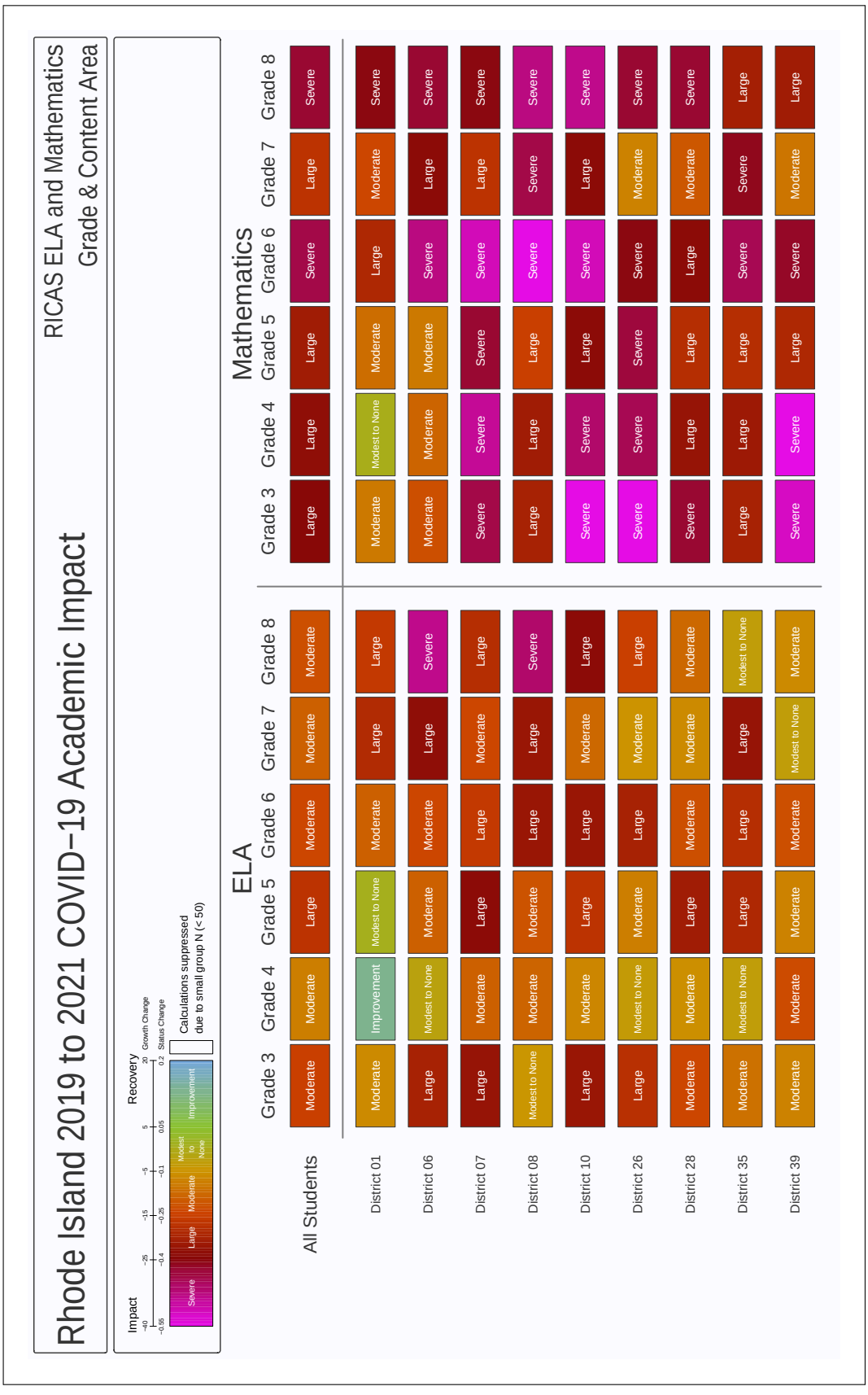

Figure 5: RICAS Academic Impact Overview for all students and student subgroups by grade, content area, and district (greater than 250 students/grade and content area)

Figure 6: RICAS Academic Impact Overview for all students and student subgroups by grade, content area, and district (greater than 250 students/grade and content area) by quintiles

Figure 7: Rhode Island RICAS academic impact comparison for all students to other states by content area and grade