Using Multiple Achievement Measures to Understand the Effects of COVID-19 on Student Learning[1]

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This paper describes a set of studies conducted to help understand the effects of pandemic-related disruptions on students' academic performance during the 2020-2021 academic year in the state of Utah. The purposes of these studies are to:

- document overall trends in participation and achievement,
- document the influence of the pandemic on already-existing achievement gaps, and
- explore how opportunity-to-learn and other related information interact with the academic outcomes indicated above.

Research Objectives

The overarching question that the studies intended to answer is: *To what extent have pandemic related disruptions influenced student achievement in Utah?*

To overarching answer this question, we worked with the Utah State Board of Education (USBE) to formulate specific research questions for the studies. The research questions were shared with and refined based on input from the USBE's technical advisory committee (TAC). They are:

1. (*Participation*) Which students participated in assessments and other measures during the 2020-2021 school year as a proportion of the underlying school population?
2. (*Performance*) What was the performance of students who participated in assessments during the 2020-2021 school year?
3. (*Trends*) To the extent that matched samples can be constructed, what do the results of a "fair comparison" illustrate in terms of comparative performance between the 2020-2021 and 2018-2019 school years?
4. *(Learning Model)* Based on the analyses described above, what is the relationship of learning model (remote, hybrid, in person) to student achievement?
5. *(Opportunity to Learn)* What were the results of the various opportunity-to-learn (OTL) measures during the 2020-2021 school year?
6. *(OTL and Performance)* How does the performance observed from the analyses described above relate to OTL measures?

[1] This study was conducted in conjunction and in support of the Utah State Board of Education (USBE). An Executive Report, which includes highlights and key findings from the studies, is available at this USBE web page.

Methodology

In our analyses and summary of findings, we adhere to the maximum: "Description before inference; inference before evaluation." In other words, because there are so many unknowns this school year, we first must closely examine who participated in instruction and assessment this year before trying to compare performance across years, schools, and districts.

Data Sources

The following sources of data were used to address the research questions (RQs) for the studies:

- To answer the research question about participation (i.e., RQ1), the studies used 2020-2021 enrollment and test participation data for RISE and Utah Aspire Plus, Utah's end-of-year summative assessments in ELA, mathematics, and science for grades 3-8 and high school respectively.
- To inform research questions related to academic performance (i.e., RQ2, RQ3, and RQ6), the studies used student achievement data from the 2016-2017, 2018-2019, and 2020-2021 administrations of RISE and Utah Aspire Plus.
- To address the research question about learning model (i.e., RQ4), the studies used data from the *2020-2021 COVID Impact Questionnaire*. This questionnaire was given to Utah LEAs and schools about the in June 2021 and asked them to provide detailed information about learning models, schedule changes, and instances of school closures during the 2020-2021 academic year.
- To answer research questions related to OTL (i.e., RQ5 and RQ6), the studies used responses to the *OTL Survey* administered to students at the end of their spring 2021 RISE and Utah Aspire Plus test sessions.

Metrics

The method we adopted in our analysis follows the recommendations by Dr. Andrew Ho in this memo that he shared with the Council of Chief School Officers' (CCSSO) Technical Issues in Large Scale Assessment (TILSA) collaborative during its convening in February 2021. In the memo, Dr. Ho describes three metrics for state reporting of aggregated test scores in 2020-2021 to "advance the goal of accurate score interpretations and fair trend comparisons among schools and districts…" (Ho, 2021, p. 1) These metrics are:

- A *Match Rate* measure that examines the percentage of students who have comparable test scores across 2019 and 2021 and comparing it with historical percentages (i.e., across 2017 and 2019). This measure helps provide context for the participation rates and allows for the identification of grade levels, content areas, student groups, schools, and/or LEAs with unusual declines in 2021.
- A *Fair Trend* adjustment that accounts for changes in the testing population due to the events of 2020-2021, allowing for a more 'apples to apples' comparison of 2021 academic performance to the performance of similar students in 2019.

- An *Equity Check* measure that attempts to estimate the best-case academic performance of students who did not test in 2021, providing a gauge of the impact of missing students on academic outcomes.

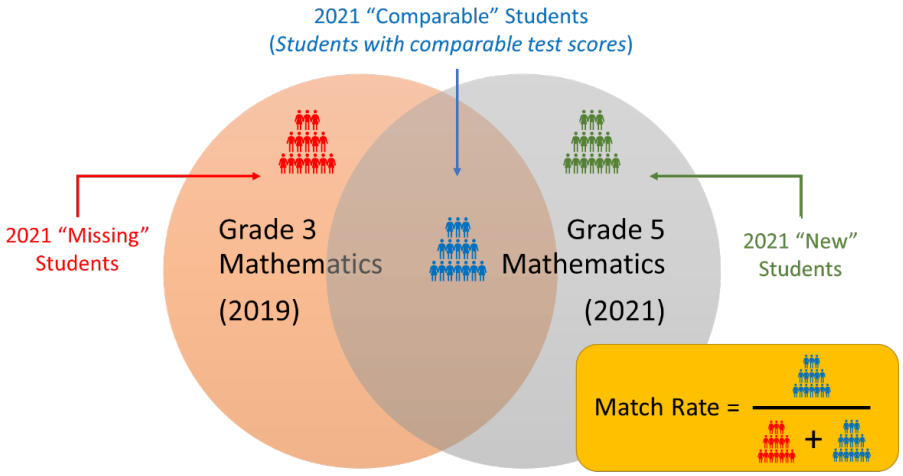
Because of the prominent role these metrics serve in the studies, we elaborate on the definition and computation of each metric next.

Match Rate

Figure 1 is a visual illustration of the *Match Rate* metric, using students who took Grade 3 mathematics in 2019 (*red circle* in Figure 1) and Grade 5 mathematics in 2021 (*grey circle* in Figure 1) as an example. The figure includes three categories of students:

- *2021 comparable students* (*blue people* in Figure 1): students who took Grades 3 mathematics in 2019 AND Grade 5 mathematics in 2021. These are what Ho refers to as students with "comparable test scores".
- *2021 missing students* (*red people* in Figure 1): students who took Grade 3 mathematics in 2019 but did NOT take Grade 5 mathematics in 2021. In other words, these students are missing from the population of test takes in 2021.
- *2021 new students* (*green people* in Figure 1): students who did not take Grade 3 mathematics in 2019 but took the Grade 5 mathematics in 2021. Per Ho (2021), new students could be from "in-migration into the state testing system or missed past testing."

Figure 1: Visual Illustration of Ho's Match Rate metric



The *Match Rate* metric is defined as the percentage of 2021 comparable students (*blue people* in Figure 1) over all students who took the previous test in 2019 (*blue people* + *red people* in Figure 1). It provides a gauge of student attrition, or the proportion of students retained, across the two years between test administrations due to the suspension of testing in 2020 because of

pandemic disruptions. If we assume the match rate for the previous two-year gap (i.e., 2017 to 2019) represents 'typical' attrition for each assessment, then the 2019 match rate can serve as a baseline for the 2021 match rate. The difference between 2019 and 2021 match rates is therefore a measure of the 'pandemic effect' on student participation.

The categories of students in Figure 1 can also illustrate Ho's *Fair Trend* and *Equity Check* metrics and how they are used to estimate a '*pandemic effect*' and a '*missing student effect'* for each assessment in 2021.

Fair Trend

To compute the *Fair Trend* metric, we first identify students in the previous (2017 to 2019) cohort who are similar in academic performance on the previous test (e.g., Grade 3 mathematics) to the 2021 comparable students (*blue people* in Figure 1). We refer to this identified group of students as the '2019 academic peers.' Because we have controlled for the prior academic performance of the 2021 comparable students and 2019 academic peers, any differences between performance on the current test (e.g., Grade 5 mathematics) can be attributed to the pandemic related disruption. In other words, the difference between academic performance of the 2021 comparable students ('Comp') and the 2019 academic peers ('Peers') scores can be interpreted as a *pandemic effect*. Using the average scale score (*SS*) as an example, the pandemic effect is quantified as:

$$Pandemic\ Effect = SS_{Comp} - SS_{Peers}$$

Using Ho's terminology, we will refer to the performance of academic peers (e.g., SS_{Peers}) as '*fair trend adjusted*.'

Equity Check

To compute the *Equity Check* metric, we identify students in the previous cohort who are similar in academic performance on the previous test to the 2021 missing students (*red people*). We refer to this group of students as the 'missing-matched' students in 2019. The academic performance of the missing-matched students gives an estimate of how the 2021 missing students likely would have performed on the current test *if* they had tested *and* there were no pandemic disruptions. Using Ho's terminology, we refer to this estimate as '*equity check adjusted'* and denote the equity check adjusted average scale score as SS_{Miss}. This metric can be used along with the Fair Trend Adjusted average scale score (SS_{Peers}) to estimate the impact of missing students on 2021 academic performance, or a *missing student effect*, as follows:

$$Missing\ Student\ Effect = (1 - \text{Match Rate}) \times (SS_{Peers} - SS_{Missing})$$

Technical details about the fair trend adjusted, equity check adjusted, pandemic effect, and missing student effect metrics are provided in Appendix A.

Summary of Analysis Approaches

To address the specific research questions, we implemented the following approaches (see bulleted lists below each research question) in our analyses for the studies. The Utah TAC reviewed and affirmed the analysis approaches during its October 2021 meeting.

1. *(Participation)* Which students participated in assessments and other measures during the 2020-2021 school year as a proportion of the underlying school population?
   - Participation rates (% of enrolled students who took the assessment) were summarized for RISE and Utah Aspire Plus.
   - *Match rates* were computed for tests given at grades 5 and up[2] for RISE and Utah Aspire Plus to help contextualize the participate rates by comparing the 2021 match rates with historical baselines.

2. (*Performance*) What was the performance of students who participated in assessments during the 2020-2021 school year?
   - The average scale score and percent proficient were computed for all RISE and Utah Aspire Plus assessments administered in spring 2021.

3. (*Trends*) To the extent that matched samples can be constructed, what do the results of a "fair comparison" illustrate in terms of comparative performance between the 2020-2021 and 2018-2019 school years?
   - *Fair trend adjusted* average scale scores were computed to estimate *pandemic effects* for all 2021 RISE and Utah Aspire Plus assessments at grades 5 and up.
   - *Equity check adjusted* average scale scores were computed to estimate *missing student effects* for all spring 2021 RISE and Utah Aspire Plus assessments at grades 5 and up.

4. (*Leaning Model)* Based on the analyses described above, what is the relationship of learning model (remote, hybrid, in person) to student achievement?
   - Descriptive statistics for each learning model were computed as well as the average scale score and proficiency rate for each primary learning model.

5. (*Opportunity to Learn)* What were the results of the various opportunity-to-learn (OTL) measures during the 2020-2021 school year?
   - Descriptive statistics for the various OTL measures were computed.

[2] Match rates cannot be computed for RISE assessments in grades 3 and 4 because there are no previous RISE assessments from two years prior (i.e., *red circle* in Figure 1) on which to base the match rate calculations. For the same reason, the Fair Trend and Equity Check metrics also cannot be computed for grades 3 and 4.

6. *(OTL and Performance)* How does the performance observed from the analyses described above relate to OTL measures?
    - The average scale score and proficiency rate were disaggregated by each OTL indicator.

Where feasible, the analysis conducted for each specific research question was disaggregated by the following variables:

- Grade level and content area,
- Student demographics (race/ethnicity, socioeconomic status, special education status, and English learner status), and
- Primary learning model (remote/in-person/hybrid).

Analysis Results

To summarize the findings from the studies, we organize the analysis results using the following set of guiding questions. The specific research question addressed by each guiding question is indicated in (parentheses).

1. How many students participated in the Utah assessments in 2020-2021? (Research Question #1)
2. Of those who participated,
    a. How did their performance compare to 2018-2019? (Research Question #2 and Research Question #3)
    b. What was their learning experience like during 2020-2021? (Research Question #4, Research Question #5, and Research Question #6)
3. Of those who did *not* participate,
    a. Who were the missing students from 2018-2019? (Research Question #3)
    b. How would they have likely performed if they took the test? (Research Question #3)

1. How many participated in the Utah Assessments?

Participation Rates

Table 1 compares the overall participation rates of Utah assessments in 2018-2019, the most recent test administration before the pandemic disruptions, and 2020-2021. We also calculated and compared the participation rates of each assessment for disaggregated student groups. Appendix B provides the complete set of participation rates.

Table 1: Overall Participation Rates for Utah Assessments

Utah Assessment	2018-2019	2020-2021
RISE (ELA/Math)	96% / 95%	91% / 91%

Utah Assessment	2018-2019	2020-2021
Utah Aspire Plus (ELA/Math)	94% / 94%	84% / 84%

Notable trends in the participation rates include:

- The participation rates tend to be higher at grades 3 to 8 than in high school.
- The 2020-2021 participation rates are notably lower than those in 2018-2019. This is observed overall and for the Native American, African American, Hispanic/Latino, students from low-income families, students with disabilities, and English learner groups.

Match Rates

Tables 2 and 3 compares the 2021 match rates with the 2019 match rates on the RISE and Utah Aspire Plus assessments respectively. Recall that the match rates help contextualize the participation rates by providing a gauge of student attrition, or the proportion of students retained, between two years of test administrations. The match rates for 2019 are not impacted by pandemic related disruptions and represent 'typical' attrition for each assessment, serving as a baseline for the 2021 pandemic-impacted match rates. The difference between 2019 and 2021 match rates can therefore be considered a measure of the 'pandemic effect' on student test attrition.

Table 2: RISE Overall Match Rates

Current Test	Previous Test *(Two Years Prior)*	Match Rate 2021	Match Rate 2019	Match Rate Difference
Grade 5 ELA	Grade 3 ELA	88.3%	92.0%	-3.6%
Grade 6 ELA	Grade 4 ELA	88.1%	91.4%	-3.3%
Grade 7 ELA	Grade 5 ELA	85.0%	90.3%	-5.3%
Grade 8 ELA	Grade 6 ELA	83.4%	89.1%	-5.7%
Grade 5 Mathematics	Grade 3 Mathematics	87.8%	91.6%	-3.9%
Grade 6 Mathematics	Grade 4 Mathematics	87.2%	90.6%	-3.4%
Grade 7 Mathematics	Grade 5 Mathematics	81.0%	84.8%	-3.8%
Grade 8 Mathematics	Grade 6 Mathematics	77.0%	82.4%	-5.5%
Grade 6 Science	Grade 4 Science	87.9%	91.2%	-3.3%
Grade 7 Science	Grade 5 Science	85.0%	89.8%	-4.9%
Grade 8 Science	Grade 6 Science	83.8%	88.8%	-5.0%

Table 3: Utah Aspire Plus Overall Match Rates

Current Test	Previous Test *(Two Years Prior)*	Match Rate 2021	Match Rate 2019	Match Rate Difference
Grade 9 ELA	Grade 7 ELA	71.5%	83.0%	-11.5%
Grade 10 ELA	Grade 8 ELA	68.2%	79.5%	-11.4%
Grade 9 Mathematics	Grade 7 Mathematics	70.5%	82.6%	-12.1%
Grade 10 Mathematics	Grade 8 Mathematics	64.3%	76.9%	-12.6%

We also calculated and compared the match rates of each assessment for disaggregated student groups. Appendix C gives the complete set of match rate comparisons.

In general, the match rate trends for 2019 vs. 2021 are similar to those of participation rates for RISE and Utah Aspire Plus. The 2021 match rates are generally lower than the 2019 match rates, implying that the pandemic related disruptions lead to higher student attrition across all tests and all student groups. Notable trends include:

- The match rates are lower at high school (for Utah Aspire Plus) than in grades 5 to 8 (for RISE). The magnitudes of the match rate differences are also larger at high school. For students who took RISE, the match rates tend to decrease from grade 3 to grade 8, and the magnitudes of the differences tend to increase. Taken together, this implies that there is higher attrition between 2019 and 2021 (pandemic disrupted) than between 2017 and 2019 (no pandemic disruptions). And the magnitude of attrition is larger for older students.
- Compared to all students who took the test, the magnitudes of the match rate differences are notably larger for Native American, students from low-income families, students with disabilities, and English learner groups, indicating a larger (negative) effect of the pandemic on attrition for these groups of students.
- Compared to all students who took the test, the magnitudes of the match rate differences are also larger on some tests for Pacific Islanders and multiracial students.

2a. How did participating students in 2020-2021 perform compared to 2018-2019?

2021 Observed Academic Performance

Tables 4 and 5 show the descriptive statistics, including number of testers, scale score average and standard deviation, and proficiency rate, for all spring 2021 RISE and Utah Aspire Plus assessments, respectively. The proficiency rate is defined as the percentage of testers who attained a performance level of *Proficient* or *Highly Proficient* on the assessment. We also calculated the same statistics for disaggregated student groups. Appendix D provides the complete set of 2021 observed academic performance results.

Table 4: Spring 2021 Observed Academic Performance – RISE

RISE Assessment	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Grade 3 ELA	44,945	315	78	43%
Grade 4 ELA	46,092	347	84	38%
Grade 5 ELA	46,527	387	86	44%
Grade 6 ELA	47,189	415	87	44%
Grade 7 ELA	46,695	426	84	41%
Grade 8 ELA	45,871	446	92	43%
Grade 3 Mathematics	44,839	309	38	45%
Grade 4 Mathematics	45,904	339	46	45%

RISE Assessment	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Grade 5 Mathematics	46,200	368	53	42%
Grade 6 Mathematics	46,734	400	60	32%
Grade 7 Mathematics	44,572	429	64	41%
Grade 8 Mathematics	44,124	466	75	36%
Secondary Mathematics I	3,319	586	51	87%
Grade 6 Science	47,110	849	14	53%
Grade 7 Science	46,697	849	13	44%
Grade 8 Science	46,071	850	13	49%

Table 5: Spring 2021 Observed Academic Performance – Utah Aspire Plus

Utah Aspire Plus Assessment	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Grade 9 ELA	37,530	199	25	47%
Grade 10 ELA	34,562	201	24	51%
Grade 9 Mathematics	37,163	195	30	38%
Grade 10 Mathematics	34,393	194	32	31%

The observed academic performance in Tables 4 and 5 show the actual performance of students who participated in the spring 2021 assessments. To identify performance trends, we usually compare these results with the previously observed academic performance, such as that from spring 2019. Between most years, the group of students participating in the assessments are relatively similar. However, the participation and match rate analyses in the previous section show notable declines in participation and increases in student attrition in 2021, especially among several traditionally lower performing students, such as Native American students, students from low-income families, students with disabilities, and English learners. Thus, directly comparing the observed 2021 academic performance to those in 2019 confuses *changes in the testing population* with *changes in academic achievement*. In short, it would not be an "apples-to-apples" or fair comparison. Also, given what we know about the groups of students whose participation are disproportionally lower in 2021, making such direct comparisons could unintentionally obfuscate the academic impact of pandemic related disruptions.

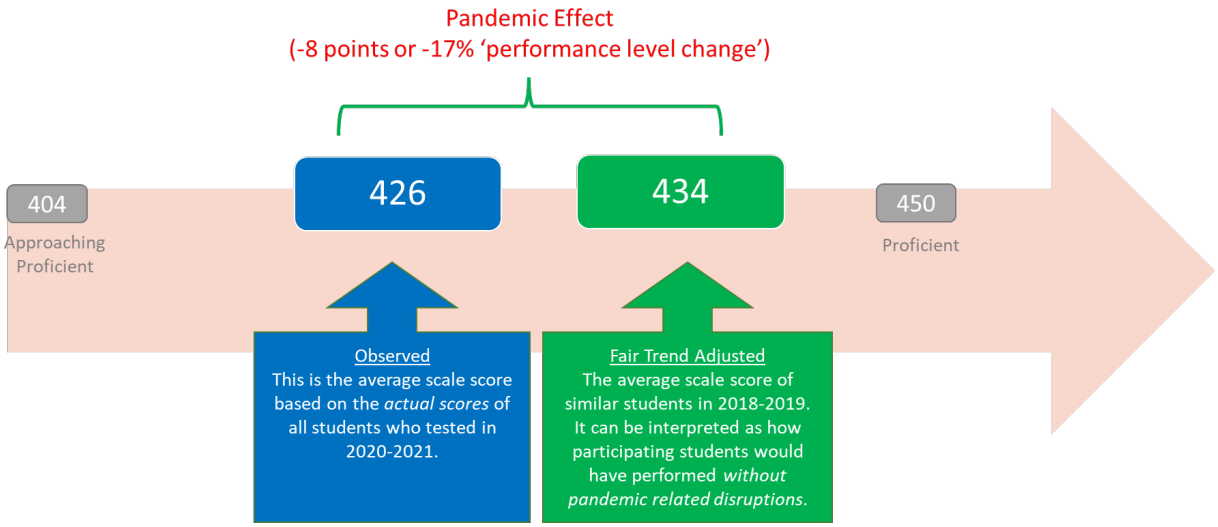
Fair Trend and Pandemic Effect

To do a fair comparison of the academic performance in 2021 with 2019, we estimated the *fair trend adjusted* metric for each RISE and Utah Aspire assessment, based on how similar students performed on the same test in 2019. Recall that because students who tested in 2019 did not experience pandemic related disruption, the difference between the observed and fair trend adjusted scores can be interpreted as a *pandemic effect*. That is, the fair trend adjusted score is a 'best guess' of how participating students would have performed, if they had not experienced pandemic related disruptions.

Figure 2 visually illustrates, using results from RISE Grade 7 ELA, the relationship between the observed (2021) and fair trend adjusted (2019) average scale scores. Please note that the fair trend adjusted metric is computed for average scale scores but not proficiency rates. Ho (2021) does not recommend "comparing trends in proficiency rates across groups or schools whose base rates differ." (p.5) The Utah TAC affirmed this caution and recommended only applying the fair trend adjustment to average scale scores.

Trends based on scale scores, however, are subject to misinterpretation. First, scores from different assessments are generally not on the same scale[3]. This means that a difference of 10 scale score points on, for example, the Grade 5 ELA assessment, does not mean the same as a 10-point difference on the Grade 5 mathematics assessment. Also, without additional context, it is difficult for score users to interpret scale score differences. For example, what does an average scale score decline of 8 points from 2019 to 2021 mean? To help with interpretation, we contextualize the *pandemic effect* in terms of what is expected for a student to advance from one performance level to next level or an *expected performance level change*[4]. For example, in RISE Grade 7 ELA, the expected performance level change is 46 scale score points[5]. The pandemic effect of -8 scale score points therefore represents a decline of about 17% of the expected performance level change for this assessment.

Figure 2: Comparing the Observed (2021) and Fair Trend Adjusted (2019) Scores



[3] One exception to this statement is the RISE ELA and mathematics assessments. Within each content area, there is a vertical scale, which allows for scale score comparisons across grade levels. However, the scale scores should *not* be compared between content area (i.e., ELA vs. mathematics).
[4] As suggested by the Utah TAC, the *expected performance level change* is quantified as the difference between the *Approaching Proficient* and *Proficient* cut scores on each RISE or Utah Aspire assessment.
[5] For RISE Grade 7 ELA, the *Approaching Proficient* cut score is 404 and the *Proficient* cut score is 450.

Tables 6 and 7 summarize the observed (2021) and fair trend adjusted (2019) average scale scores for the RISE and Utah Aspire Plus assessments respectively. The tables also show the estimated pandemic effects and what they represented in terms of the expected performance level change for each assessment. The same analysis was conducted for all disaggregated student groups and is summarized in Appendix E.

Table 6: RISE Average Scale Score Comparisons (2021 vs. 2019)

Assessment	2019 Fair Trend Adj. Avg. Scale Score	2021 Observed Avg. Scale Score	Pandemic Effect	% Expected Performance Level Change
Grade 5 ELA	400	387	-13	-27%
Grade 6 ELA	437	415	-22	-55%
Grade 7 ELA	434	426	-8	-17%
Grade 8 ELA	457	446	-11	-20%
Grade 5 Mathematics	377	368	-9	-38%
Grade 6 Mathematics	411	400	-11	-31%
Grade 7 Mathematics	441	429	-12	-34%
Grade 8 Mathematics	480	466	-14	-27%
Grade 6 Science	852	849	-3	-38%
Grade 7 Science	850	849	-1	-10%
Grade 8 Science	852	850	-2	-22%

Table 7: Utah Aspire Plus Average Scale Score Comparisons (2021 vs. 2019)

Assessment	2019 Fair Trend Adj. Avg. Scale Score	2021 Observed Avg. Scale Score	Pandemic Effect	% Expected Performance Level Change
Grade 9 ELA	201	199	-2	-5%
Grade 10 ELA	204	201	-3	-9%
Grade 9 Mathematics	202	195	-7	-24%
Grade 10 Mathematics	201	194	-7	-27%

The results in these tables illustrate why it is important to contextualize the average scale score difference into a metric such as *expected performance level change* when interpreting the analysis results[6]. In Table 6, for example, both Grade 8 ELA and Grade 6 mathematics have pandemic effect of -11 scale score points. However, the expected performance level changes for the tests are 55 and 35 scale score points respectively. This yields very different % expected performance level change for the two tests: -20% for Grade 8 ELA and -31% for Grade 6

[6] Please note that the Utah TAC suggested the *expected performance level change* to aid in the interpretation of study results by a general audience. It is more common in technical research reports to provide an *effect size*, which quantifies score differences in standard deviation units, to facilitate comparisons between assessments within and across programs. For this reason, the Utah TAC recommended including effect sizes in the full report. The effect sizes for the 2021 vs. 2019 average scale score comparisons (i.e., pandemic effects) are provided in Appendix E.

mathematics. This implies that the effect of the pandemic on Grade 6 mathematics is over 50% more than that for Grade 8 ELA.

Notable trends in the 2021 vs. 2019 academic performance comparisons include:

- Across RISE and Utah Aspire Plus, the observed 2021 average scale scores are lower than the fair trend adjusted 2019 average scale scores in 2019 for all grades and content areas, with the decline slightly larger in mathematics than in ELA.
    - This implies that pandemic related disruptions likely led to a general decline in student achievement across grade levels and content areas.
- The decline is observed overall and for various disaggregated student groups. The larger declines in achievement are observed for traditionally lower-performing groups, including African American, Native American, Hispanic/Latino, Pacific Islander, students from low-income families, students with disabilities and English learners.
    - This implies that achievement gaps that existed before the pandemic are likely exacerbated because of pandemic related disruptions.

2b. What was the learning experience of participating students?

Learning Model

Table 8 summarizes the primary learning model of Utah schools during the 2020-2021 academic year. The data are based on responses provided by LEAs and schools in June 2021 to the *COVID schedule impact questionnaire*. A school's primary learning model is the model in which it spent the most school days during 2020-2021.

Table 8: Primary Learning Models in 2020-2021

Primary Learning Model	# of Schools	% of Schools
Regular In-Person	325	31%
Remote	50	5%
Hybrid	654	62%
Online School[7]	21	2%

To examine relationship between learning model and student achievement, we computed the observed 2021 proficiency rates for each learning model. The results are summarized in Table 9. Note that the proficiency rates for each learning model are aggregated across all grades and content area but calculated separately for RISE and Utah Aspire Plus.

Table 9: 2021 Observed Proficiency Rates by Learning Models

Primary Learning Model	RISE # of Students	RISE % Proficient	Utah Aspire Plus # of Students	Utah Aspire Plus % Proficient
Regular In-Person	175,736	44%	35,066	42%

[7] An "online school" is a school for which students attended remotely even before the pandemic. "Remote" is a school that was in-person before the pandemic but was primarily remote learning during 2020-2021.

Remote	22,336	36%	3,833	45%
Hybrid	478,377	44%	102,327	42%
Online School	12,414	32%	1,651	38%

Notable trends in Tables 4 and 5 include:

- Most schools were in-person or hybrid during 2020-2021.
    - Note that "hybrid" encompasses a wide range of schools, from those that had a few students learning remotely all year long to those that had substantial numbers of students learning remotely for parts of the year during quarantines.
- For RISE, the highest proficiency rates are observed for the in-person (44% proficient) and hybrid (44% proficient) learning models.
- For Utah Aspire Plus, the highest proficiency rate is observed with the remote learning model (45% proficient).

Please note that no causational inference should be drawn from these trends because the learning model was not randomly assigned to schools but were, in most cases, local decisions. For example, we should *not* conclude that in-person and hybrid learning are more effective for students in grades 3-8 because higher RISE proficiency rates are observed for schools in these learning models. Nor is it appropriate to conclude that the remote learning model is more effective for high school because of the higher Utah Aspire Plus proficiency rates for that model. This same caution applies to the trends based on the OTL analyses to follow.

Opportunity to Learn (OTL)

An OTL survey was administered to students at the end of their spring 2021 RISE and Utah Aspire Plus test sessions. Figure 3 shows the questions in the OTL survey.

Figure 3: Questions on the 2020-2021 OTL Survey

Attendance and Quarantine

- Most of this school year I have attended school.
- How many times were you quarantined and required to stay home from school?

Quality of Learning

- I am satisfied with my learning this year.
- Learning at school was harder this year due to safety guidelines like physical distancing or wearing masks.
- Compared to a school year not affected by COVID-19 how much do you feel you learned this year?

Remote Learning

- I watched recorded lessons.
- I joined live lessons with my teacher(s).
- I used learning software or online programs such as Canvas Google Classroom etc..
- I had access to individual help from my teacher(s) if I needed help with learning.
- An adult in my household was available if I needed help with learning.

Internet Connectivity

- I had good internet access.
- I had access to a computer or tablet that connected to the internet.
- I shared a computer or tablet that connected to the internet with at least one other person in my home.

Summaries of the response to the OTL survey are available at USBE's *Opportunity to Learn Dashboard*. To examine relationship between the OTL indicators and student achievement, we computed the observed 2021 proficiency rates based on the students' responses to each question on the OTL survey. Appendix F provides the complete set of results, linking OTL indicators with student achievement. Here, we summarize the trends from the analysis results.

Attendance and Quarantine

- Most students attended school in-person for most of the school year,
- About half the students who responded to the survey experience quarantine protocols at least once during the school year,
- More frequent in-person learning was associated with higher student achievement on RISE and Utah Aspire Plus,
- Fewer quarantine frequency was also associated with higher student achievement on RISE and Utah Aspire Plus.

Quality of Learning

- More students were:
    - Satisfied with their learning this year,
    - Agreed that learning was harder due to safety guidelines like physical distancing and wearing masks,
    - Felt they learned about the same or more compared to a non-COVID impacted year, especially in grades 3-8.
- High achievement was associated with students who:
    - Were more satisfied with their learning (especially in grades 3-8),
    - Did *not* find learning harder due to safety guidelines,
    - Felt that learning this year was about the same or slightly less than a non-COVID impacted year.

Remote Learning

- Of those who participated in remote learning, more students
    - Watched recorded lessons at least occasionally,
    - Frequently used learning software or online programs (such as Canvas Google Classroom, etc.),
    - Had access to teachers to support their learning,
    - Had learning support from an adult in their household.

- Higher achievement was associated with student who:
    - Watched fewer recorded lessons in grades 3 to 8,
    - Used learning software or online programs more frequently,
    - Had ready access to teacher to support their learning,
    - Had ready access to learning support from an adult in their household.

Internet Connectivity

- Of those who participated in remote learning,
    - Most students had good internet access,
    - Most students had access to an internet-connected device,
    - Most students did not share an internet-connected device at home.
- Higher achievement was associated with students who:
    - Had ready access to good internet,
    - Had ready access to an internet-connected device,
    - Did not share an internet-connected device at home.

3a. Who were the missing students from 2018-2019?

To better understand the students who previously tested in 2019 but did not test in 2021, we compared the counts, composition, and academic achievement of this group of 'missing' students with those who tested in both 2019 and 2021, whom we refer to as 'participating students.'

Figure 4: Comparison of Missing vs. Participating Students on RISE in 2021

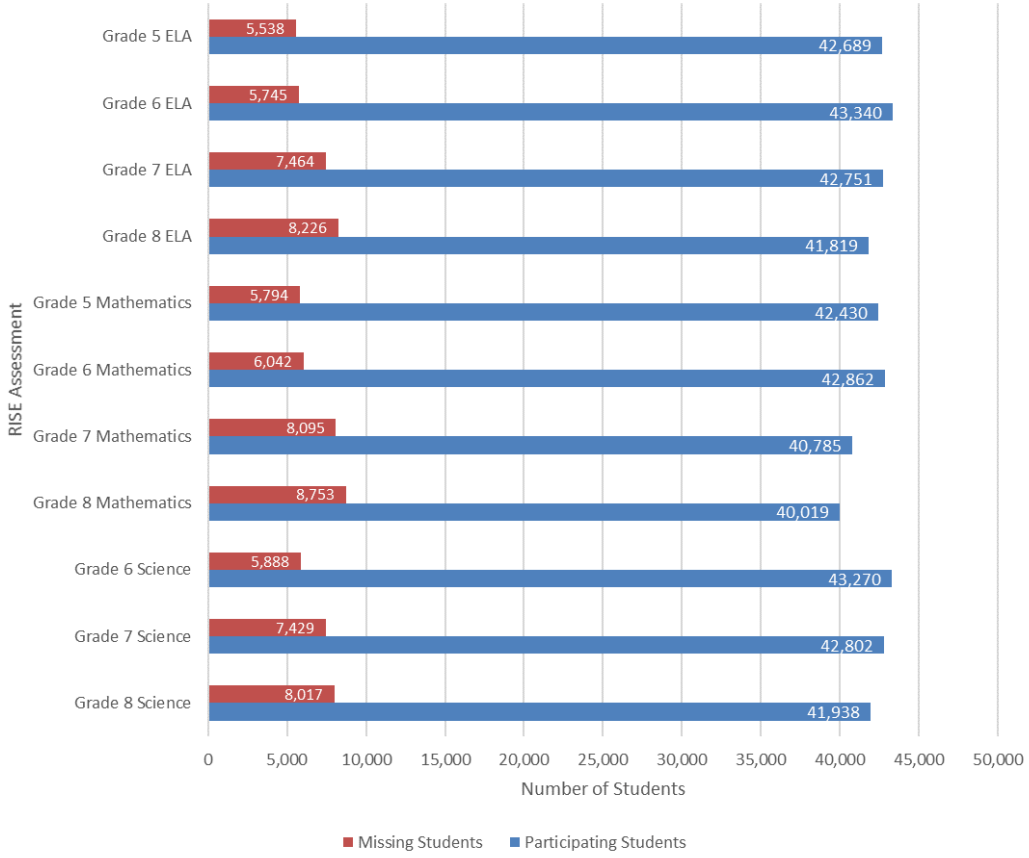
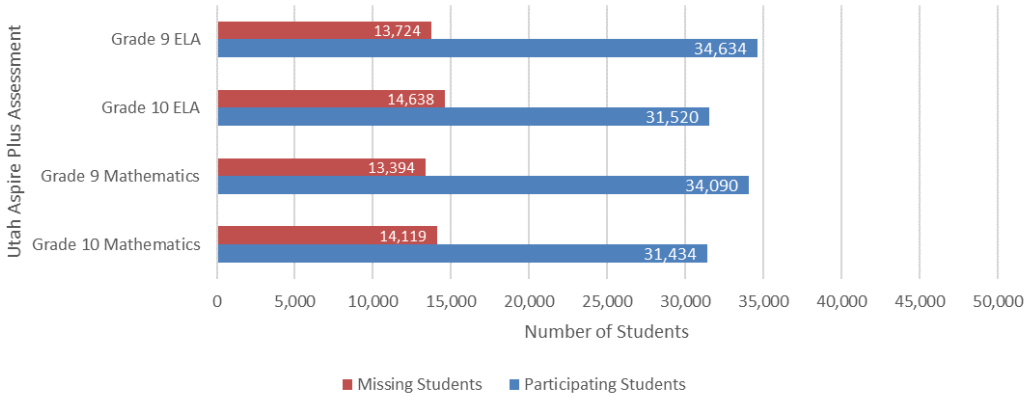


Figure 5: Comparison of Missing vs. Participating Students on Utah Aspire Plus in 2021



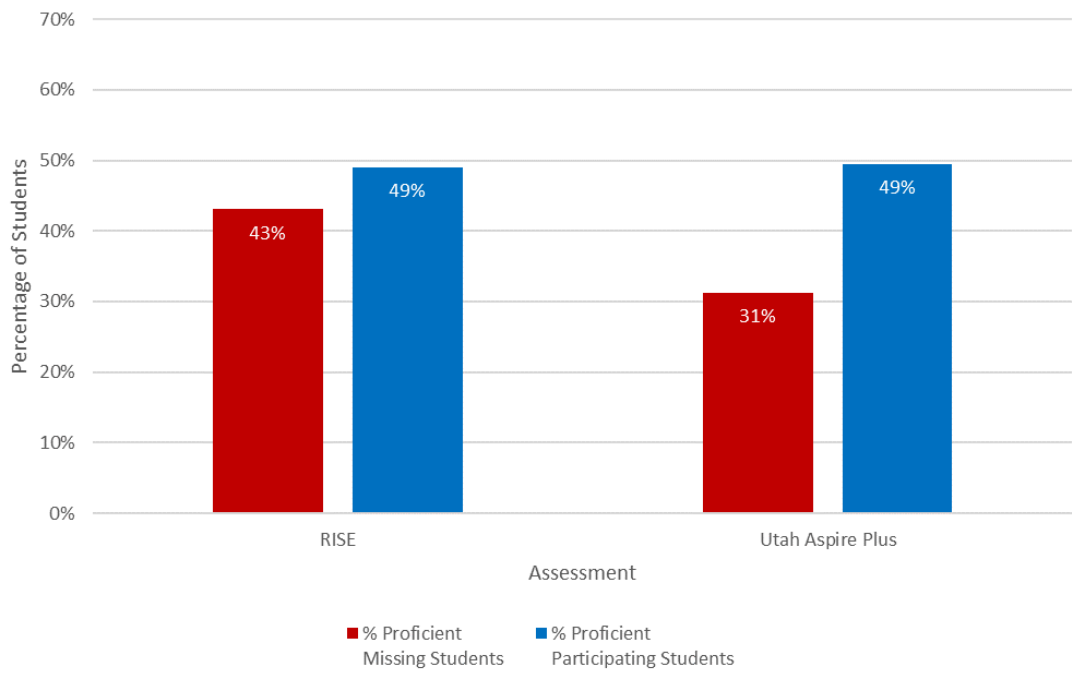
Figures 4 and 5 compare the number of missing students and participating students for RISE and Utah Aspire Plus respectively. Consistent with the general findings about 2021 participation rates (see Table 1), there were comparatively more missing students in high school (Utah Aspire Plus) than in grades 3-8 (RISE).

Figures G.1 to G.4 in the Appendix G compare the demographic compositions of the missing students (upper pie charts) with those of the participating students (lower pie charts) on RISE. These comparisons show that the missing students on RISE included a relatively higher percentage of Native American students (compare the *green boxes* in Figure G.1.)

Figures G.5 to G.8 in the Appendix G compare the demographic compositions of the missing students (upper pie charts) with those of the participating (lower pie charts) on Utah Aspire Plus. For Utah Aspire Plus, the missing students included a notably lower percentage of White students and higher percentages of Hispanic/Latino, Native American, African American, and Pacific Islander students (compare the charts in Figure G.5.) There were also higher percentages of missing students from low-income families, special education students and English learners (compare the charts in Figures G.6, G.7 and G.8.)

Figure 6 compares the proficiency rates of the missing students (red bars in Figure 6) and the participating students (blue bars in Figure 6) on RISE and Utah Aspire Plus in 2019, when both groups of students last took the same test. The comparisons show that the missing students had lower proficiency rates than participating students, especially for Utah Aspire Plus.

Figure 6: 2019 Proficiency Rates of Missing vs. Participating Students



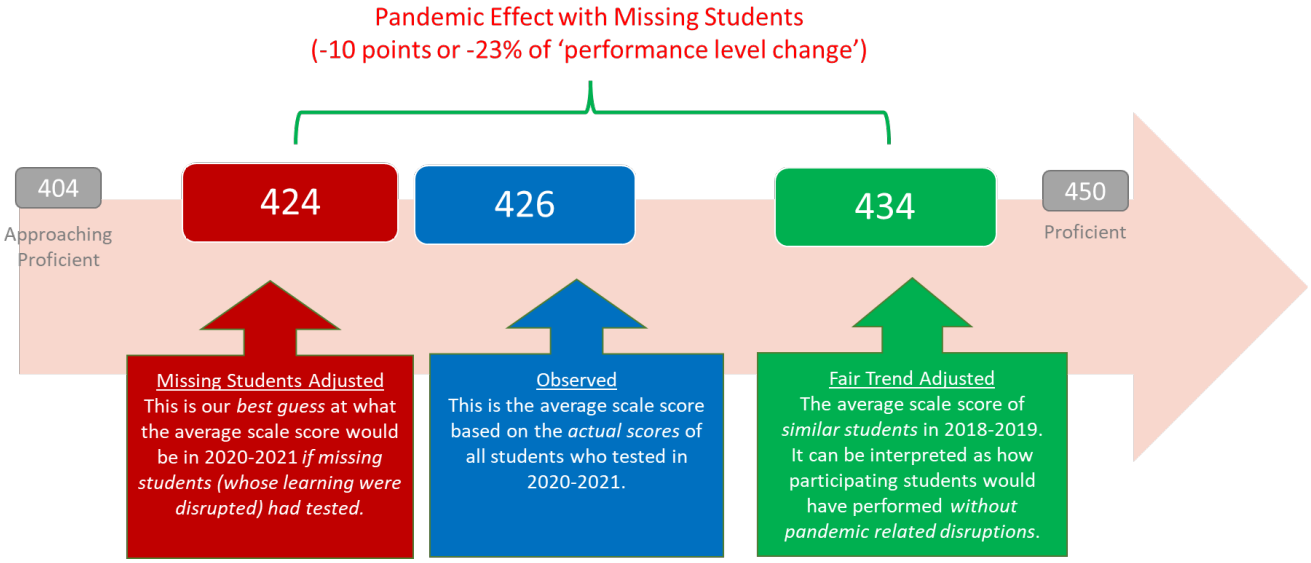
Taken together, our analysis showed that the students who did not test in 2021 tended to be from traditionally lower-performing student groups and were, in general, lower performing when they last took the test in 2019 compared to students who tested in both 2019 and 2021.

3b. How would missing students have performed if they took the test?

Based on what we learned about the missing students, it is reasonable to assume that if the missing students had tested in 2021, we would see even lower median scale scores. As described in the Methodology section (and elaborated on in Appendix A), we computed *equity check adjusted* scores for the missing students on the 2021 RISE and Utah Aspire Plus assessments. The *equity check adjusted* average scale scores were used with the fair trend adjusted average scale score to estimate the impact of missing students on 2021 academic performance, or a *missing student effect*.

Figure 7 extends the visual illustration in Figure 2 by including an estimate of what the average scale score for RISE Grade 7 ELA in 2021 would have been *if missing students had tested*. The difference between the *fair trend adjusted* score (green box in Figure 7) and the *missing students adjusted* score (red box in Figure 7) represents an estimation of the pandemic effect *with missing students included*. To help contextualize the effect, we also present the pandemic effects in terms of expected performance level change.

Figure 7: Comparing the "Missing Students" and "Fair Trend" Adjusted Scores



Tables 10 and 11 summarize the *missing students adjusted* and *fair trend adjusted* average scale scores for RISE and Utah Aspire Plus respectively along with the estimated pandemic effects and what they represented in terms of expected performance level change for each assessment.

Table 10: RISE Average Scale Score Comparisons with Missing Students

RISE	2020-2021 *Missing Students Adjusted* Avg. Scale Score	2018-2019 *Fair Trend Adjusted* Avg. Scale Score	Pandemic Effect with Missing Students	% Performance Level Change
Grade 5 ELA	386	399	-13	-27%
Grade 6 ELA	413	436	-23	-57%
Grade 7 ELA	424	434	-10	-23%
Grade 8 ELA	442	456	-14	-26%
Grade 5 Mathematics	367	378	-11	-45%
Grade 6 Mathematics	398	411	-13	-37%
Grade 7 Mathematics	426	440	-14	-41%
Grade 8 Mathematics	461	480	-19	-37%
Grade 6 Science	849	852	-3	-37%
Grade 7 Science	848	850	-1	-15%
Grade 8 Science	850	852	-2	-24%

Table 11: Utah Aspire Plus Average Scale Score Comparisons with Missing Students

Utah Aspire Plus	2020-2021 *Missing Students Adjusted* Avg. Scale Score	2018-2019 *Fair Trend Adjusted* Avg. Scale Score	Pandemic Effect with Missing Students	% Performance Level Change
Grade 9 ELA	196	201	-5	-14%
Grade 10 ELA	199	204	-5	-14%
Grade 9 Mathematics	191	202	-11	-37%
Grade 10 Mathematics	189	201	-12	-46%

As Dr. Ho noted about his Equity Check metric, the *missing students adjusted* score is a 'best-case' scenario[8]. It is therefore reasonable to assume that the estimated pandemic effects are underestimations of the 'true' pandemic effects on testers.

Limitations

There are a few notable limitations about the analysis and comparisons in the studies. While the metrics proposed by Ho are helpful to illustrate the effect of pandemic disruptions on participation and achievement, they are based on broad assumptions that likely oversimplify the pandemic experience in different contexts and for different groups of students. For example, the *Fair Trend* metric assumes that the observed pre-pandemic empirical relationship between academic performance across two years (i.e., 2017 to 2019) is 'typical' and uses it as the baseline for comparing the pandemic disrupted achievement. This may be a reasonable assumption across

[8] The equity check adjusted score is a 'best-case' scenario in that it assumes that the effect of pandemic disruption on missing students is *similar* to that of the participating students. While it is impossible to estimate empirically, it is reasonable to assume that pandemic disruptions may have affected the achievement of missing students more than participating students.

all participating students, but this 'typical' relationship may not apply to the various student groups or for specific LEAs or schools. This assumption also does not account for the possibility of academic progress that would have occurred since 2019 if there were no pandemic disruptions. The *Equity Check* metric further assumes that the observed pre-pandemic empirical relationship applies to missing students. The *Missing Students Adjusted* scale scores assumes that the effect of the pandemic on academic performance is the same for participating students and missing students. There is evidence from our analysis that the missing students are characteristically different from the participating students. As such, our analysis likely underestimates the degree to which missing students were affected by pandemic disruptions. The data used for the learning model and OTL analysis were self-reported by LEAs, schools, or students. Several LEAs also opted out of the OTL survey. Thus, the survey sample is likely not be representative of the testing population in the state. We should therefore not over-interpret the specific results in the studies but instead consider the overarching trends across grade levels and content areas.

Conclusion

In summary, fewer students participated in the 2021 compared to the 2019 assessments and this drop was substantial for historically underperforming groups of students. Further, student performance was notably lower in 2021 compared to 2019. This was true across all grades, subject areas, and student groups, with the declines slightly larger in mathematics compared to ELA. Importantly, the pandemic effects documented here is likely an underestimate of the true pandemic effects because it is based only on students who participated in 2021. These findings speak to the necessity of helping all students in Utah with learning recovery going forward. It also highlights the urgency of identifying the missing students and providing targeted support to these and other traditionally lower-performing student groups to prevent them from falling into an academic spiral.

The observed academic impacts of school disruptions from the COVID-19 pandemic on student learning are substantial. Despite heroic efforts by teachers and leaders during the past two school years, the results of our analyses point to unprecedented impacts on both student participation and academic achievement on the Utah assessments. For example, we are observing in some cases over two times the declines in student achievement in Utah compared to the effects attributed to Hurricane Katrina on students from New Orleans[9].

Importantly, we have been reporting state average scores, but the patterns varied considerably across student groups. In fact, the achievement results are noticeably lower for students from

[9] Sacerdote (2012) reported an effect-size impact on student achievement of -0.16 while Payne, McCaffrey, Kalra, and Zhou (2008) reported an effect size of -0.06. Depending upon grade and content area, the effect-size estimates found for RISE and Utah Aspire Plus in our studies ranged from -0.08 to -0.26. The effect-size estimates for RISE and Utah Aspire Plus are provided in the full report.

certain racial and ethnic groups as well as English learners and students with disabilities. In other words, the students that could least afford to lose ground tended to experience more severe impacts than the general student population.

We recognize, however, that these findings must be interpreted along with other information, both local assessment and OTL indicators, to best determine the actions necessary to address these learning disruptions. State assessment results in 2022 will be an important source of confirmatory information, but in the near-term, educators and school leaders must rely on assessment information closest to the teaching and learning process to guide acceleration efforts.

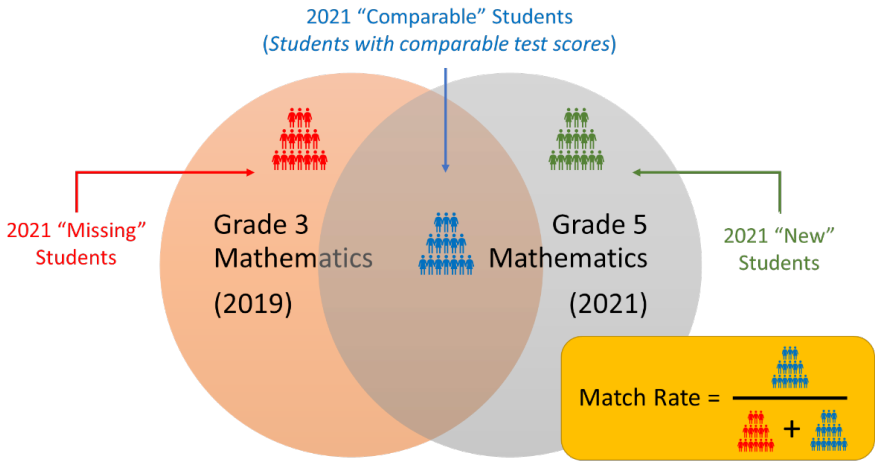
Reference

Ho, Andrew (2021). *Three test-score metrics that all states should report in the COVID-19-affected spring of 2021*. Memorandum presented to the Council of Chief School Officers' (CCSSO) Technical Issues in Large Scale Assessment (TILSA) collaborative, February 2021. Retrieved from https://scholar.harvard.edu/files/andrewho/files/threemetrics.pdf

Appendix A – Technical Details for *Fair Trend* and *Equity Check* Metrics

This appendix provides technical details about the *fair trend adjusted*, *equity check adjusted*, *pandemic effect* and *missing student effect* metrics described in the Methodology section of the report and used in the analyses for studies.

Figure A.1: Groups of Testers in 2021



2021 Observed (Grey circle in Figure A.1)

N-Count (N_{Obs})	Average Scale Score (SS_{Obs})
46,695	426.5

- Definition: The academic outcomes are based on **observed scores** of all students who tested in 2021, including *2021 comparable students* (blue people in Figure A.1) and *2021 new students* (green people in Figure A.1.)
- 'Effects' on this metric: The aggregated academic outcomes ARE affected by disrupted learning and do NOT include missing students in 2021 (red people in Figure A.1.)

2021 Comparable (Blue people in Figure A.1)

N-Count (N_{Comp})	Average Scale Score (SS_{Comp})
42,689	427.9

- Definition: The academic outcomes are based on **observed scores** of students who tested in 2021 and 2019 (two grade levels earlier), that is, the 2021 comparable students (blue people in Figure A.1.)
- Effects on this metric: The aggregated academic outcomes ARE affected by disrupted learning and do NOT including missing students in 2021 (red people in Figure A.1.)

2019 Fair Trend Adjusted (Blue people in Figure A.1)

N-Count (N_{Peers})	Average Scale Score (SS_{Peers})
42,689	435.9

- Definition: The academic outcomes are based on **estimated scores** of 2019 academic peers, identified by matching the 2021 comparable students (blue people in Figure A.1) to students in the cohort two years prior with comparable scores (i.e., students with scores in 2017 and 2019.)
- 'Effects' on this metric: The aggregated academic outcomes are NOT affected by disrupted learning and do NOT including missing students in 2021 (red people in Figure A.1.)

2021 Equity Check Adjusted (Red people in Figure A.1)

N-Count ($N_{Missing}$)	Average Scale Score ($SS_{Missing}$)
7,464	419.0

- Definition: The academic outcomes are the **estimated scores** of students who tested in 2019 but did not test in 2021, identified by matching the missing students (red people in Figure A.1) to students in 2017 with similar scores in the same grade and content area.
- 'Effects' on this metric: The aggregated academic outcomes are NOT affected by disrupted learning but DO including missing students in 2021 (red people in Figure A.1.)

Estimating Effects

Pandemic Effect

$$\text{Delta}_{\text{pandemic}} = SS_{Peers} - SS_{Comp}$$

In the example, $\text{Delta}_{\text{pandemic}}$ = 435.9 - 427.9 = 8.0

Missing Student Effect

$$\text{Delta}_{\text{Missing}} = (1 - MatchRate) \times (SS_{Peers} - SS_{Missing})$$

Derivation

$\text{Delta}_{\text{Missing}}$ = (Avg SS *w/o* Missing Students) - (Avg SS *with* Missing Students)

$$= SS_{Peers} - \frac{SS_{Peers} \times N_{Peers} + SS_{Missing} \times N_{Missing}}{N_{Peers} + N_{Missing}}$$

$$= SS_{Peers} - SS_{Peers} \times \frac{N_{Peers}}{N_{Peers} + N_{Missing}} - SS_{Missing} \times \frac{N_{Missing}}{N_{Peers} + N_{Missing}}$$

$$= SS_{Peers} - SS_{Peers} \times (MatchRate) - SS_{Missing} \times (1 - MatchRate)$$

$$= SS_{Peers} \times (1 - MatchRate) - SS_{Missing} \times (1 - MatchRate)$$

$$= (1 - MatchRate) \times (SS_{Peers} - SS_{Missing})$$

In the example,

Match Rate = 42,689 / (42,689 + 7,464) = 0.85

$\text{Delta}_{\text{Missing}}$ = (1 – 0.85) × (435.9 – 419.0)

= 2.5

Appendix B – Participation Rates for Utah Assessments (2019 vs. 2021)

RISE ELA

Student Group	% Tested 2019	% Tested 2021	# Tested 2019	# Tested 2021
All Students	96%	91%	279,495	259,553
Grade 3	97%	92%	45,934	41,724
Grade 4	96%	92%	47,109	42,950
Grade 5	96%	92%	48,192	43,350
Grade 6	95%	91%	48,028	44,199
Grade 7	96%	90%	46,229	44,038
Grade 8	95%	88%	44,003	43,292
Female	96%	91%	135,986	126,028
Male	96%	91%	143,507	133,520
African American	96%	90%	3,576	3,425
Native American	98%	73%	2,728	1,901
Asian	98%	91%	4,556	4,328
Hispanic or Latino	98%	92%	48,813	47,195
Multiple Races	96%	90%	8,075	8,133
Pacific Islander	98%	89%	4,133	3,791
White	95%	91%	207,614	190,780
Low Income	97%	90%	98,940	80,092
Not Low Income	95%	91%	180,555	179,461
Special Education	93%	85%	36,653	35,142
Not Sp. Education	96%	92%	242,842	224,411
English Learner	99%	92%	29,535	24,935
Non-English Learner	95%	91%	249,960	234,618

RISE Mathematics

Student Group	% Tested 2019	% Tested 2021	# Tested 2019	# Tested 2021
All Students	95%	91%	279,346	262,110
Grade 3	97%	92%	45,917	41,669
Grade 4	96%	92%	46,747	42,854
Grade 5	96%	92%	48,002	43,226
Grade 6	95%	91%	47,785	44,006
Grade 7	95%	89%	44,698	43,023
Grade 8	94%	89%	46,197	47,332
Female	95%	90%	135,754	127,018
Male	95%	91%	143,592	135,087
African American	96%	89%	3,568	3,415
Native American	98%	73%	2,710	1,884
Asian	98%	91%	4,602	4,533
Hispanic or Latino	97%	91%	48,431	47,274
Multiple Races	96%	90%	8,101	8,221
Pacific Islander	98%	88%	4,124	3,779
White	95%	91%	207,810	193,004
Low Income	96%	90%	98,409	80,126
Not Low Income	95%	91%	180,937	181,984
Special Education	92%	85%	36,359	34,697
Not Sp. Education	96%	91%	242,987	227,413
English Learner	99%	92%	29,367	24,827
Non-English Learner	95%	90%	249,979	237,283

Utah Aspire Plus English

Student Group	% Tested 2019	% Tested 2021	# Tested 2019	# Tested 2021
All Students	94%	84%	75,733	77,980
Grade 9	95%	86%	38,709	40,590
Grade 10	93%	82%	37,024	37,390
Female	94%	83%	37,201	37,387
Male	95%	85%	38,529	40,589
African American	92%	78%	774	941
Native American	95%	78%	772	524
Asian	94%	84%	1,178	1,323
Hispanic or Latino	94%	81%	11,850	12,797
Multiple Races	94%	83%	1,846	2,132
Pacific Islander	94%	73%	995	1,002
White	94%	86%	58,318	59,261
Low Income	93%	80%	21,519	19,128
Not Low Income	95%	86%	54,214	58,852
Special Education	91%	80%	6,936	7,031
Not Sp. Education	94%	85%	68,797	70,949
English Learner	93%	80%	2,377	3,621
Non-English Learner	94%	85%	73,356	74,359

Utah Aspire Plus Reading

Student Group	% Tested 2019	% Tested 2021	# Tested 2019	# Tested 2021
All Students	94%	84%	75,714	77,656
Grade 9	95%	86%	38,631	40,480
Grade 10	93%	82%	37,083	37,176
Female	94%	83%	37,227	37,189
Male	95%	85%	38,485	40,463
African American	92%	77%	776	928
Native American	94%	77%	768	523
Asian	96%	84%	1,184	1,328
Hispanic or Latino	94%	80%	11,878	12,709
Multiple Races	94%	82%	1,843	2,120
Pacific Islander	95%	82%	1,006	985
White	94%	85%	58,259	59,063
Low Income	93%	79%	21,525	19,042
Not Low Income	95%	86%	54,189	58,614
Special Education	90%	79%	6,905	6,988
Not Sp. Education	95%	84%	68,809	70,668
English Learner	93%	79%	2,375	3,565
Non-English Learner	94%	84%	73,339	74,091

Utah Aspire Plus Mathematics

Student Group	% Tested 2019	% Tested 2021	# Tested 2019	# Tested 2021
All Students	94%	84%	75,574	77,669
Grade 9	95%	86%	38,600	40,409
Grade 10	93%	82%	36,974	37,260
Female	94%	83%	37,142	37,163
Male	94%	85%	38,430	40,502
African American	92%	78%	774	932
Native American	95%	78%	775	531
Asian	96%	84%	1,183	1,324
Hispanic or Latino	94%	80%	11,867	12,722
Multiple Races	94%	83%	1,835	2,122
Pacific Islander	95%	73%	1,002	999
White	94%	85%	58,138	59,039
Low Income	93%	80%	21,511	19,073
Not Low Income	94%	85%	54,063	58,596
Special Education	91%	78%	6,924	6,939
Not Sp. Education	94%	85%	68,650	70,730
English Learner	93%	80%	2,383	3,614
Non-English Learner	94%	84%	73,191	74,055

Appendix C – Match Rate Comparisons (2019 vs. 2021)

Overall

ELA

Current Test	Previous Test	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
Grade 5 ELA	Grade 3 ELA	92.0	88.3	-3.6
Grade 6 ELA	Grade 4 ELA	91.4	88.1	-3.3
Grade 7 ELA	Grade 5 ELA	90.3	85.0	-5.3
Grade 8 ELA	Grade 6 ELA	89.1	83.4	-5.7
Grade 9 ELA	Grade 7 ELA	83.0	71.5	-11.5
Grade 10 ELA	Grade 8 ELA	79.5	68.2	-11.4

Mathematics

Current Test	Previous Test	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
Grade 5 Mathematics	Grade 3 Mathematics	91.6	87.8	-3.9
Grade 6 Mathematics	Grade 4 Mathematics	90.6	87.2	-3.4
Grade 7 Mathematics	Grade 5 Mathematics	84.8	81.0	-3.8
Grade 8 Mathematics	Grade 6 Mathematics	82.4	77.0	-5.5
Grade 9 Mathematics	Grade 7 Mathematics	82.6	70.5	-12.1
Grade 10 Mathematics	Grade 8 Mathematics	76.9	64.3	-12.6

Science

Current Test	Previous Test	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
Grade 6 Science	Grade 4 Science	91.2	87.9	-3.3
Grade 7 Science	Grade 5 Science	89.8	85.0	-4.9
Grade 8 Science	Grade 6 Science	88.8	83.8	-5.0

RISE Grade 5 ELA (Previous Test: Grade 3 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	92.0	88.3	-3.6
African American	85.7	84.3	-1.4
Native American	86.0	67.8	-18.2
Asian	87.2	84.2	-3.0
Hispanic or Latino	93.5	91.2	-2.3
Multiple Races	98.0	89.1	-9.0
Pacific Islander	87.3	82.0	-5.3
White	91.8	88.2	-3.6
Not Low Income	96.0	96.1	0.1
Low Income	85.6	75.2	-10.4
Not Student with Disabilities	92.4	89.5	-2.9
Student with Disabilities	89.4	81.6	-7.8
Not English Learner	92.8	90.4	-2.4

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
English Learner	84.3	72.6	-11.7

RISE Grade 6 ELA (Previous Test: Grade 4 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	91.4	88.1	-3.3
African American	78.6	78.8	0.3
Native American	82.4	68.4	-14.0
Asian	89.2	85.3	-4.0
Hispanic or Latino	92.7	89.3	-3.4
Multiple Races	98.2	91.2	-6.9
Pacific Islander	86.1	80.1	-5.9
White	91.4	88.3	-3.0
Not Low Income	97.2	97.3	0.1
Low Income	82.6	73.0	-9.6
Not Student with Disabilities	93.2	90.5	-2.7
Student with Disabilities	80.4	73.9	-6.5
Not English Learner	92.0	91.0	-0.9
English Learner	83.9	66.2	-17.7

RISE Grade 7 ELA (Previous Test: Grade 5 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	90.3	85.0	-5.3
African American	77.3	77.4	0.1
Native American	86.7	64.2	-22.5
Asian	87.5	80.6	-6.8
Hispanic or Latino	90.5	84.8	-5.7
Multiple Races	94.7	87.1	-7.6
Pacific Islander	85.4	75.6	-9.9
White	90.5	85.6	-4.9
Not Low Income	97.5	95.2	-2.2
Low Income	79.1	67.7	-11.4
Not Student with Disabilities	93.0	88.0	-5.1
Student with Disabilities	72.6	66.4	-6.2
Not English Learner	90.6	86.4	-4.2
English Learner	83.9	71.8	-12.1

RISE Grade 8 ELA (Previous Test: Grade 6 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	89.1	83.4	-5.7
African American	77.8	75.8	-2.0

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
Native American	82.5	62.1	-20.4
Asian	87.2	82.3	-4.8
Hispanic or Latino	89.1	82.5	-6.6
Multiple Races	91.9	82.3	-9.6
Pacific Islander	85.4	74.0	-11.4
White	89.5	84.4	-5.1
Not Low Income	97.5	94.3	-3.2
Low Income	75.8	64.7	-11.0
Not Student with Disabilities	91.7	86.0	-5.6
Student with Disabilities	71.0	65.7	-5.3
Not English Learner	89.3	84.0	-5.3
English Learner	84.8	76.2	-8.6

Utah Aspire Plus Grade 9 ELA (Previous Test: Grade 7 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	83.0	71.5	-11.5
African American	65.8	56.3	-9.5
Native American	68.4	44.0	-24.4
Asian	80.4	66.2	-14.2
Hispanic or Latino	77.2	62.5	-14.7
Multiple Races	87.0	65.3	-21.7
Pacific Islander	75.2	55.3	-19.9
White	85.0	75.0	-9.9
Not Low Income	93.1	83.7	-9.4
Low Income	66.0	49.0	-17.0
Not Student with Disabilities	87.7	74.9	-12.9
Student with Disabilities	44.5	45.6	1.1
Not English Learner	84.2	73.1	-11.1
English Learner	57.4	46.5	-10.9

Utah Aspire Plus Grade 10 ELA (Previous Test: Grade 8 ELA)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	79.5	68.2	-11.4
African American	63.3	49.7	-13.6
Native American	65.5	39.1	-26.4
Asian	75.4	66.2	-9.2
Hispanic or Latino	73.3	57.2	-16.1
Multiple Races	80.2	67.8	-12.5
Pacific Islander	72.3	45.1	-27.2
White	81.8	72.1	-9.6
Not Low Income	90.7	80.3	-10.4
Low Income	60.0	44.3	-15.7

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
Not Student with Disabilities	83.7	71.0	-12.7
Student with Disabilities	42.9	43.4	0.5
Not English Learner	80.6	69.6	-11.1
English Learner	56.2	40.1	-16.0

RISE Grade 5 Mathematics (Previous Test: Grade 3 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	91.6	87.8	-3.9
African American	84.9	82.8	-2.1
Native American	85.6	66.8	-18.8
Asian	86.5	84.3	-2.1
Hispanic or Latino	93.4	90.6	-2.8
Multiple Races	97.7	88.1	-9.6
Pacific Islander	86.8	80.4	-6.3
White	91.4	87.7	-3.7
Not Low Income	95.6	95.7	0.1
Low Income	85.5	74.5	-10.9
Not Student with Disabilities	92.0	89.0	-3.1
Student with Disabilities	89.0	80.9	-8.1
Not English Learner	92.5	89.8	-2.6
English Learner	84.2	72.0	-12.2

RISE Grade 6 Mathematics (Previous Test: Grade 4 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	90.6	87.2	-3.4
African American	78.1	77.3	-0.8
Native American	82.5	66.3	-16.2
Asian	88.6	83.2	-5.3
Hispanic or Latino	91.9	88.4	-3.5
Multiple Races	97.5	90.2	-7.4
Pacific Islander	86.1	78.9	-7.2
White	90.5	87.6	-3.0
Not Low Income	96.4	96.6	0.2
Low Income	81.9	72.0	-9.9
Not Student with Disabilities	92.5	89.7	-2.7
Student with Disabilities	79.3	72.9	-6.4
Not English Learner	91.2	90.2	-1.0
English Learner	83.4	65.6	-17.8

RISE Grade 7 Mathematics (Previous Test: Grade 5 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	84.8	81.0	-3.8
African American	75.0	73.9	-1.1
Native American	83.5	63.3	-20.2
Asian	69.7	72.2	2.5
Hispanic or Latino	87.4	81.9	-5.5
Multiple Races	89.7	82.0	-7.6
Pacific Islander	83.0	72.5	-10.4
White	84.7	81.5	-3.1
Not Low Income	90.2	90.3	0.1
Low Income	76.5	65.4	-11.0
Not Student with Disabilities	87.1	83.9	-3.3
Student with Disabilities	70.1	63.3	-6.8
Not English Learner	85.0	82.2	-2.8
English Learner	81.3	70.3	-11.0

RISE Grade 8 Mathematics (Previous Test: Grade 6 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	82.4	77.0	-5.5
African American	75.1	72.6	-2.5
Native American	79.4	60.4	-18.9
Asian	69.9	69.7	-0.2
Hispanic or Latino	84.8	79.4	-5.4
Multiple Races	83.4	74.4	-9.1
Pacific Islander	81.0	71.4	-9.5
White	82.3	77.0	-5.3
Not Low Income	88.7	85.6	-3.1
Low Income	72.5	62.1	-10.4
Not Student with Disabilities	84.4	79.2	-5.3
Student with Disabilities	68.1	62.0	-6.1
Not English Learner	82.4	77.2	-5.2
English Learner	82.7	74.3	-8.4

Utah Aspire Plus Grade 9 Mathematics (Previous Test: Grade 7 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	82.6	70.5	-12.1
African American	65.0	52.2	-12.8
Native American	68.3	45.3	-23.0
Asian	83.1	64.1	-19.0
Hispanic or Latino	77.4	62.1	-15.3
Multiple Races	88.1	64.5	-23.6
Pacific Islander	75.6	54.3	-21.4

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
White	84.3	73.9	-10.4
Not Low Income	92.9	82.7	-10.2
Low Income	65.8	48.7	-17.1
Not Student with Disabilities	88.1	74.1	-14.0
Student with Disabilities	39.6	43.1	3.5
Not English Learner	83.7	71.9	-11.7
English Learner	59.6	47.7	-11.9

Utah Aspire Plus Grade 10 Mathematics (Previous Test: Grade 8 Mathematics)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	76.9	64.3	-12.6
African American	65.6	48.0	-17.6
Native American	69.1	38.9	-30.2
Asian	70.1	50.7	-19.4
Hispanic or Latino	74.8	55.8	-19.0
Multiple Races	75.5	61.3	-14.2
Pacific Islander	76.4	48.2	-28.3
White	77.9	67.7	-10.2
Not Low Income	86.1	74.9	-11.2
Low Income	60.7	43.4	-17.3
Not Student with Disabilities	80.8	67.0	-13.8
Student with Disabilities	42.3	40.3	-2.0
Not English Learner	77.7	65.4	-12.2
English Learner	59.7	40.8	-19.0

RISE Grade 6 Science (Previous Test: Grade 4 Science)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	91.2	87.9	-3.3
African American	78.7	79.2	0.5
Native American	83.1	67.9	-15.1
Asian	89.4	85.1	-4.2
Hispanic or Latino	92.4	89.3	-3.1
Multiple Races	98.1	91.3	-6.7
Pacific Islander	86.0	80.1	-5.9
White	91.2	88.1	-3.0
Not Low Income	97.1	97.2	0.1
Low Income	82.3	72.8	-9.5
Not Student with Disabilities	93.0	90.4	-2.6
Student with Disabilities	80.3	73.6	-6.7
Not English Learner	91.8	90.9	-0.9
English Learner	83.8	66.1	-17.7

RISE Grade 7 Science (Previous Test: Grade 5 Science)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	89.8	85.0	-4.9
African American	76.9	76.1	-0.8
Native American	85.8	64.8	-21.1
Asian	86.8	80.6	-6.3
Hispanic or Latino	89.7	85.0	-4.6
Multiple Races	94.6	86.6	-8.0
Pacific Islander	85.2	74.6	-10.6
White	90.2	85.7	-4.5
Not Low Income	97.1	95.2	-2.0
Low Income	78.5	67.9	-10.6
Not Student with Disabilities	92.7	88.0	-4.6
Student with Disabilities	71.7	66.2	-5.4
Not English Learner	90.2	86.4	-3.8
English Learner	82.8	72.1	-10.7

RISE Grade 8 Science (Previous Test: Grade 6 Science)

Student Group	Match Rate 2019 (%)	Match Rate 2021 (%)	Match Rate Difference (%)
All Students	88.8	83.8	-5.0
African American	76.6	76.9	0.3
Native American	80.6	62.7	-17.9
Asian	87.4	82.5	-5.0
Hispanic or Latino	88.5	83.3	-5.2
Multiple Races	91.9	84.2	-7.7
Pacific Islander	84.4	75.2	-9.3
White	89.2	84.6	-4.6
Not Low Income	97.3	94.7	-2.6
Low Income	75.2	65.1	-10.1
Not Student with Disabilities	91.4	86.5	-4.9
Student with Disabilities	70.5	65.9	-4.6
Not English Learner	89.0	84.4	-4.6
English Learner	84.5	76.9	-7.6

Appendix D – Observed Academic Performance (2021)

RISE Grade 3 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	44,945	315	78	43%
African American	569	276	71	21%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Native American	351	261	71	15%
Asian	771	320	78	43%
Hispanic or Latino	8,130	276	73	22%
Multiple Races	1,589	321	76	47%
Pacific Islander	717	275	68	20%
White	32,818	326	76	49%
Not Low Income	30,249	329	75	51%
Low Income	14,696	285	76	27%
Not Student with Disabilities	37,897	324	73	47%
Student with Disabilities	7,048	263	82	21%
Not English Learner	39,866	322	76	47%
English Learner	5,079	258	67	14%

RISE Grade 4 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,092	347	84	38%
African American	660	303	80	18%
Native American	393	290	78	13%
Asian	780	356	84	42%
Hispanic or Latino	8,585	302	79	17%
Multiple Races	1,525	350	84	38%
Pacific Islander	785	301	73	15%
White	33,364	361	80	45%
Not Low Income	31,106	364	80	45%
Low Income	14,986	314	82	23%
Not Student with Disabilities	39,007	358	78	42%
Student with Disabilities	7,085	287	87	17%
Not English Learner	40,864	356	81	42%
English Learner	5,228	279	70	8%

RISE Grade 5 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,527	387	86	44%
African American	687	339	88	24%
Native American	369	331	81	19%
Asian	792	399	88	48%
Hispanic or Latino	8,727	344	83	23%
Multiple Races	1,468	390	83	45%
Pacific Islander	723	346	79	23%
White	33,761	401	82	51%
Not Low Income	31,538	404	81	52%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Low Income	14,989	352	86	28%
Not Student with Disabilities	39,977	399	79	49%
Student with Disabilities	6,550	314	89	17%
Not English Learner	41,850	396	83	48%
English Learner	4,677	310	71	8%

RISE Grade 6 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	47,189	415	87	44%
African American	644	359	85	20%
Native American	381	356	83	18%
Asian	789	421	87	47%
Hispanic or Latino	9,016	369	84	23%
Multiple Races	1,484	421	84	46%
Pacific Islander	697	378	76	23%
White	34,178	429	83	51%
Not Low Income	32,220	432	81	52%
Low Income	14,969	379	87	28%
Not Student with Disabilities	41,157	428	79	49%
Student with Disabilities	6,032	329	87	13%
Not English Learner	42,733	424	83	48%
English Learner	4,456	327	71	6%

RISE Grade 7 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,695	426	84	41%
African American	681	378	82	21%
Native American	383	371	77	17%
Asian	749	442	87	47%
Hispanic or Latino	8,680	385	80	22%
Multiple Races	1,463	433	83	44%
Pacific Islander	700	385	73	19%
White	34,039	439	80	47%
Not Low Income	32,625	440	80	48%
Low Income	14,070	394	83	26%
Not Student with Disabilities	41,390	437	78	45%
Student with Disabilities	5,305	343	75	10%
Not English Learner	42,590	435	81	45%
English Learner	4,105	342	63	4%

RISE Grade 8 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	45,871	446	92	43%
African American	585	392	94	22%
Native American	356	388	87	20%
Asian	749	463	95	50%
Hispanic or Latino	8,448	398	91	23%
Multiple Races	1,322	449	90	45%
Pacific Islander	675	398	86	20%
White	33,736	460	87	49%
Not Low Income	32,595	461	87	50%
Low Income	13,276	410	93	28%
Not Student with Disabilities	41,081	458	86	48%
Student with Disabilities	4,790	349	82	8%
Not English Learner	42,484	454	88	47%
English Learner	3,387	344	73	5%

RISE Grade 3 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	44,839	309	38	45%
African American	561	284	37	20%
Native American	352	278	36	12%
Asian	761	314	38	50%
Hispanic or Latino	8,089	288	36	22%
Multiple Races	1,581	310	38	47%
Pacific Islander	714	285	35	20%
White	32,781	316	36	52%
Not Low Income	30,204	317	35	54%
Low Income	14,635	293	38	29%
Not Student with Disabilities	37,814	314	35	49%
Student with Disabilities	7,025	285	42	25%
Not English Learner	39,784	313	37	49%
English Learner	5,055	281	35	16%

RISE Grade 4 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	45,904	339	46	45%
African American	653	308	46	20%
Native American	387	306	42	15%
Asian	778	349	47	53%
Hispanic or Latino	8,533	313	44	22%
Multiple Races	1,521	339	45	45%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Pacific Islander	775	313	42	19%
White	33,257	347	43	53%
Not Low Income	31,015	348	42	54%
Low Income	14,889	319	46	28%
Not Student with Disabilities	38,879	345	42	49%
Student with Disabilities	7,025	305	52	23%
Not English Learner	40,720	343	44	49%
English Learner	5,184	303	41	13%

RISE Grade 5 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,200	368	53	42%
African American	672	331	51	15%
Native American	361	327	52	15%
Asian	790	381	53	51%
Hispanic or Latino	8,653	338	50	19%
Multiple Races	1,453	368	52	43%
Pacific Islander	710	340	47	20%
White	33,561	378	50	49%
Not Low Income	31,365	379	49	51%
Low Income	14,835	345	53	25%
Not Student with Disabilities	39,711	375	48	46%
Student with Disabilities	6,489	325	58	18%
Not English Learner	41,569	374	51	46%
English Learner	4,631	322	45	9%

RISE Grade 6 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,734	400	60	32%
African American	634	352	61	10%
Native American	368	355	59	11%
Asian	773	410	63	39%
Hispanic or Latino	8,920	365	57	13%
Multiple Races	1,461	402	59	34%
Pacific Islander	687	375	56	16%
White	33,891	411	56	38%
Not Low Income	31,963	413	56	39%
Low Income	14,771	374	61	18%
Not Student with Disabilities	40,795	409	55	36%
Student with Disabilities	5,939	341	62	9%
Not English Learner	42,314	407	57	35%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
English Learner	4,420	341	52	4%

RISE Grade 7 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	44,572	429	64	41%
African American	651	380	62	13%
Native American	375	381	62	13%
Asian	679	442	65	48%
Hispanic or Latino	8,401	393	62	19%
Multiple Races	1,382	431	64	42%
Pacific Islander	670	391	60	17%
White	32,414	440	60	48%
Not Low Income	30,993	441	59	48%
Low Income	13,579	401	65	25%
Not Student with Disabilities	39,495	437	59	45%
Student with Disabilities	5,077	365	62	10%
Not English Learner	40,539	435	61	45%
English Learner	4,033	362	53	6%

RISE Grade 8 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	44,124	466	75	36%
African American	570	409	75	13%
Native American	347	422	68	14%
Asian	723	481	74	41%
Hispanic or Latino	8,247	423	71	15%
Multiple Races	1,261	464	74	34%
Pacific Islander	653	430	68	14%
White	32,323	479	70	42%
Not Low Income	31,158	479	70	42%
Low Income	12,966	436	76	21%
Not Student with Disabilities	39,587	475	70	39%
Student with Disabilities	4,537	391	69	7%
Not English Learner	40,794	473	72	38%
English Learner	3,330	388	60	3%

RISE Grade 6 Science

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	47,110	849	14	53%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
African American	647	840	12	24%
Native American	376	841	12	26%
Asian	787	850	14	55%
Hispanic or Latino	9,020	842	12	30%
Multiple Races	1,478	850	13	55%
Pacific Islander	697	842	11	28%
White	34,105	852	13	60%
Not Low Income	32,173	852	13	61%
Low Income	14,937	844	13	37%
Not Student with Disabilities	41,114	851	13	58%
Student with Disabilities	5,996	839	13	20%
Not English Learner	42,654	851	13	57%
English Learner	4,456	837	10	13%

RISE Grade 7 Science

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,697	849	13	44%
African American	672	840	11	19%
Native American	383	841	12	18%
Asian	748	851	13	50%
Hispanic or Latino	8,708	842	12	22%
Multiple Races	1,457	849	13	46%
Pacific Islander	694	841	10	19%
White	34,035	851	13	51%
Not Low Income	32,599	851	12	51%
Low Income	14,098	844	12	29%
Not Student with Disabilities	41,418	850	12	48%
Student with Disabilities	5,279	838	11	13%
Not English Learner	42,559	850	13	48%
English Learner	4,138	837	9	7%

RISE Grade 8 Science

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	46,071	850	13	49%
African American	592	841	12	23%
Native American	358	842	11	22%
Asian	755	852	14	56%
Hispanic or Latino	8,529	843	12	24%
Multiple Races	1,342	850	13	48%
Pacific Islander	678	842	12	23%
White	33,817	852	12	56%

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
Not Low Income	32,706	852	12	56%
Low Income	13,365	845	12	31%
Not Student with Disabilities	41,278	851	12	53%
Student with Disabilities	4,793	838	11	14%
Not English Learner	42,644	851	12	52%
English Learner	3,427	836	9	8%

Utah Aspire Plus Grade 9 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	37,530	199	25	47%
African American	424	183	24	21%
Native American	248	187	20	24%
Asian	614	205	25	56%
Hispanic or Latino	5,853	186	24	25%
Multiple Races	1,008	200	24	47%
Pacific Islander	472	186	22	25%
White	28,911	202	24	52%
Not Low Income	28,396	202	24	52%
Low Income	9,134	189	25	30%
Not Student with Disabilities	34,722	202	23	50%
Student with Disabilities	2,808	171	22	8%
Not English Learner	35,959	201	24	48%
English Learner	1,571	168	20	4%

Utah Aspire Plus Grade 10 ELA

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	34,562	201	24	51%
African American	370	186	24	26%
Native American	221	186	21	21%
Asian	599	207	26	61%
Hispanic or Latino	5,211	189	22	28%
Multiple Races	952	201	23	51%
Pacific Islander	390	188	21	25%
White	26,819	204	24	56%
Not Low Income	26,851	204	24	56%
Low Income	7,711	192	23	33%
Not Student with Disabilities	32,210	203	23	54%
Student with Disabilities	2,352	174	21	9%
Not English Learner	33,454	202	24	52%
English Learner	1,108	170	18	4%

Utah Aspire Plus Grade 9 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	37,163	195	30	38%
African American	408	171	31	10%
Native American	248	180	27	16%
Asian	598	200	31	45%
Hispanic or Latino	5,819	176	31	16%
Multiple Races	1,009	195	29	39%
Pacific Islander	470	177	31	15%
White	28,611	199	28	44%
Not Low Income	28,090	199	28	44%
Low Income	9,073	182	32	22%
Not Student with Disabilities	34,559	197	28	41%
Student with Disabilities	2,604	161	32	6%
Not English Learner	35,571	196	29	40%
English Learner	1,592	157	30	3%

Utah Aspire Plus Grade 10 Mathematics

Student Group	Number of Testers	Scale Score Average	Scale Score Std. Deviation	Proficiency Rate
All Students	34,393	194	32	31%
African American	362	171	32	7%
Native American	218	178	35	14%
Asian	532	201	32	39%
Hispanic or Latino	5,243	176	35	12%
Multiple Races	935	194	32	30%
Pacific Islander	434	176	33	10%
White	26,669	198	30	36%
Not Low Income	26,676	198	30	35%
Low Income	7,717	180	35	17%
Not Student with Disabilities	32,188	196	30	33%
Student with Disabilities	2,205	157	37	4%
Not English Learner	33,235	195	31	32%
English Learner	1,158	155	36	3%

Appendix E – Comparisons of Academic Achievement (2019 vs. 2021)

RISE Grade 5 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,527	387	400	-13	-0.16
African American	687	339	368	-29	-0.37
Native American	369	331	360	-29	-0.37
Asian	792	399	401	-2	-0.03
Hispanic or Latino	8,727	344	369	-25	-0.32
Multiple Races	1,468	390	402	-12	-0.16
Pacific Islander	723	346	371	-25	-0.32
White	33,761	401	410	-9	-0.12
Not Low Income	31,538	404	412	-8	-0.10
Low Income	14,989	352	375	-23	-0.30
Not Student with Disabilities	39,977	399	409	-10	-0.12
Student with Disabilities	6,550	314	346	-32	-0.42
Not English Learner	41,850	396	407	-11	-0.14
English Learner	4,677	310	342	-32	-0.42

RISE Grade 6 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	47,189	415	437	-22	-0.25
African American	644	359	394	-35	-0.40
Native American	381	356	391	-35	-0.40
Asian	789	421	437	-16	-0.18
Hispanic or Latino	9,016	369	400	-31	-0.35
Multiple Races	1,484	421	444	-23	-0.27
Pacific Islander	697	378	402	-24	-0.28
White	34,178	429	448	-19	-0.22
Not Low Income	32,220	432	450	-18	-0.21
Low Income	14,969	379	409	-30	-0.35
Not Student with Disabilities	41,157	428	447	-19	-0.22
Student with Disabilities	6,032	329	368	-39	-0.45
Not English Learner	42,733	424	444	-20	-0.24
English Learner	4,456	327	363	-36	-0.42

RISE Grade 7 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,695	426	434	-8	-0.09
African American	681	378	391	-13	-0.16
Native American	383	371	383	-12	-0.14

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
Asian	749	442	443	-1	-0.01
Hispanic or Latino	8,680	385	396	-11	-0.13
Multiple Races	1,463	433	441	-8	-0.09
Pacific Islander	700	385	402	-17	-0.20
White	34,039	439	446	-7	-0.08
Not Low Income	32,625	440	446	-6	-0.07
Low Income	14,070	394	406	-12	-0.14
Not Student with Disabilities	41,390	437	444	-7	-0.09
Student with Disabilities	5,305	343	356	-13	-0.15
Not English Learner	42,590	435	442	-7	-0.09
English Learner	4,105	342	356	-14	-0.16

RISE Grade 8 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	45,871	446	457	-11	-0.12
African American	585	392	411	-19	-0.21
Native American	356	388	406	-18	-0.20
Asian	749	463	466	-3	-0.03
Hispanic or Latino	8,448	398	415	-17	-0.19
Multiple Races	1,322	449	460	-11	-0.12
Pacific Islander	675	398	418	-20	-0.23
White	33,736	460	469	-9	-0.10
Not Low Income	32,595	461	470	-9	-0.10
Low Income	13,276	410	426	-16	-0.18
Not Student with Disabilities	41,081	458	468	-10	-0.11
Student with Disabilities	4,790	349	370	-21	-0.24
Not English Learner	42,484	454	464	-10	-0.11
English Learner	3,387	344	367	-23	-0.26

RISE Grade 5 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,200	368	377	-9	-0.18
African American	672	331	348	-17	-0.33
Native American	361	327	348	-21	-0.39
Asian	790	381	384	-3	-0.05
Hispanic or Latino	8,653	338	356	-18	-0.33
Multiple Races	1,453	368	377	-9	-0.17
Pacific Islander	710	340	358	-18	-0.34
White	33,561	378	385	-7	-0.13
Not Low Income	31,365	379	385	-6	-0.12
Low Income	14,835	345	361	-16	-0.30

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
Not Student with Disabilities	39,711	375	384	-9	-0.16
Student with Disabilities	6,489	325	340	-15	-0.28
Not English Learner	41,569	374	382	-8	-0.15
English Learner	4,631	322	343	-21	-0.38

RISE Grade 6 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,734	400	411	-11	-0.19
African American	634	352	377	-25	-0.41
Native American	368	355	383	-28	-0.46
Asian	773	410	418	-8	-0.13
Hispanic or Latino	8,920	365	385	-20	-0.34
Multiple Races	1,461	402	413	-11	-0.19
Pacific Islander	687	375	392	-17	-0.29
White	33,891	411	420	-9	-0.15
Not Low Income	31,963	413	421	-8	-0.13
Low Income	14,771	374	393	-19	-0.32
Not Student with Disabilities	40,795	409	419	-10	-0.17
Student with Disabilities	5,939	341	362	-21	-0.36
Not English Learner	42,314	407	417	-10	-0.17
English Learner	4,420	341	366	-25	-0.43

RISE Grade 7 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	44,572	429	441	-12	-0.21
African American	651	380	404	-24	-0.40
Native American	375	381	400	-19	-0.32
Asian	679	442	452	-10	-0.16
Hispanic or Latino	8,401	393	416	-23	-0.39
Multiple Races	1,382	431	442	-11	-0.19
Pacific Islander	670	391	417	-26	-0.45
White	32,414	440	449	-9	-0.15
Not Low Income	30,993	441	450	-9	-0.15
Low Income	13,579	401	421	-20	-0.34
Not Student with Disabilities	39,495	437	448	-11	-0.19
Student with Disabilities	5,077	365	385	-20	-0.34
Not English Learner	40,539	435	445	-10	-0.18
English Learner	4,033	362	391	-29	-0.50

RISE Grade 8 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	44,124	466	480	-14	-0.19
African American	570	409	436	-27	-0.35
Native American	347	422	443	-21	-0.27
Asian	723	481	491	-10	-0.13
Hispanic or Latino	8,247	423	448	-25	-0.33
Multiple Races	1,261	464	480	-16	-0.21
Pacific Islander	653	430	457	-27	-0.36
White	32,323	479	490	-11	-0.15
Not Low Income	31,158	479	490	-11	-0.15
Low Income	12,966	436	457	-21	-0.28
Not Student with Disabilities	39,587	475	489	-14	-0.19
Student with Disabilities	4,537	391	406	-15	-0.20
Not English Learner	40,794	473	486	-13	-0.18
English Learner	3,330	388	412	-24	-0.32

RISE Grade 6 Science

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	47,110	849	852	-3	-0.21
African American	647	840	847	-7	-0.51
Native American	376	841	847	-6	-0.43
Asian	787	850	851	-1	-0.10
Hispanic or Latino	9,020	842	846	-4	-0.34
Multiple Races	1,478	850	853	-3	-0.20
Pacific Islander	697	842	847	-5	-0.40
White	34,105	852	854	-2	-0.17
Not Low Income	32,173	852	854	-2	-0.16
Low Income	14,937	844	848	-4	-0.32
Not Student with Disabilities	41,114	851	853	-2	-0.18
Student with Disabilities	5,996	839	844	-5	-0.40
Not English Learner	42,654	851	853	-2	-0.19
English Learner	4,456	837	842	-5	-0.40

RISE Grade 7 Science

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,697	849	850	-1	-0.09
African American	672	840	842	-2	-0.16
Native American	383	841	842	-1	-0.08
Asian	748	851	850	1	0.09
Hispanic or Latino	8,708	842	844	-2	-0.14

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
Multiple Races	1,457	849	850	-1	-0.08
Pacific Islander	694	841	843	-2	-0.14
White	34,035	851	852	-1	-0.08
Not Low Income	32,599	851	852	-1	-0.07
Low Income	14,098	844	846	-2	-0.15
Not Student with Disabilities	41,418	850	851	-1	-0.08
Student with Disabilities	5,279	838	840	-2	-0.17
Not English Learner	42,559	850	851	-1	-0.09
English Learner	4,138	837	839	-2	-0.13

RISE Grade 8 Science

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	46,071	850	852	-2	-0.14
African American	592	841	849	-8	-0.55
Native American	358	842	849	-7	-0.48
Asian	755	852	852	0	0.01
Hispanic or Latino	8,529	843	850	-7	-0.51
Multiple Races	1,342	850	852	-2	-0.13
Pacific Islander	678	842	850	-8	-0.58
White	33,817	852	852	0	-0.03
Not Low Income	32,706	852	852	0	-0.03
Low Income	13,365	845	851	-6	-0.41
Not Student with Disabilities	41,278	851	852	-1	-0.07
Student with Disabilities	4,793	838	848	-10	-0.70
Not English Learner	42,644	851	852	-1	-0.09
English Learner	3,427	836	848	-12	-0.81

Utah Aspire Plus Grade 9 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	37,530	199	201	-2	-0.08
African American	424	183	186	-3	-0.13
Native American	248	187	189	-2	-0.08
Asian	614	205	206	-1	-0.02
Hispanic or Latino	5,853	186	189	-3	-0.10
Multiple Races	1,008	200	203	-3	-0.10
Pacific Islander	472	186	189	-3	-0.13
White	28,911	202	204	-2	-0.07
Not Low Income	28,396	202	204	-2	-0.07
Low Income	9,134	189	192	-3	-0.10
Not Student with Disabilities	34,722	202	204	-2	-0.07
Student with Disabilities	2,808	171	175	-4	-0.15

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
Not English Learner	35,959	201	203	-2	-0.08
English Learner	1,571	168	171	-3	-0.13

Utah Aspire Plus Grade 10 ELA

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	34,562	201	204	-3	-0.11
African American	370	186	189	-3	-0.10
Native American	221	186	190	-4	-0.14
Asian	599	207	209	-2	-0.08
Hispanic or Latino	5,211	189	193	-4	-0.17
Multiple Races	952	201	205	-4	-0.14
Pacific Islander	390	188	193	-5	-0.18
White	26,819	204	207	-3	-0.10
Not Low Income	26,851	204	207	-3	-0.10
Low Income	7,711	192	196	-4	-0.15
Not Student with Disabilities	32,210	203	206	-3	-0.11
Student with Disabilities	2,352	174	178	-4	-0.14
Not English Learner	33,454	202	205	-3	-0.11
English Learner	1,108	170	174	-4	-0.17

Utah Aspire Plus Grade 9 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	37,163	195	202	-7	-0.25
African American	408	171	183	-12	-0.45
Native American	248	180	187	-7	-0.27
Asian	598	200	209	-9	-0.31
Hispanic or Latino	5,819	176	188	-12	-0.44
Multiple Races	1,009	195	202	-7	-0.27
Pacific Islander	470	177	188	-11	-0.41
White	28,611	199	205	-6	-0.21
Not Low Income	28,090	199	205	-6	-0.21
Low Income	9,073	182	192	-10	-0.37
Not Student with Disabilities	34,559	197	203	-6	-0.23
Student with Disabilities	2,604	161	175	-14	-0.50
Not English Learner	35,571	196	202	-6	-0.24
English Learner	1,592	157	172	-15	-0.56

Utah Aspire Plus Grade 10 Mathematics

School Name	2021 N-Count	2021 Observed	2019 Fair Trend	Pandemic Effect	Effect Size
All Students	34,393	194	201	-7	-0.25
African American	362	171	181	-10	-0.35
Native American	218	178	190	-12	-0.41
Asian	532	201	208	-7	-0.22
Hispanic or Latino	5,243	176	188	-12	-0.42
Multiple Races	935	194	202	-8	-0.26
Pacific Islander	434	176	188	-12	-0.42
White	26,669	198	204	-6	-0.21
Not Low Income	26,676	198	204	-6	-0.21
Low Income	7,717	180	191	-11	-0.38
Not Student with Disabilities	32,188	196	203	-7	-0.23
Student with Disabilities	2,205	157	172	-15	-0.51
Not English Learner	33,235	195	202	-7	-0.24
English Learner	1,158	155	172	-17	-0.58

Appendix F – Opportunity to Learn (OTL) Indicators and Academic Achievement

In this appendix, we summarize the *academic achievement* (*proficiency rates*) of Utah students based on the response they gave to each question on the OTL survey at the end of their spring 2021 RISE or Utah Aspire Plus assessments.

Please note that the percentages in the tables in the appendix are *proficiency rates*, not the percentage of students who gave each response. For a summary of the how students responded to the OTL survey, please refer to USBE's *Opportunity to Learn Dashboard*.

Attendance and Quarantine

1. Most of this school year I have attended school...

Response	% Proficient RISE	% Proficient Utah Aspire+
5 days a week in-person only	43%	41%
4 days in-person and remotely 1 day	47%	46%
1 to 3 days in-person and remotely the other days	28%	36%
Online only	24%	25%
I attended school online previously and I attend school online this year	39%	41%

2. How many times were you quarantined and required to stay home from school?

Response	% Proficient RISE	% Proficient Utah Aspire+
Not at all: 0 times	46%	42%
1 time	44%	44%
2 or more times	36%	41%
I did not attend school in person this year.	35%	40%

Quality of Learning

3.1. I am satisfied with my learning this year.

Response	% Proficient RISE	% Proficient Utah Aspire+
Strongly Agree	50%	44%
Agree	42%	45%
Disagree	30%	38%
Strongly Disagree	22%	28%
I did not attend school in person this year.	32%	40%

3.2. Learning at school was harder this year due to safety guidelines like physical distancing or wearing masks.

Response	% Proficient RISE	% Proficient Utah Aspire+
Strongly Agree	37%	35%
Agree	44%	45%
Disagree	50%	48%
Strongly Disagree	47%	46%
I did not attend school in person this year.	36%	42%

4. Compared to a school year not affected by COVID-19 how much do you feel you learned this year?

Response	% Proficient RISE	% Proficient Utah Aspire+
I learned a lot more this year	31%	25%
I learned more this year	38%	32%
I learned about the same this year	54%	49%
I learned less this year	43%	44%
I learned a lot less this year	29%	31%

Remote Learning

5.1. I watched recorded lessons.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	39%	42%
Almost Always	42%	45%
Sometimes	37%	41%
Almost Never	47%	46%
Never	44%	41%
I did not participate in remote learning this year	50%	43%

5.2. I joined live lessons with my teacher(s).

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	41%	43%
Almost Always	41%	44%
Sometimes	36%	40%
Almost Never	43%	44%

Response	% Proficient RISE	% Proficient Utah Aspire+
Never	43%	43%
I did not participate in remote learning this year	50%	42%

5.3. I used learning software or online programs such as Canvas Google Classroom etc.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	46%	46%
Almost Always	37%	38%
Sometimes	29%	28%
Almost Never	30%	28%
Never	28%	21%
I did not participate in remote learning this year	52%	45%

5.4. I had access to individual help from my teacher(s) if I needed help with learning.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	43%	43%
Almost Always	42%	46%
Sometimes	37%	41%
Almost Never	40%	40%
Never	41%	33%
I did not participate in remote learning this year	52%	45%

5.5. An adult in my household was available if I needed help with learning.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	44%	44%
Almost Always	47%	48%
Sometimes	34%	39%
Almost Never	32%	38%
Never	24%	29%
I did not participate in remote learning this year	52%	44%

Internet Connectivity

6.1. I had good internet access.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	40%	42%
Almost Always	49%	49%
Sometimes	32%	32%
Almost Never	30%	27%
Never	16%	17%
I did not participate in remote learning this year	51%	44%

6.2. I had access to a computer or tablet that connected to the internet.

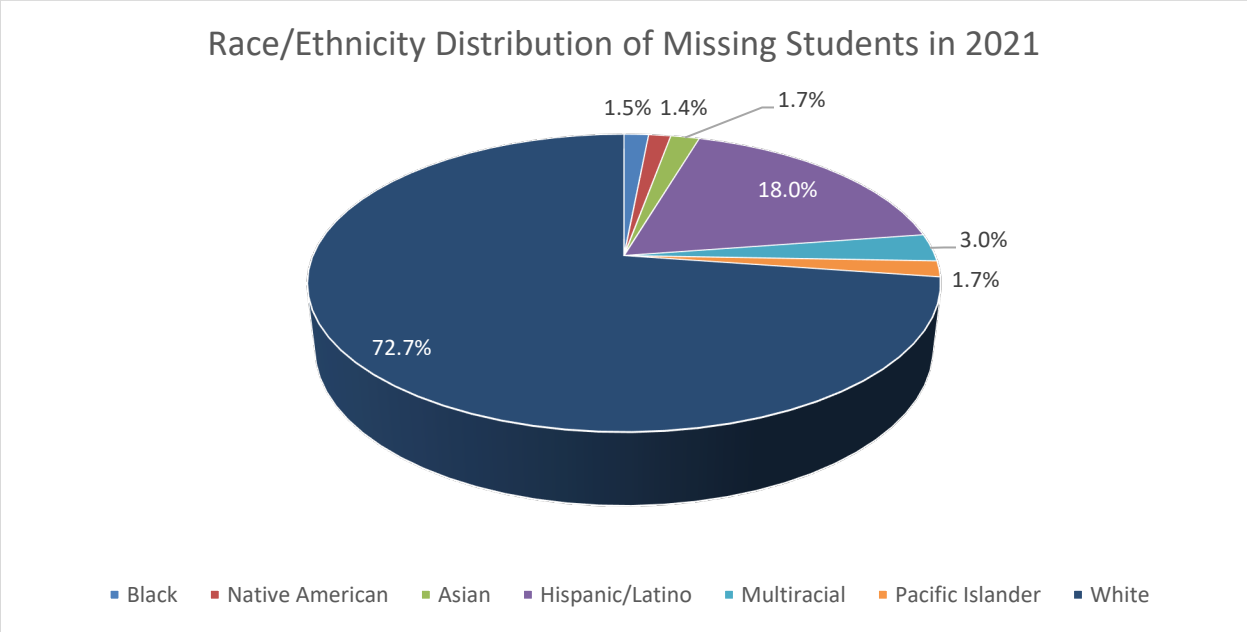
Response	% Proficient RISE	% Proficient Utah Aspire+
Always	45%	45%
Almost Always	39%	41%
Sometimes	24%	24%
Almost Never	19%	18%
Never	16%	10%
I did not participate in remote learning this year	51%	45%

6.3. I shared a computer or tablet that connected to the internet with at least one other person in my home.

Response	% Proficient RISE	% Proficient Utah Aspire+
Always	40%	39%
Almost Always	37%	39%
Sometimes	38%	42%
Almost Never	48%	51%
Never	42%	43%
I did not participate in remote learning this year	50%	44%

Appendix G – Demographic Comparisons of Missing vs. Participating Students

Figure G.1: Race/Ethnicity Distributions of Missing vs. Participating Students on RISE



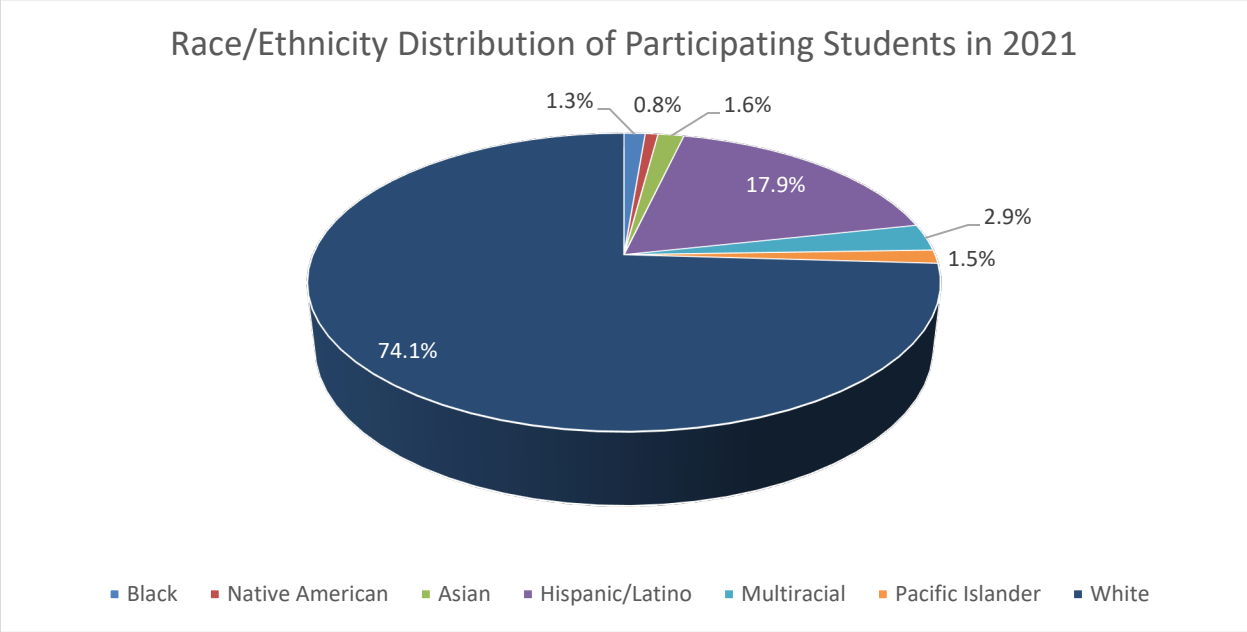
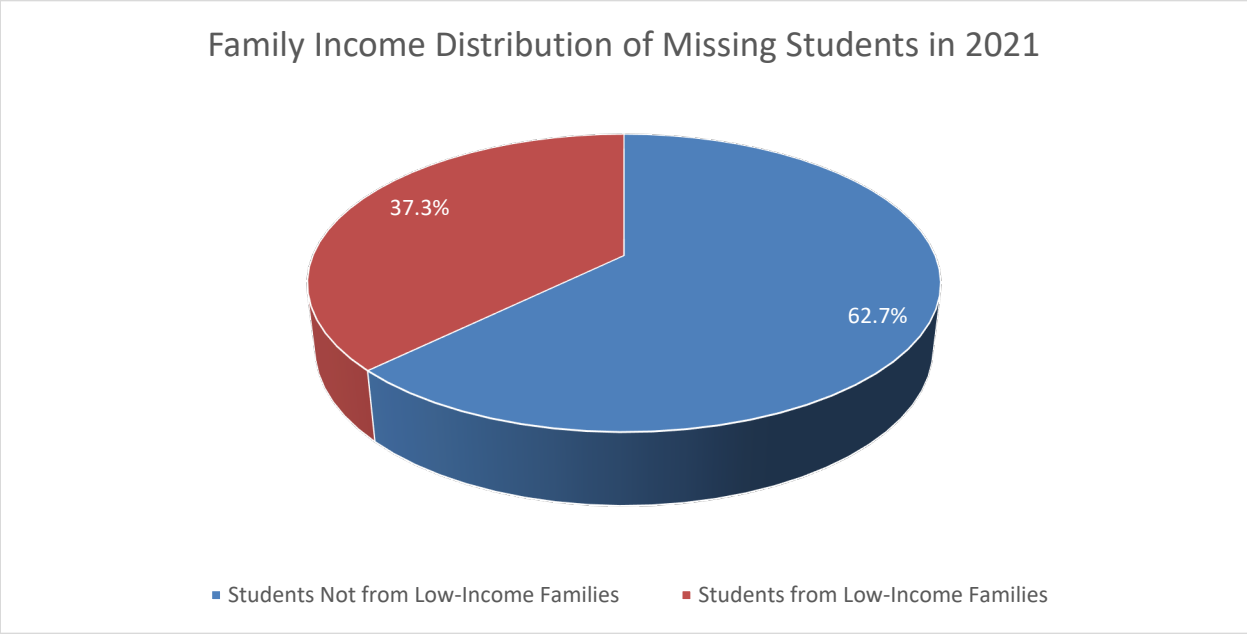


Figure G.2: Family Income Distributions of Missing vs. Participating Students on RISE



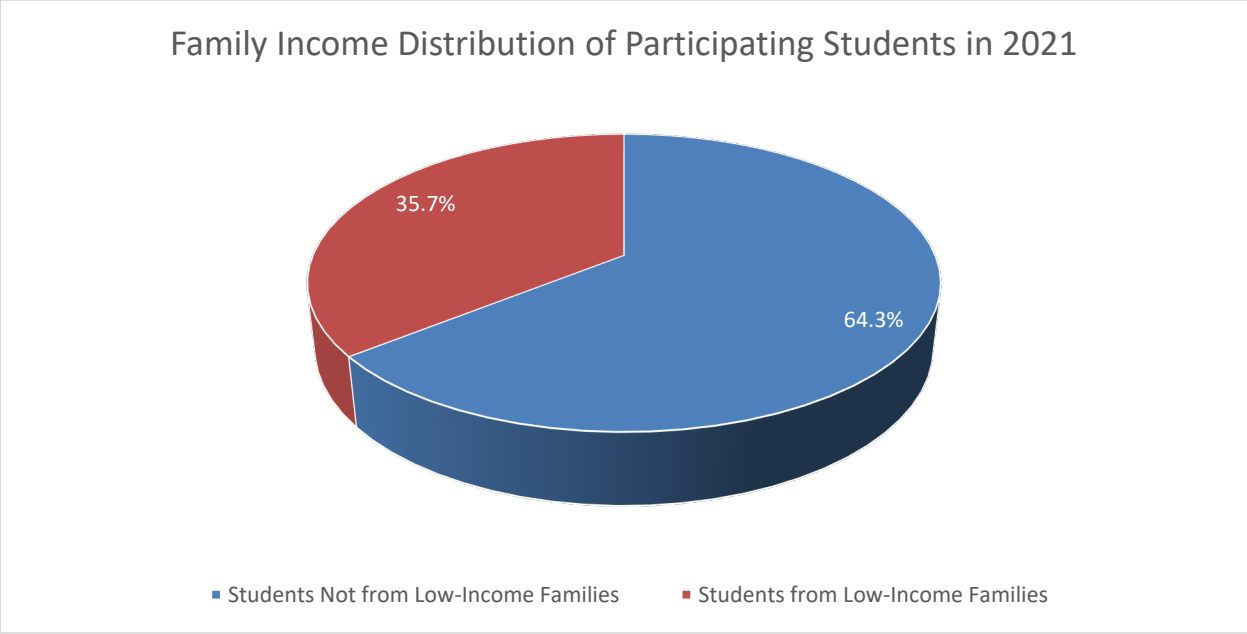
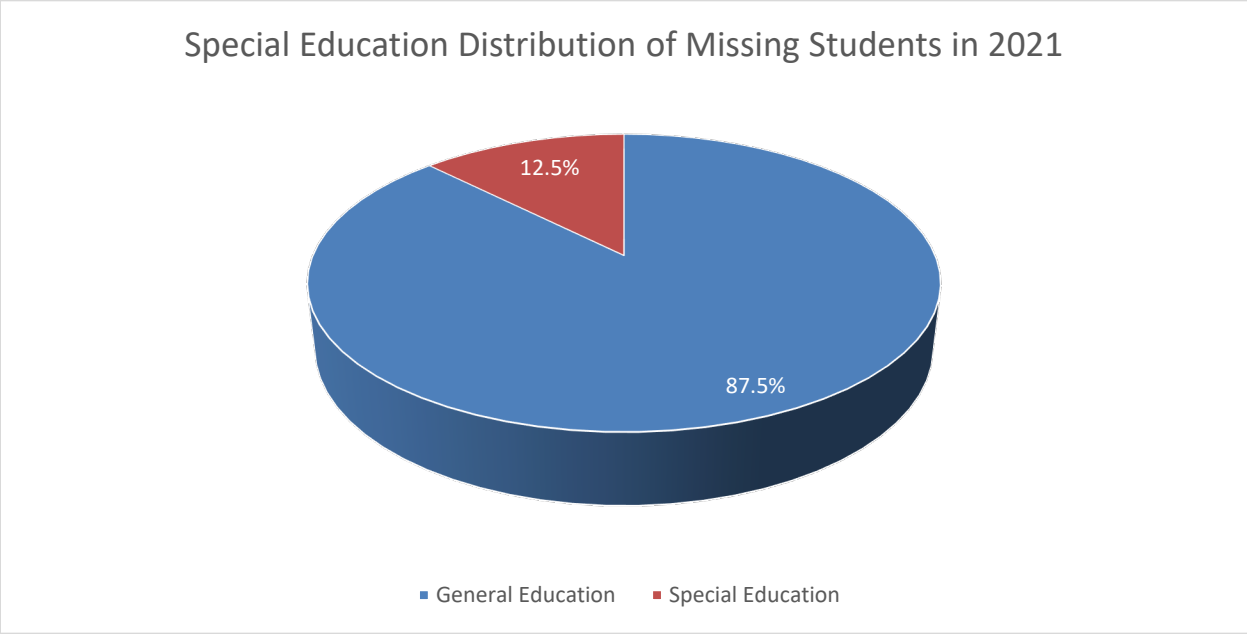


Figure G.3: Special Ed Status Distributions of Missing vs. Participating Students on RISE



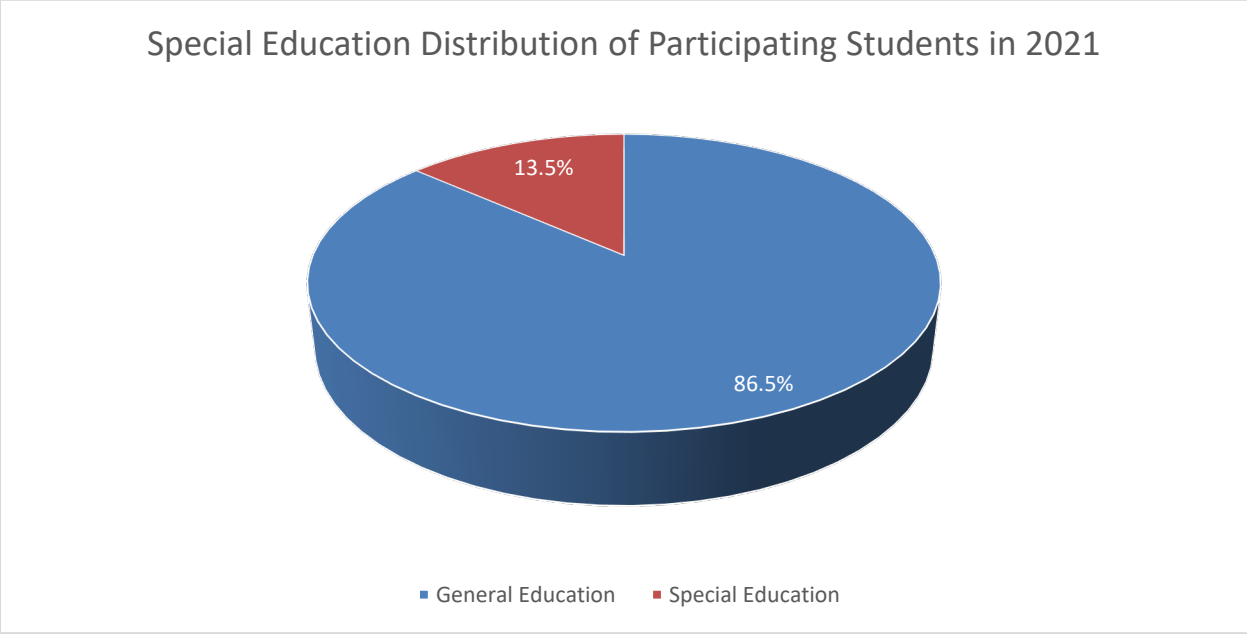
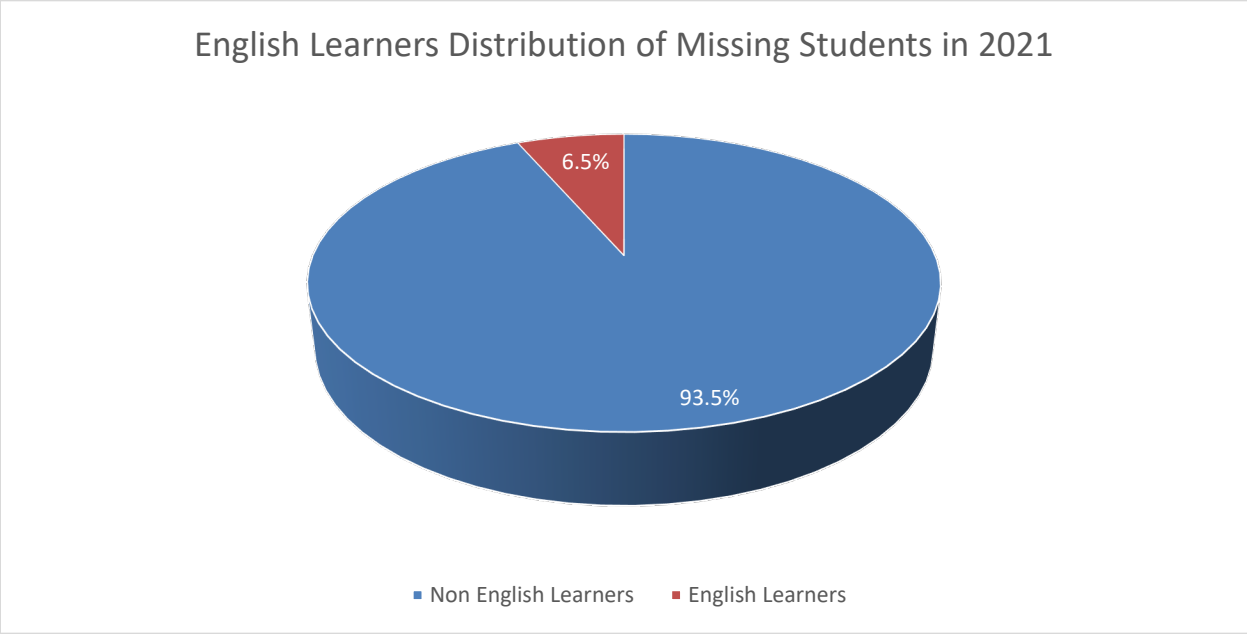


Figure G.4: EL Status Distributions of Missing vs. Participating Students on RISE



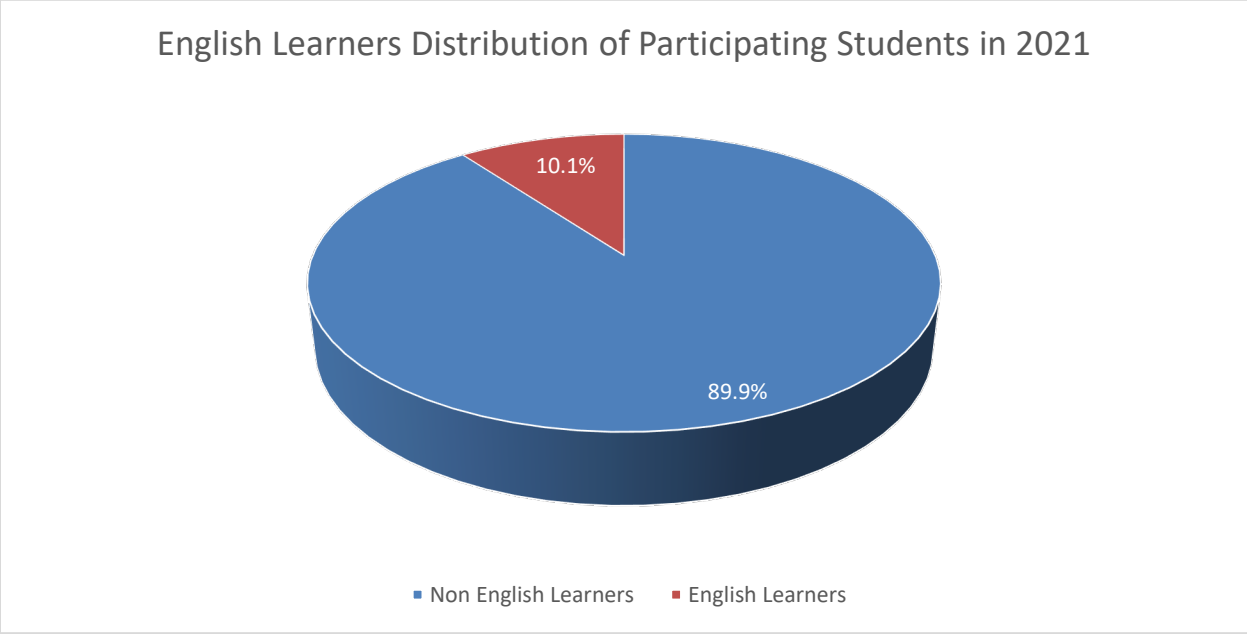
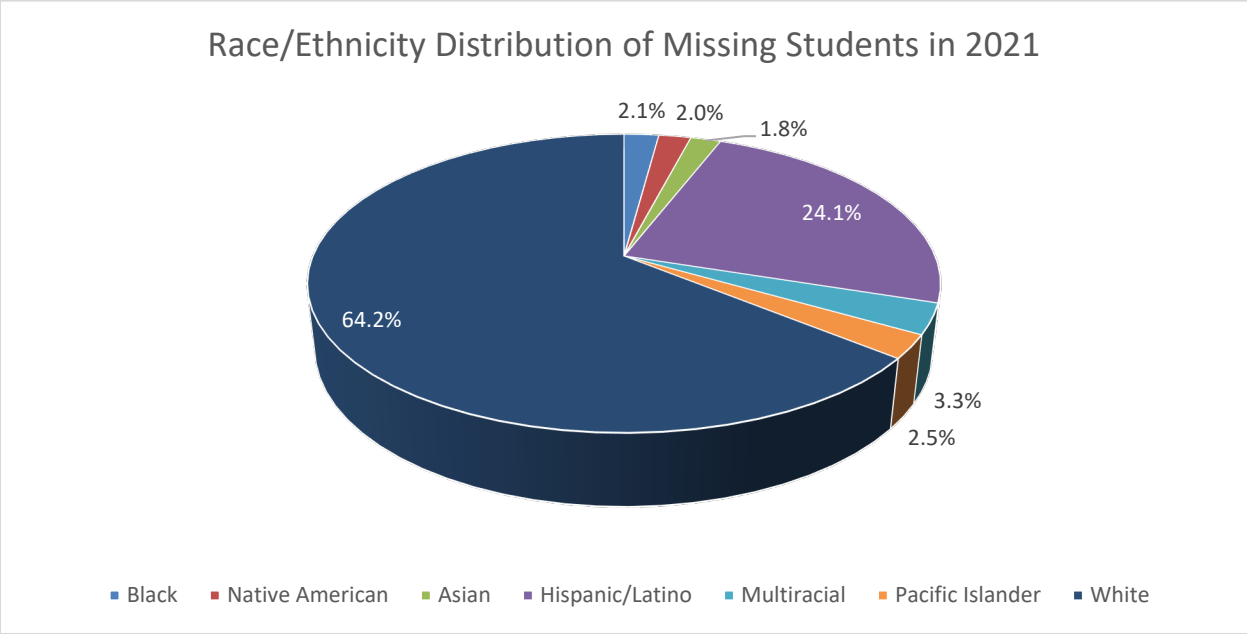


Figure G.5: Race/Ethnicity Distributions of Missing vs. Participating Students on Utah Aspire Plus



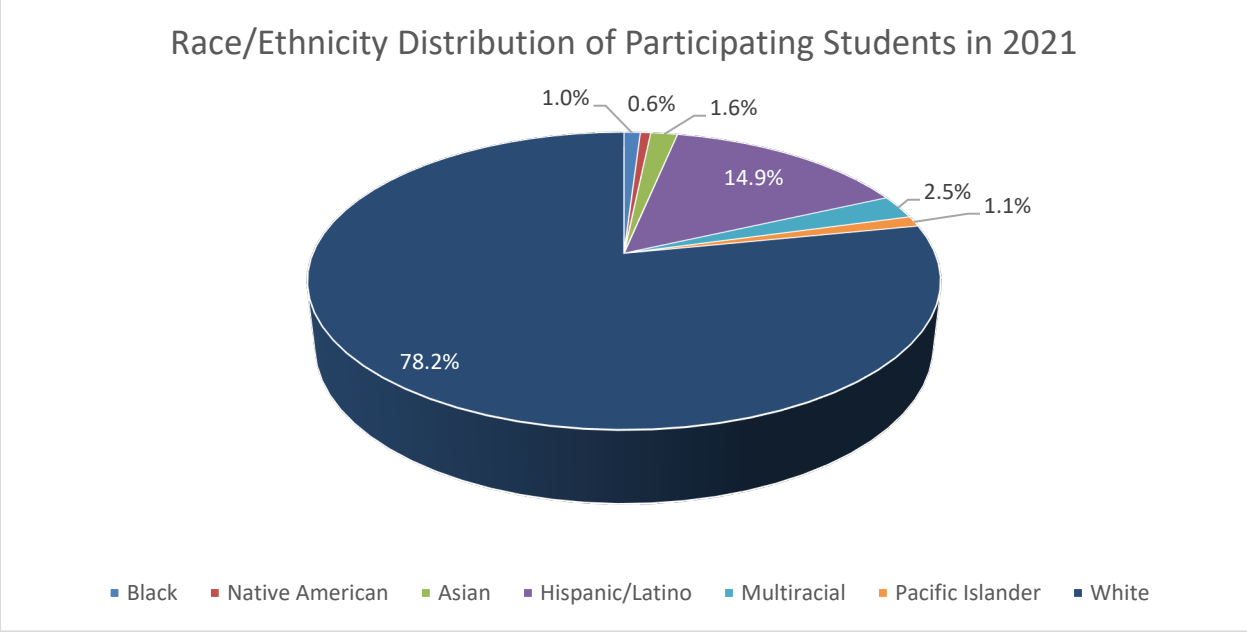
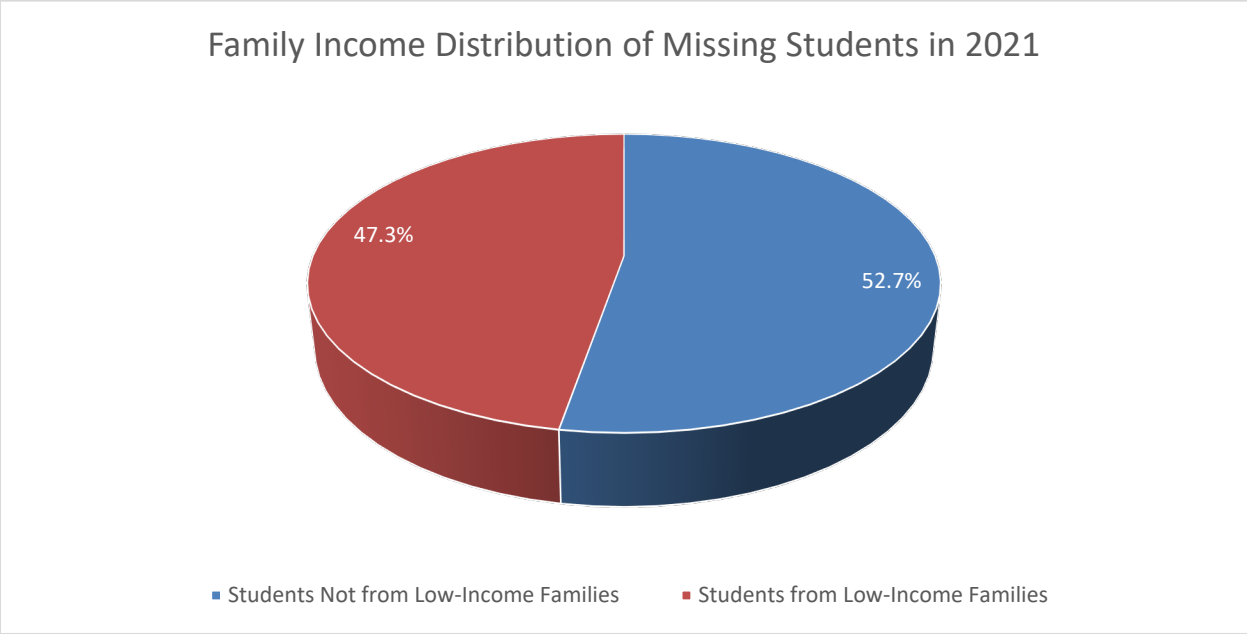


Figure G.6: Family Income Distributions of Missing vs. Participating Students on Utah Aspire Plus in 2020-2021



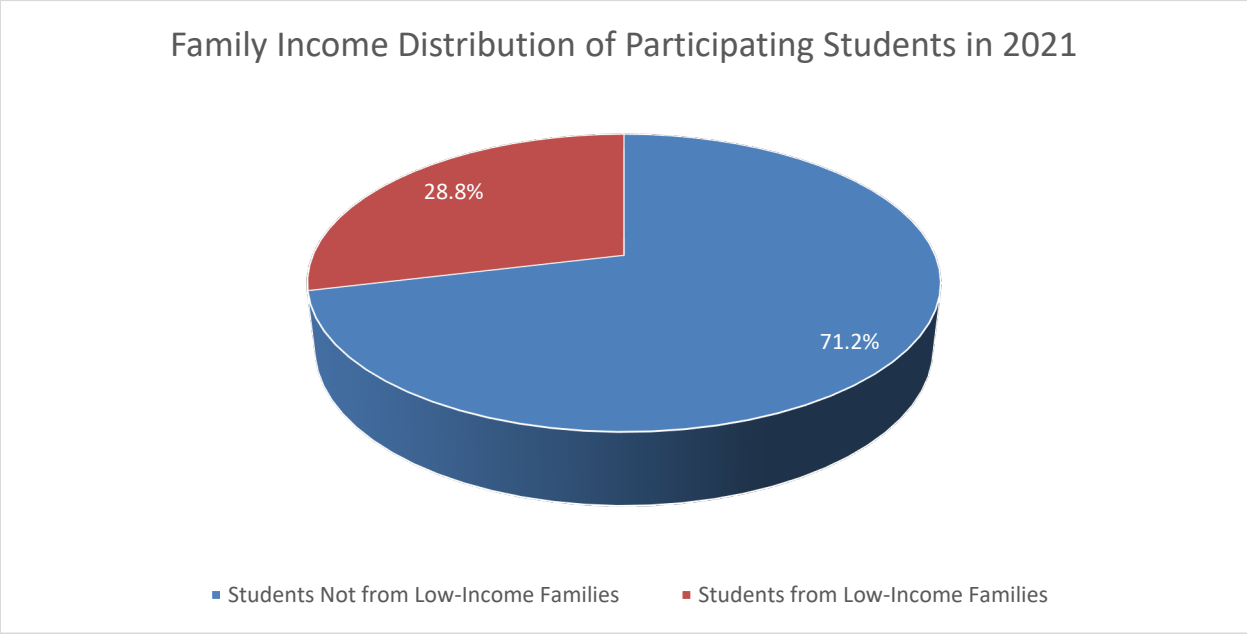
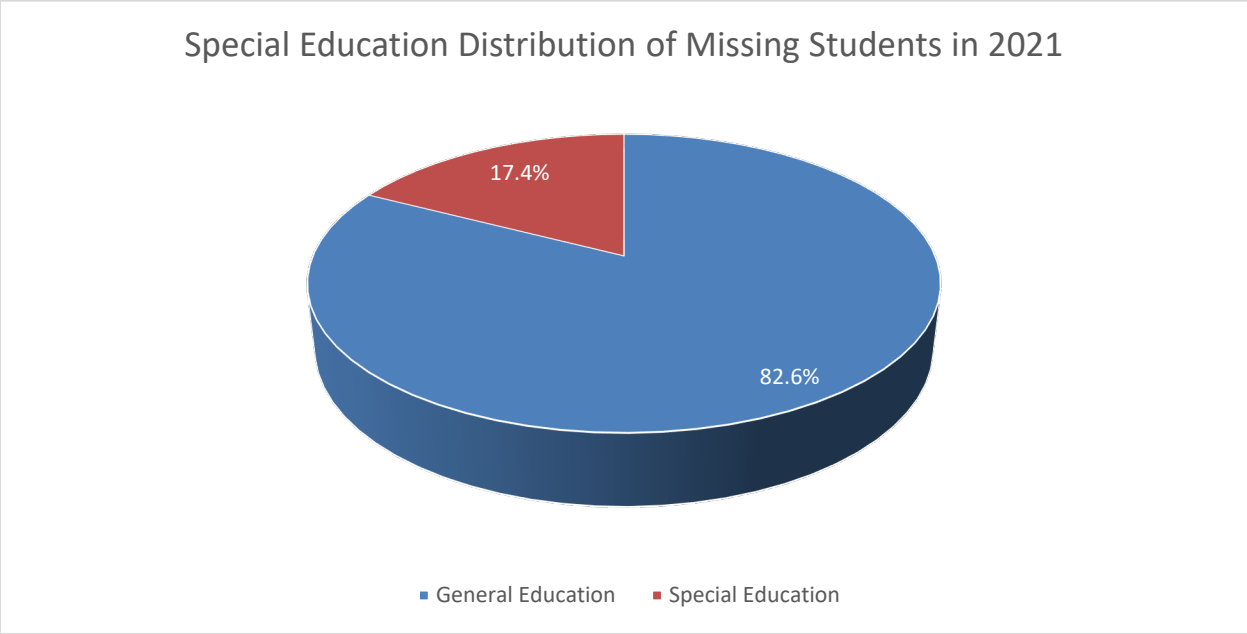


Figure G.7: Special Ed Status Distributions of Missing vs. Participating Students on Utah Aspire Plus



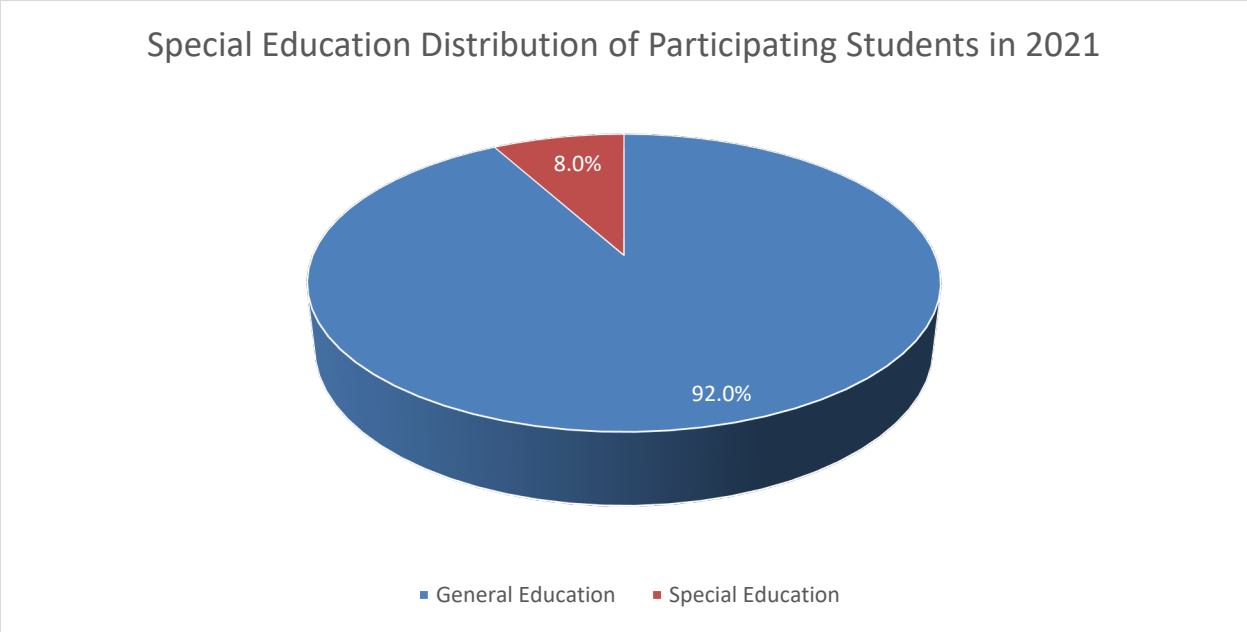


Figure G.8: EL Status Distributions of Missing vs. Participating Students on Utah Aspire Plus