



**Kansas Assessment Program
COVID-19 Effect on Learning
Environment, Opportunity to Learn,
and Assessment
2020–2021 Technical Report**

January 2022

University of Kansas, Accessible Teaching, Learning, and Assessment Systems

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I. Executive Summary

On March 17, 2020, Kansas schools were closed for the remainder of the school year because of the COVID-19 pandemic. Starting in academic year 2020–2021, the Kansas State Department of Education allowed a new learning mode in response to the pandemic: remote learning. During the 2020–2021 school year students could participate in different learning modes: on-site, remote, and hybrid (a combination of on-site and remote). Several surveys were administered during the year to collect contextual data, including information on learning environment and opportunity to learn (OTL). Moreover, results from the administration of 2021 Kansas Assessment Program (KAP) summative assessments were used to evaluate students' achievement for this year. The 2019 KAP operational forms were administered in 2021 for the statewide summative assessment to evaluate student achievement including possible effects of the pandemic while controlling for known properties of the test. The purpose of this research report is to summarize survey and assessment data and to investigate the effects of the COVID-19 pandemic on learning environment, OTL, and achievement.

It is important to note that on average across grade levels, approximately 7% of enrolled students did not participate in the KAP summative assessments this year. With decreasing enrollment numbers in lower grades in 2021, the actual tested sample is even smaller than in previous years in lower grades. While efforts were made to evaluate predicted performance of students who did not test in spring 2021 summative assessments, it is unknown how those students would have actually performed had they tested. Furthermore, while educator participation rates on learning-environment surveys and remote-learning study was high, some OTL surveys did not have high educator response rates. **Thus, the findings presented in this report are not representative of the full Kansas educator and student populations.** The main findings described in this report, based on the available data, are summarized below.

- The learning environments were very similar across districts. The most common learning environment was on-site learning. In most districts, only a small percentage of students participated as fully remote learners; this percentage decreased steadily from the first to the third quarters.
- For students who participated in remote learning, student engagement and a lack of parental support were challenges throughout the school year. When expressing their impression about student remote-learning experience, less than half of educators responding to the fall and spring OTL surveys indicated that most or almost all students who received remote instruction were actively engaged, and approximately one-third of educators reported that all or most of their students who received remote instruction had adequate family support for remote learning.
- Via surveys and focus groups, educators indicated student groups that may have been most affected by disruptions in instructional conditions, including students with low socioeconomic status, special education students, and students without an Individualized Education Program but who needed extra support (i.e., at-risk students), English learners (ELs), and students from rural areas lacking good Internet connection. Educators also

indicated the need for additional support in 2022 to address learning loss and gaps, student behavioral issues, and social-emotional factors.

- COVID-19 affected the KAP summative participation rate. The average participation rate for the whole state decreased in 2021 by 5% across grades and subjects. Some elementary grades (grades 3 and 4) also experienced a decline in overall enrollment. Because enrollment number was used to calculate the participation rate, decreasing in enrollment number in lower grades indicated an even smaller number of tested students compared with previous years in lower grades. Lower testing-participation rates were seen for Black students and in school districts in large cities (e.g., Kansas City, Lawrence, Topeka, Wichita). The district demographic distribution also indicates school districts in large cities have more Black students. Enrollment and participation rates should continue to be monitored in 2021–2022.
- The mean scale score for the whole state decreased in 2021, across all subjects and grades except grade-11 science. Mathematics experienced a greater decline in performance in 2021 compared to English language arts and science (the average effect size of the mathematics mean scale-score decrease is 0.14). After controlling for changes in participation across years, larger decreases in 2021 performance were seen for students who were Native American, Black, or Hispanic, ELs, and students with disabilities, than in other student groups.
- Learning mode affected assessment results, especially in school districts with higher poverty percentages. More in-person learning correlated with higher district assessment participation rates and performance. School districts with less in-person learning in 2020–2021 may need additional resource support in future years to ensure participation and performance decreases are addressed.

II. Introduction

On March 17, 2020, after consulting with the Kansas State Department of Education (KSDE), the Kansas State Board of Education, the Kansas Association of School Boards, the Kansas School Superintendents Association, United School Administrators of Kansas, and the Kansas National Education Association, Governor Laura Kelly issued an executive order to close Kansas schools because of the COVID-19 pandemic. Later, all planned 2020 statewide summative assessments were canceled. In the following academic year, 2020–2021, KSDE allowed a new learning mode in response to the COVID-19 pandemic: remote learning. Remote learning approximated the on-site, classroom-learning experience and was available to regularly enrolled students. Remote learning also was paired with a daily call to each student from a local teacher. Thus, during 2020–2021 students could participate in different learning modes: on-site, remote, and hybrid (a combination of on-site and remote). Each school district was responsible for developing their own learning plans for their schools. At the beginning of the academic year, KSDE published [*Navigating Change: Kansas' Guide to Learning and School Safety Operations*](#) to help school districts respond to the COVID-19 pandemic. The document provided guidance and key considerations for instruction and multiple learning-environment options. The guidance and options were aimed at helping districts make contingency plans for instruction and different learning modes. In an effort to collect information about students' learning environments and opportunity to learn (OTL), several voluntary surveys were administered to teachers, curriculum coordinators and districts throughout the 2020–2021 academic year.

In preparation for the spring 2021 summative statewide testing window, Accessible Teaching, Learning, and Assessment Systems (ATLAS), which delivers KAP assessments, worked closely with the KSDE and the Kansas Technical Advisory Committee to develop a plan to meet the needs of KSDE and help evaluate the impact of the pandemic on student achievement to the degree possible. As such, the decision was made to administer the 2019 KAP summative operational forms in 2021 for the statewide summative assessment. The purpose of using 2019 forms in 2021 was to evaluate the effect of the COVID-19 pandemic on students' achievement while controlling for known properties of the test. Also, only on-site testing was allowed to help keep the test administration condition stable across years and maintain security of the test content. Remote testing was not available. Students learning remotely were asked to come to school for testing. In some cases, students who were learning remotely because of the COVID-19 pandemic and were unable to attend the on-site testing were assigned a special circumstance (SC) code to be exempt from testing. The assignment of this SC code for students had to be approved by KSDE. To allow for additional classroom instructional time prior to testing, the 2021 KAP testing window was postponed for 2 weeks, beginning April 1, and continuing through May 18, 2021. However, the length of the testing window did not change across years.

Important Note on the COVID-19 Pandemic

The 2020–2021 academic school year was significantly impacted by the COVID-19 pandemic. Following complete school and district closures and halting of assessment administration in the spring of 2020, the reopening of schools in fall 2020 was characterized by variations of remote, in-person, and hybrid instructional models both within and across states. In many states and districts, the degree to which these instructional models were utilized changed over the course of the school year and was dependent on multiple factors including COVID-19 case counts, district size, ages of students within schools, local policy, student needs, and parent choice. Although state and local education agencies made every effort to ensure all students had access to instruction and instructional materials regardless of learning environment, it is well acknowledged that changes to learning inevitably occurred during the 2020–2021 academic year.

On February 22, 2021, in response to the COVID-19 pandemic and the disruption caused by the pandemic on student learning, the United States Department of Education (USDoE) offered states waivers pertaining to Every Student Succeeds Act (ESSA) accountability, school identification, and related reporting requirements for the 2020-2021 school year. On June 29, 2021, the USDoE approved Kansas’ request to waive the ESSA accountability, school identification, and related reporting requirements for the 2020-2021 school year.

II.1. Purpose

The purpose of this research report is to summarize the teacher, curriculum coordinator, and district survey data as well as achievement assessment data and to investigate the effect of the COVID-19 pandemic on student learning and achievement. The intended audience included test coordinators and administrators, curriculum coordinators, teachers, policy makers, and other educators in Kansas, who were interested in learning more about the impact of the COVID-19 pandemic on education.

The achievement data used in this report were from the KAP summative assessments in English language arts (ELA), mathematics, and science. For more information about the 2021 KAP summative assessments, including form construction and evidence of technical adequacy, please see the [2021 KAP Technical Manual](#).

II.2. Research Objectives and Questions

This research report has three main research objectives: evaluate the impact of the COVID-19 pandemic on students’ learning environment and OTL; evaluate the impact of the pandemic on assessment administration, participation, and achievement results; and evaluate the relationship between students’ learning environment, OTL, and achievement. Several research questions were investigated within each objective.

Because of the pandemic, student instruction likely differed in 2020–2021 compared to other years. We may expect variability across districts, within districts across time, and across students within a district. National organizations and technical experts recommended that states collect

data on learning environment and OTL as part of their large-scale assessment programs during the COVID-affected year (e.g., Dadey & Betebenner, 2020; Marion, 2020). To evaluate the impact of COVID-19 on learning environment and OTL in Kansas, we investigated three research questions related to the first objective:

1. How did students' learning environment and OTL vary among Kansas districts in the 2020–2021 school year?
2. How did students' learning environment and OTL change over the course of the year?
3. Which groups of students and areas may need future support to mitigate educational disruptions experienced this academic year?

To evaluate the impact of the pandemic on assessment administration, participation, and achievement results, four research questions were specified as follows:

1. How did student enrollment and participation in 2021 KAP summative assessments compare to that of previous years?
2. How did the statistical properties of items on 2021 KAP summative assessments compare to those of previous years?
3. How did students' KAP summative performance in 2021 compare to that of previous years?
4. How did the COVID-19 pandemic affect students' KAP summative testing environments in 2021?

Finally, we were interested in the relationship between learning environment, OTL and assessment results. The research questions related to the third objective are:

1. How were learning environment and OTL related to student participation in 2021 KAP summative assessments at the district level?
2. How were learning environment and OTL related to students' KAP summative performance at the district level?

In this report, we first introduce the data collection methods, followed by the analyses we used to answer the research questions. Then we present the results from the analyses. Next, we summarize our findings for the research objectives and describe the limitations of the results. Last, we use those findings to make some recommendations about how to interpret the results of this research report.

III. Data Collection Method

Several surveys were administered to Kansas educators to better understand learning environment and OTL in different districts. These surveys were developed and administered by multiple organizations to serve their organizational needs. Information from the surveys can provide contextual data for studying the impact of COVID-19 on learning environment and OTL. These surveys also collected information on community-level indicators such as urban-centric locale and broadband Internet access to provide additional contextual information. Focus-group interviews were conducted to collect feedback from educators on learning environment, OTL, and about groups of students needing future support. Results from KAP summative assessments were used to evaluate student achievement. In this section we describe each measure or tool used in this research.

III.1. Learning-Environment Surveys

KSDE's Division of Fiscal and Administrative Services developed and distributed a quarterly learning-environment mandatory survey (see [Appendix A](#)). The surveys, which were completed by a district contact person, were designed to generate data useful to the work of KSDE, the Kansas Department of Health and Environment, and the Kansas legislature. Survey items focused on instructional practices during COVID-19 (e.g., remote, hybrid, on-site); the systems and resources in place to support instruction (e.g., livestreaming, on-site special education, other remote-learning resources); and how and when the learning environments changed during the quarter (e.g., percentage of students remote and hybrid, by week and building type). The first-quarter survey also included items on mask-usage policies. The first-, second-, and third-quarter surveys were administered to all 286 school districts¹.

III.2. Opportunity-to-Learn Surveys

ATLAS developed and administered voluntary educator and curriculum-coordinator surveys on instructional conditions and student OTL ([Appendix B1](#) and [Appendix B2](#)). KSDE sent links to the anonymous surveys via educator listservs. Respondents indicated their district but provided no other identifying information unless they volunteered to participate in a follow-up focus group. While there are also methods for collecting student-level data to help interpret assessment results, Kansas data privacy laws and research restrictions did not allow for this option. The teacher survey was administered twice, at the end of the fall and spring semesters. The curriculum-coordinator survey, designed for staff who assist teachers and administrators with developing and implementing curricula and educational programs, was administered once at the end of the spring semester. The survey items focused on teaching schedules, instructional time students received in person and remotely, strategies for remote instruction, student engagement, student access to Internet and devices, and family support for instruction.

The fall teacher survey was completed by 3,061 individuals (~ 8% response rate) representing 259 public districts (91% of 286 districts) and 43 educators from private or unspecified schools. The respondents included teachers, administrators, support staff, and other school professionals. The spring survey was completed by 1,260 educators (~ 3% response rate) representing 78

¹The fourth-quarter survey was not administered.

public districts (27% of 286 districts) and 44 respondents from private or unknown schools. The curriculum-coordinator survey received 117 responses representing 76 districts (26% of 286 districts) and one respondent from a private or independent education organization.

Most respondents to the fall and spring teacher surveys were teachers (91.6% and 92.6%, respectively). Respondents also included administrators (2.2% fall, 2.1% spring), support staff (2.1% fall, 1.6% spring), and other educators (4.1% fall, 4.4% spring). In both periods, respondents represented all grade levels and subject areas. Across grade bands K–2, 3–5, 6–8, and 9–12, the average number of years of teaching experience ranged from 7.7 to 12.8 in the fall and from 8.5 to 13.3 in the spring.

The majority of respondents to the curriculum-coordinator survey (80.0%) served as the curriculum coordinator for the entire school district, while 13.0% served one school and 7.0% served multiple schools. The grades that respondents supported for instruction covered all grade levels; a median of 69 teachers during the 2020–2021 school year were supported by respondents.

Table 1 shows educator and curriculum-coordinator survey responses by urban-centric locale. In Kansas, there are more rural districts than districts in nonrural areas. Fall and spring educator-survey responses underrepresented rural districts and overrepresented towns, suburbs, and cities. Curriculum-coordinator survey responses also underrepresented rural districts and overrepresented towns and suburbs but to a lesser extent than did educator-survey responses.

Table 1. Educator and Curriculum-Coordinator Survey Responses by Urban-Centric Locale

Urban-centric locale	Fall 2020 teacher		Spring 2021 teacher		Spring 2021 curriculum coordinator	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Rural	1,120	36.6	407	33.5	61	53.0
Town	1,092	35.7	412	33.9	38	33.0
Suburb	592	19.3	292	24.0	12	10.4
City	209	6.8	105	8.6	4	3.5

III.3 Remote-Learning Study

The remote-learning study was conducted by Regional Education Laboratory Central (REL Central) in fall 2020. REL Central staff reviewed and coded district remote-learning plans in fall 2020 and provided indicators related to district infrastructure (e.g., devices, Internet), instruction (e.g., content delivery, grading, graduation requirements), student support (e.g., office hours, support for social-emotional learning), and parent support (e.g., communication plans, resource provision). The REL Central data set also included other district-level data sources, including population and poverty data (via the American Community Survey), broadband-connectivity data (via the Federal Communication Commission), and urban-centric locale classifications (via

the National Center for Education Statistics). The remote-learning study data set had complete data from 280 public districts (98%) and partial data from six districts (2%).

III.4. Focus Groups

ATLAS staff conducted three focus groups with 17 Kansas teachers—four elementary, seven middle, and six high school—on June 7 and 8, 2021. Teachers were recruited for the focus groups according to the results of the OTL teacher surveys. In those surveys, teachers had been asked to indicate if they were interested in participating in a focus group to share additional information about their experiences during the 2020–2021 school year. Of the 2,796 teachers who responded to the fall 2021 survey, 652 (23%) indicated interest in participating in a focus group. Of the 1,157 teachers who responded to the spring 2021 survey, 195 (17%) indicated interest in participating in a focus group. Focus-group participants were recruited from responses to both surveys. The teacher-survey data were used to narrow the number of volunteers to a pool based on inclusion criteria. The inclusion criteria considered different instructional scenarios and student experiences to create a pool of educators representing a diverse group of teachers regarding instructional scenarios (i.e., in school, hybrid, remote) and student experiences (e.g., different levels of student engagement, family support, Internet access, etc.). After considering inclusion criteria and creating a pool of potential participants, ATLAS staff balanced participants among urban-centric locales (rural, town, suburb, city). For middle and high school groups, ATLAS staff selected participants representing different content areas (English language arts [ELA], mathematics, science, special education, career and technical education, English learners). For the elementary group, ATLAS staff balanced participants among upper elementary and lower elementary grades.

After ATLAS staff selected the pool of focus-group participants, invitations were sent via email, and staff continued balancing the groups as replies were received. The focus groups were convened via Zoom videoconferencing, using a semistructured protocol (see [Appendix C](#)). The calls were recorded and later transcribed with all identifying information of participants removed from the transcriptions.

III.5. 2021 KAP Teacher Survey

The 2021 KAP teacher survey was a voluntary survey designed to gather feedback on test administrators' experience with KAP and its technology during testing. During the spring 2021 testing window (April 1–May 18), ATLAS staff made the survey available to all test coordinators, district or building administrators, curriculum coordinators, teachers, and other Kansas educators who administer KAP. Two questions on the 2021 KAP teacher survey were about KAP testing environment. The first question asked survey takers to indicate how many of their students (none, some, all) tested in alternative settings, such as the cafeteria or gymnasium, rather than traditional settings such as classrooms, computer labs, resource rooms, etc. If they indicated any students had tested in alternative settings, the second question asked them to describe those settings.

The surveys were administered through Kite[®] Survey Solution, and educators accessed it through Kite Educator Portal. To promote participation in this survey, announcement of the opening of the survey were sent to educators via KSDE email distribution lists and Educator Portal. There

were 18,538 test coordinators, administrators, curriculum coordinators, teachers, and other educators in Kansas who were active Educator Portal users. Among those educators, 206 finished the 2021 KAP teacher survey, yielding a participation rate of 1%.

III.6. 2017–2021 KAP Summative Assessment

The KAP summative assessments are for all students in grades 3–8 and high school, except students with significant cognitive disabilities who are eligible to take alternate assessments. The KAP summative assessments measure student achievement in ELA, mathematics, and science. Students take ELA and mathematics assessments every year from grades 3–8 and in grade 10; they take science assessments in grades 5, 8, and 11. The 2021 KAP assessments were on the same reporting scale that was established in 2015 for ELA and mathematics and 2017 for science. The same cut scores to separate students' performance into four performance levels (1, 2, 3, 4) have applied on these assessments across years since 2015 for ELA and mathematics and since 2017 for science. Students achieving at levels 3 and 4 are proficient. For all subjects and grades, the scale score ranged from 220 to 380; the proficiency cut of the scale score was 300. To compare assessment results across years, we used KAP data from 2017, 2018, 2019, and 2021; because testing was canceled in 2020, no summative-assessment results were available. Thus, there is no 2020 KAP data for all trend analyses in this report. For more information about the KAP summative assessments across years, as well as their reliability and validity evidence, refer to the different years' technical manuals published on the [KAP website](#).

IV. Analyses

Different statistical methods were used to analyze the data collected for different research questions. These methods include descriptive statistics, correlation, and regression. A qualitative method, that is, thematic content analysis, was used for the qualitative data collected. This section describes the analyses used to address each research questions.

IV.1. Learning Environment and Opportunity to Learn

To evaluate the impact of the COVID-19 pandemic on learning environment and opportunity to learn (OTL), we examined descriptive statistics and trends in data in the learning environment survey, OTL educator and curriculum-coordinator surveys, and a remote-learning study. We applied thematic content analysis to the focus-group transcripts and summarized the main themes emerging from the focus-group interviews related to learning environment and OTL. We also summarized survey responses and the themes emerging from focus-group interviews related to groups of students and areas needing future support.

IV.2. Assessment Administration and Performance

To evaluate the impact of the pandemic on assessment administration, participation, and achievement results, we first examined student participation rates and performance results for the 2021 test administration. Next, we compared the 2021 assessment data to previous years' data on participation rates, statistical properties of items, and student performance. Finally, we summarized information about KAP testing environments gathered from the teacher survey.

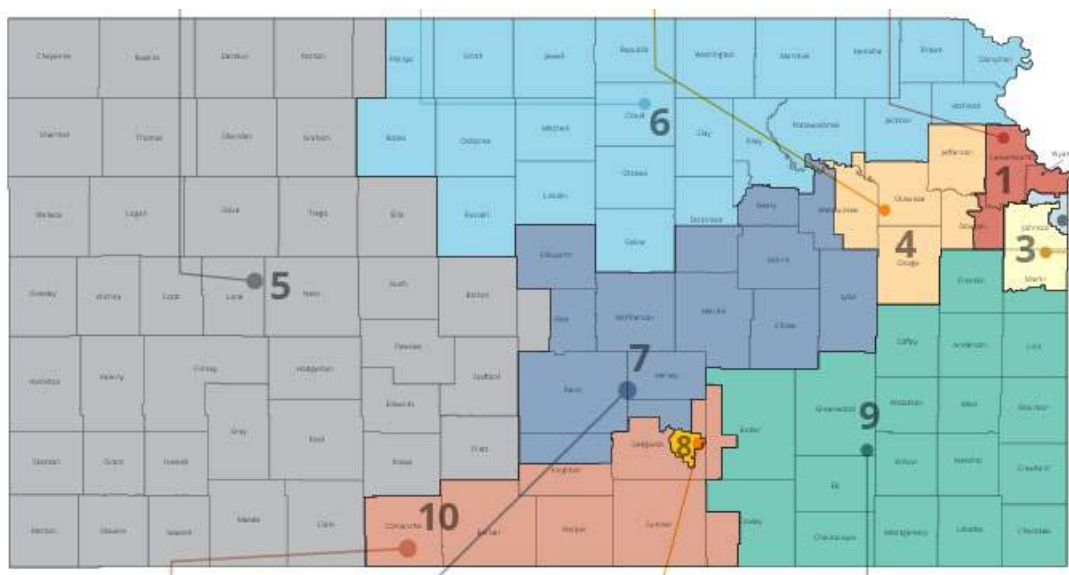
IV.2.1. Enrollment and Participation Across Years

Both the enrollment and the participation of KAP were compared across years. The enrollment comparison across years presented the trend of student population enrolled. On the other hand, the participation comparison across years presented the trend of students tested. Enrolled students are students assigned to a KAP test, and tested students are students receiving a score report. Students received a score report when they did not have any special circumstance codes, finished at least five items in each of the two test sections (each KAP summative assessment has two test sections), and had logged out of the testing platform for the first section.

First, the enrollment number by subject and grade from 2017 to 2021 were compared. Second, to compare the participation across years, two types of rates were calculated: participation rate and match rate (Ho, 2021). The participation rate includes all students tested, and the match rate includes only students who were tested across two years. Any change in participation rates across years may have been caused by changes in enrolled student samples across years, such as students leaving the state and no longer enrolled. The match rate removes the effect of changes of student samples across years by using the same group of students tested in two years and may produce different results than participation rates. The *participation rate* of KAP is calculated as the number of students tested divided by the number of students enrolled. The *match rate*, also called the longitudinally linked match rate, is calculated as the number of students tested in in 2017 and 2019 in the same cohort (e.g., 2017 grade 3 and 2019 grade 5) or in 2019 and 2021 in the same cohort (e.g., 2019 grade 3 and 2021 grade 5) divided by the number of students tested in the first year of the cohort (e.g., 2017 grade 3 or 2019 grade 3).

Participation rate and match rate were calculated by subject and grade for the whole state, for student groups, and for State Board of Education (SBOE) districts. Participation rates were compared from 2017 to 2019 for all subjects and grades. Because of the availability of data, the match rates from 2017 to 2019 and from 2019 to 2021 were compared for grades 5–10 of English language arts (ELA) and mathematics. The student groups included gender, race, ethnicity, English learner (EL) status, and disability status, and were used in all student-group analyses in this report. The 286 school districts in Kansas are distributed among 10 SBOE districts (Figure 1). Some school districts appeared in multiple SBOE districts when school district boundaries reached into more than one SBOE district. This KSDE [document](#) lists the school districts included in each SBOE district.

Figure 1. Map of the 10 State Board of Education Districts of Kansas



Note. Kansas State Department of Education. (2021). Map of the 10 state board of education districts of Kansas. <https://www.ksde.org/Board>

IV.2.2. Statistical Properties of Items Across Years

Because the same test forms were used in both 2021 and 2019, the item statistical properties of the same test form used in those two years were compared to evaluate whether there is an impact from COVID-19 on item statistical properties. In other words, the comparison evaluated whether items had stable statistical properties across administration years. Item statistical properties include classical test theory (CTT) statistics, item response theory (IRT) statistics, and differential item functioning (DIF) statistics. We calculated 2021 item statistics and compared these values with 2019 statistics. For CTT statistics, the delta method (Angoff & Ford, 1973) was used to identify items with a large p value discrepancy across two years. The delta method transforms p values to delta values and uses perpendicular distance greater than 3 between two delta values as the criteria to judge the items as unstable items. For IRT statistics, items on 2021 assessments were freely calibrated using 2021 data. Next, these newly calibrated IRT item parameters were compared with the operational-pool item parameters used for scoring. We used the D-squared method (Wells et al., 2014) that compares the item-characteristic curve (ICC) of

two sets of parameters of the same items to identify items with large discrepancy on the IRT item parameters. The ICC differences can better capture item drift than item parameter differences. The items with a D-squared value greater than 0.05 were judged as unstable items across two years on IRT item parameters. Items identified by both CTT and IRT item statistics were judged as having unstable statistical properties. The logistic regression method was used for DIF analysis of gender (female vs. male), race (White vs. Black²), and EL status (EL vs. non-EL). The Jodoin and Gierl (2001) DIF classification criteria were used to indicate the degree of DIF (i.e., negligible, moderate, large). When the DIF test is significant, large DIF is identified by a Nagelkerke R^2 change greater than .070, and moderate DIF has a Nagelkerke R^2 change between .035 and .070. The numbers of items flagged for moderate or large DIF were compared across two years.

IV.2.3. Performance Across Years

To evaluate performance trends across years, we conducted four types of analyses: person fit, mean scale-score trends, fair-trend analysis, and equity-check analysis. The person-fit analysis compared the rate of students identified with misfit between 2019 and 2021 to see whether the number of students identified as misfitting was affected by COVID-19 (misfit identification criteria are described in the next section). Then we report the mean scale scores of all tested students from 2017 to 2021. The mean scale-score trend included all tested students. Then, to better compare the performance across years without the confounding factor caused by the tested sample changing across years, we used the fair-trend and equity-check methods (Ho, 2021) to study performance across years by controlling the change of tested samples.

IV.2.3.1. Person Fit

Person-fit statistics were calculated to identify students with incongruent response patterns, that is, lack of consistency in one student's response patterns (Reise, 1990). Specifically, each student's standardized person-fit likelihood index was calculated (see Drasgow et al., 1985). The standardized person-fit likelihood index follows a standard normal distribution and uses a 1.96 critical value to judge the misfit level. The student is classified as misfitting when the absolute value of the index is greater than 1.96. We calculated and compared the rate of misfitting students of 2019 and 2021 (number of misfitting students divided by number of tested students) by subject and grade for the whole state, for student groups, and for SBOE districts.

IV.2.3.2. Mean Scale-Score Trend

We calculated the mean scale scores by subject and grade for 2017–2021 for the whole state, for different student groups, and for different SBOE districts and compared them. To compare the mean scale-score changes between 2019 and 2021 across different grades and subjects for the whole state, we also calculated the effect size of mean scale-score differences between 2019 and 2021. For each subject and grade, the mean and standard deviation (SD) of scale scores were calculated by year. Then, to evaluate the relative differences in effect sizes (Cohen, 1988) across

² Only these two groups were used for DIF comparison because the sample sizes of other race groups were not large enough.

subjects, the standardized mean difference (SMD) between 2019 and 2021 by subject and grade was calculated (Equation 1):

$$SMD = \frac{M_{2021} - M_{2019}}{\sqrt{SD_p^2}} = \frac{M_{2021} - M_{2019}}{\sqrt{\frac{SD_{2021}^2(n_{2021}-1) + SD_{2019}^2(n_{2019}-1)}{n_{2021} + n_{2019} - 2}}} . \quad (1)$$

IV. 2.3.3. Fair-Trend Analysis

The fair-trend method (Ho, 2021) seeks to build a fair comparison of students who tested in both 2021 and 2019 through identifying academic peers for grades 5–10 of ELA and mathematics³. *Academic peers* for a student who tested in one year are defined as students who had the same test score two years earlier as this student. For example, the academic peers of grade-3 students with a scale score of 300 in 2019 are all grade-3 students whose scale score was 300 in 2017. The fair-trend method compared the 2021 performance of students tested in both 2021 and 2019 with the 2019 performance of their 2017 academic peers.

To operationalize the procedure of identifying the 2019 performance of academic peers in 2017, we first identified all academic peers in 2017 for students who tested in both 2021 and 2019; those peers' data were used for estimating the prediction. Ho (2021) suggested estimating the prediction equation for 2019 scores using 2017 scores, for example, using 2017 grade-3 scores to predict 2019 grade-5 scores. Next, for students who tested in both 2021 and 2019 in the same cohort in one group (e.g., in one school district), Ho (2021) suggested applying this prediction to academic peers in 2017 for the 2019 performance. To illustrate, let's use a hypothetical student who was tested in grade 5 in 2021; the student also tested in 2019 in grade 3. The student's scale score in 2019 was 300. The student's academic peers are those grade-3 students who scored 300 in 2017. The predicted 2019 scores for this student in grade 5 were based on the academic peers' score (i.e., 300).

To find all academic peers from 2017, we matched the frequency distribution of 2017 scale scores of students tested in 2017 and 2019 with the frequency distribution of 2019 scale scores of students tested in 2019 and 2021. Because 2017 and 2019 mathematics assessments used different test forms and the scale scores obtained by students were different in these two years, the frequency distribution being matched is on bins of scale-score values instead of single scale-score values. The conditional standard error of the measurement was used to define the width of the bin for the distribution. For the bin where there were fewer students in 2017 scale-score distributions, repeated sampling was used to draw enough data from the 2017 distribution for matching the number of students in the 2019 distribution. After sampling was done, the scale-score density functions of 2019 tested students and their 2017 matched samples were plotted for comparison. For estimating the prediction equation, Ho (2021) suggested using the regression method. Therefore, we examined the assumptions of regression using the 2017 scale scores to predict 2019 scale scores based on the data of all academic peers in 2017. To examine the

³ Other grades and subjects will not have any students tested in both 2021 and 2019. For example, students in grade 4 in 2021 did not take any KAP tests in 2019.

regression assumptions, we first plotted the 2017 scale scores against 2019 scale scores by subject and grade to check the relationship between these two scores. Then we compared the R^2 of linear regression and second-order polynomial regression to identify an accurate and parsimonious model. After the regression model was identified, we also examined the regression residuals and standard error of prediction to check the assumptions.

In summary, for every subject and grade, the academic peers' data were first identified through matching. Then, the regression equations for prediction of different subjects and grades were estimated. For students tested in both 2019 and 2021, plug in their 2017 academic peer's score (i.e., their 2019 scores) for the independent variable of the regression equation to predict the 2019 scores of academic peers. The predicted 2019 scores of academic peers were compared with the observed 2021 scores of those students. For the whole state, for student groups, and for SBOE districts, the predicted 2019 and observed 2021 scale-score means were compared.

IV.2.3.4. Equity-Check Analysis

The equity-check method compares the predicted performance of not-tested students with the predicted performance of tested students. The purpose is to compare the performance of not-tested students with tested students had they taken the same test. For the KAP performance comparing across year, we used the equity-check method (Ho, 2021) to compare the performance of students who tested in 2019 but not in 2021 with students tested in both 2019 and 2021. The students who tested in 2019 but not in 2021 are the not-tested students from 2021 for grades 5–10 of ELA and mathematics⁴.

Before we conducted the equity-check method, we summarized the rate of not-tested students from 2021 and their 2019 performance levels. The not-tested rate was calculated as the number of not-tested students from 2021 divided by the number of students tested in 2019. This rate was calculated by subject and grade for the whole state, for student groups, and for SBOE districts. Also, the 2019 performance-level distribution of not-tested students was calculated.

To predict the academic outcomes for not-tested students, we identified their 2017 academic peers. *Academic peers* for a student who tested in one year are defined as students who had the same test score two years earlier as this student. The 2019 performance of those 2017 academic peers is the predicted best-case academic outcomes using the equity-check method. The predicted academic outcomes are called *best case* academic outcomes because they assume the academic learning from 2019 to 2021 for those not-tested students from 2021 were the same as the academic learning for their academic peers from 2017 to 2019. These best-case academic outcomes reflected non-COVID outcomes. The equity-check analysis used the same operational steps for identifying the 2019 performance of academic peers in 2017 that the fair-trend method used, and the prediction equations estimated in the fair-trend analysis were used in the equity-check analysis.

In summary, for every subject and grade, we used the scores of the not-tested students' 2017 academic peers (i.e., their 2019 scores) in the regression equation to predict the 2019 scores of

⁴ No KAP tests were administered in other grades or subjects in 2019. For example, students in grade 4 in 2021 did not take any KAP tests in 2019.

academic peers. These equations are the same regression equations used in fair-trend analysis, These predicted 2019 scores of academic peers are the best-case scores for not-tested students from 2021. We compared the predicted best-case scale-score means of not-tested students from 2021 and predicted scale-score means of tested students in 2021 for the whole state, for student groups, and for SBOE districts.

IV.2.4. 2021 KAP Testing Environments

To evaluate students' testing environments in 2021, descriptive statistics were calculated to summarize teachers' responses to the KAP teacher-survey items regarding their students' testing environments.

IV.3. Relationship Between Learning Environment and Opportunity to Learn, and Assessment Results

To study the relationship between learning environment and OTL, and assessment results, we first identified key indicators from the literature. Then, we studied the relationship between the selected indicators and KAP participation rates, as well as the relationship between the selected indicators and KAP summative-assessment performance. Because all learning-environment and OTL indicators were measured at the district level, all analyses in this section are also at the district level.

IV.3.1. Selecting Learning-Environment and Opportunity to Learn Indicators

Marion's (2020) framework guided the selection of learning-environment and OTL indicators for examining relationships between the indicators and summative-assessment performance. Marion's framework categorizes indicators into four levels. At the state and district levels, Marion recommended indicators on Internet availability and capacity, device availability, presence of and access to high quality curriculum, and presence of and access to high quality professional development. At the teacher and school levels, Marion suggested indicators on instructional practices, such as the proportion of time spent in synchronous vs. asynchronous instruction; the amount of time the teacher interacted directly with students (remotely or in person); and curriculum choices, such as prioritized standards. Marion also recommended indicators at the parent or caregiver level (e.g., parent availability to support learning) and individual student level (e.g., level of engagement).

Following Marion's (2020) framework, Table 2 summarizes the indicators selected from district, teacher, and school levels based on available data from the learning-environment surveys, curriculum-coordinator OTL surveys, and remote-learning study. The OTL teacher-survey data were not used to create indicators because these data were not representative of all KSDE districts.

The remote-learning study provided community-level data on urban-centric locale and poverty level. These community-level indicators were not included in Marion's (2020) framework; however, we used them as moderators when examining relationships between learning environment and OTL, and assessment. The two moderators were rural status and poverty percentage.

Table 2. Learning-Environment and Opportunity-to-Learn Indicators

Marion’s (2020) recommended indicator	Data source	Variable
District		
Internet availability and capacity	RL	Internet connectivity: percentage of school-age individuals within a district’s boundaries who have access to residential Internet speeds greater than 25 megabits per second (i.e., broadband)
Device availability	RL	Student access to device (full, partial, none)
	CC	Students in my district had appropriate devices
Parent		
Parent availability to support learning	CC	Students in my district had family members who were able to support instruction.
Teacher / schools		
Number of meaningful engagements	LE	Weeks in session Number of schedule changes
Learning mode / practices	LE	Percentage of students in hybrid and remote instruction
Curriculum choices	CC	Emphasis of instruction in district
Student		
Student level of engagement	CC	Students in my district were actively engaged in remote instruction. (Likert)

Note. RL = remote-learning study; CC = curriculum-coordinator survey; LE = learning-environment survey.

We first examined each indicator for missing values. Indicators where at least 80% of districts responded to the survey questions were included for analyses examining the relationships between learning environment and OTL, and assessment. For all included indicators, we calculated the descriptive statistics.

IV.3.2. Relationship With KAP Participation

First, we calculated the participation rates by subject and grade for all 286 school districts. Then, we calculated the correlations between different learning-environment and OTL indicators, and the participation rate. The Pearson correlation was used to calculate the correlation of continuous indicators, and the polyserial correlation was used to calculate the correlation of ordinal indicators.

According to Cohen’s (1988) correlation effect size, correlation coefficients around .10 are considered small, coefficients around .30 are considered medium, and coefficients greater than

.50 are considered large. The learning-environment and OTL indicators with medium to large correlations, significant at the .01 level, demonstrated a relationship with participation rate. For these indicators, the moderating effect of community indicator (I_C) on the relationship between participation rate ($Rate_{PR}$) and learning-environment and OTL indicators ($I_{LE,OTL}$) were studied using multiple regressions (Equation 2).

$$Rate_{PR} = \beta_0 + \beta_1 I_{LE,OTL} + \beta_2 I_C + \beta_2 I_{LE,OTL} I_C + \varepsilon \quad (2)$$

The two community indicators were rural status and poverty percentage. Thus, for every learning-environment and OTL indicator that demonstrates a relationship with participation rate, two multiple regressions were estimated for two community indicators. If the coefficient of the interaction term ($I_{LE,OTL} I_C$) was significant at .01, the results show that community indicator had a differential impact on the relationship between the learning environment and OTL indicators, and the participation rate.

IV.3.3. Relationship With KAP Performance

First, we calculated the mean KAP summative-assessment scale scores by subject and grade for all 286 school districts. Then, we calculated the correlations between the different learning-environment and OTL indicators, and the mean scale scores. The Pearson correlation was used to calculate the correlation of continuous indicators, and the polyserial correlation was used to calculate the correlation of ordinal indicators.

The learning-environment and OTL indicators with medium to large correlation, significant at the .01 level, demonstrated a relationship with district mean scale score. For these indicators, the moderating effect of community indicator (I_C) on the relationship between mean scale score (SS) and learning-environment and OTL indicators ($I_{LE,OTL}$) was studied using multiple regressions (Equation 3).

$$SS = \beta_0 + \beta_1 I_{LE,OTL} + \beta_2 I_C + \beta_2 I_{LE,OTL} I_C + \varepsilon \quad (3)$$

The two community indicators were rural status and poverty percentage. For every learning-environment and OTL indicator that demonstrates a relationship with district mean scale score, two multiple regressions were estimated for the two community indicators. If the coefficient of the interaction term ($I_{LE,OTL} I_C$) was significant at .01, the results indicated the community indicator had a differential impact on the relationship between the learning environment and OTL indicators, and mean scale score.

V. Results

This section describes the results from the learning environment surveys, OTL surveys, remote-learning study, and teacher focus groups, as well as assessment results. We also describe the results examining relationships between learning environment and OTL, and assessment performance.

V.1. Learning Environment and Opportunity to Learn

The results in this section describe findings for the first research objective: evaluate the impact of the pandemic on learning environment and OTL. This section is organized by the results for three research questions. See [Appendix D](#) for tables with full results from the fall and spring teacher surveys and [Appendix E](#) for tables with full results from the spring curriculum-coordinator survey. Also, [Appendix F](#) includes a full, detailed report of the focus-group findings, including teachers' comments and feedback.

V.1.1. Variability at District Level

The learning environment and different aspects of OTL were compared across districts to evaluate variability at the district level. In this section, we present district-level variability on learning environment and different aspects of OTL, combining results from the learning-environment survey, OTL surveys, remote-learning study, and focus groups.

V.1.1.1. Learning Environment Variability at District Level

Variability in learning environment among districts was very small. According to the learning-environment survey, in the vast majority of school districts, 25% or fewer students chose to participate as fully remote learners in all three school quarters.

During focus groups, teachers shared the benefits and challenges of remote learning. A few teachers commented that some of their students were successful at remote learning and that some students did better with remote learning than in-person learning. However, many teachers who taught remotely, whether full-time or part-time, noted difficulties. One elementary school teacher said that her students did not understand why learning was important. However, teachers also noted that in-person students in elementary and middle school did not understand why learning was important. Some teachers commented that students were distracted and not engaged during remote learning, and others noted that students who had trouble staying organized had difficulty with remote learning.

Other challenges of remote learning included misuse of the remote-learning platform (e.g., students being inappropriate on camera, cheating, or refusing to turn on cameras), students lacking materials they needed for instruction, and students lacking social connections. Middle school and high school teachers said remote learning was difficult for them because it was hard to connect with the students and recognize whether they were learning or struggling.

V.1.1.2. Opportunity to Learn Variability at District Level

Findings pertaining to different aspects of OTL variability include supports for remote instruction, instructional strategies for remote instruction, Internet connectivity, curricular emphasis, professional development, student engagement, and family involvement.

V.1.1.2.1. Supports for Remote Instruction

The learning-environment survey findings revealed that approximately 49% of districts provided livestreaming classes 100% of the time; 27% provided livestreaming 100% of the time, including other remote-learning services that were not livestreamed; 16% did not provide livestreamed instruction; and 8% of districts did not have any remote learners (i.e., all students were on-site). For remote-learning students not participating in classes via livestream, the most common ways of providing remote-learning services were daily connection by phone or live video call ($n = 152$; 53.1%), digital resources other than virtual schools or programs ($n = 122$; 42.7%), print resources ($n = 118$; 41.3%), and prerecorded minilessons ($n = 115$; 40.2%).

According to the remote-learning study, the vast majority of districts had plans for videoconferencing for student instruction and communication, technical support for students and parents, and use of online repositories of instructional materials. Most districts did not have plans for the use of non-Internet media for instruction or plans modifying nonlicensed staff responsibilities to support instruction. Nearly three-quarters of districts planned to provide students with full access to devices for remote instruction, 15% planned to provide partial access, and 10% did not have plans to provide devices to students. Approximately one-third of districts planned for students to use home-based Internet, 28% planned for community-based Internet, and 18% planned for both. At the time of the remote-learning study (fall 2020), 20% of districts did not have a plan for student Internet access.

Curriculum coordinators reported the ways in which their districts supported technology access and remote instruction in the OTL survey. The most frequent responses included upgrading or replacing devices for existing or ongoing 1:1 device initiatives that allowed each student access to a device (78.1%); distributing mobile hotspots to families (77.7%); and adding or changing licenses of curriculum products for student use (68.8%).

V.1.1.2.2. Instructional Strategies for Remote Learning

One section of the OTL teacher survey probed the strategies used by educators during remote instruction; only educators who had engaged in remote instruction during the reporting period answered these questions. The most commonly reported strategies used during remote instruction were quizzes or other short, structured activities (51.9% in fall, 39.0% in spring); formative assessments or check-ins (50.9% in fall, 39.6% in spring); and live sessions with the whole class (49.5% in fall, 39.4% in spring).

V.1.1.2.3. Internet Connectivity

On the OTL teacher survey, the vast majority of teachers responded that most or almost all students had sufficient Internet connectivity (85.8% in fall, 88.2% in spring) and appropriate devices (94.9% in fall, 94.6% in spring). Table 3 shows district Internet access by urban-centric locale, as measured in the remote-learning study. Not surprisingly, districts in rural communities were more likely to have poor or extremely poor Internet access.

Table 3. District Internet Access by Urban-Centric Locale

	Extremely poor		Poor		Partial		Good		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Rural	40	14.0	38	13.3	40	14.0	78	27.3	196	68.5
Town	1	0.3	5	1.7	18	6.3	45	15.7	69	24.1
Suburb	0	0.0	0	0.0	2	0.7	10	3.5	12	4.2
City	0	0.0	0	0.0	1	0.3	8	2.8	9	3.1
Total	41	14.3	43	15.0	61	21.3	141	49.3	286	100

During focus groups, teachers of students across all three grade bands (K–5, 6–8, 9–12) recognized that some students had issues using the technology and that there were students with no or very poor Internet access. For those students, the lack of reliable Internet was a huge barrier to learning. One teacher also mentioned that a student missed out on paraprofessional support because of the paraprofessional’s connectivity issues.

V.1.1.2.4. Curricular Emphasis

On OTL teacher surveys, educators reported on the amount of time spent on and the relative curricular emphasis of their instruction. In both fall and spring, the majority of teachers (64.7% in fall, 72.2% in spring) reported spending more than 20 hours per week on instruction (either remotely or in person). Regarding the emphasis of instruction, most teachers (63.5% in fall, 71.2% in spring) selected the response option that emphasis of instruction was a relatively balanced mix of competencies and extended standards in *Navigating Change* (KSDE, 2020). Curriculum coordinators answered the same question on curricular emphasis. Similar to teachers, the majority of curriculum coordinators (78.1%) reported that the schools and districts they supported emphasized a relatively balanced mix of competencies and extended standards, similar to a typical school year; 10.5% reported an intensive focus on competencies identified in *Navigating Change* (KSDE, 2020) and less emphasis on extended standards; and 11.4% described other instructional foci, including the standards or extended standards only, prioritized standards, and social-emotional learning.

V.1.1.2.5. Professional Development

According to the remote-learning study, nearly all district plans (90%) described professional development for teachers and/or other staff to support the transition to online learning; however, less than half of the districts planned for collaborative teacher-planning time. Almost three-quarters of the district plans required teachers to provide regular office hours to students; nearly all had plans for some type of social-emotional learning or mental health support for students. However, 56% of district plans required one-on-one meetings between students and teachers. The vast majority of districts planned to provide parent resources and communication plans.

According to the curriculum-coordinator OTL survey, the most common ways in which curriculum coordinators supported teachers in systematic professional development or training

included providing them with technology tools for remote instruction, sharing instructional strategies for remote instruction, and helping teachers address student behavioral issues or social-emotional factors. The most common topics for one-on-one consultations with teachers were helping teachers address student behavioral issues or social-emotional factors; prioritization of content, standards, or competencies for instruction; and helping teachers balance their home and personal-life concerns with their teaching responsibilities.

V.1.1.2.6. Student Engagement

In the OTL teacher surveys, teachers were asked about students' experience with remote learning. The fall results indicated 30.1% of teachers responded that almost none or a few students were actively engaged during remote instruction, 25.4% said almost half of their students were actively engaged during remote instruction, and 44.5% said most or almost all of their students were actively engaged during remote instruction. The response rates were similar in spring: 35.0%, 25.7%, and 39.3%, respectively. Teachers indicating that almost no students were actively engaged in remote instruction were asked to describe, via a write-in answer, what they did to adapt to the situation. Thirty-nine teachers wrote responses in the fall survey, and 24 did in the spring survey. The most common response in the fall survey was to contact the parent ($n = 18$); educators also reached out to the students themselves ($n = 11$). In the spring survey, educators also reported seeking extra contact with students ($n = 10$) and with parents ($n = 8$).

On the fall OTL teacher survey, we examined variability in student engagement during remote learning by considering urban-centric locale, Internet connectivity, and district poverty quantile (Table 4). The chi-squared test indicated significant associations between student engagement and urban-centric locale ($X^2[6, N = 1,911] = 127.44, p < .001$), Internet connectivity ($X^2[6, N = 1,911] = 51.31, p < .001$), and district poverty quantile ($X^2[6, N = 1,911] = 68.81, p < .001$). Teachers from rural and suburban districts, from districts with good Internet connectivity, and from the poorest districts (i.e., the districts with the lowest socioeconomic status) were more likely to indicate most or almost all students were actively engaged in remote instruction.

Table 4. Fall Educator-Survey Responses on Student Engagement by Community-Level Variables

Variable	How many of your students were actively engaged during remote instruction?		
	Almost none or a few (<i>n</i>)	Almost half (<i>n</i>)	Most or almost all (<i>n</i>)
Urban-centric locale			
Rural	189	144	301
Town	284	154	205
Suburb	75	128	237
City	28	61	105
Internet connectivity			
Extremely poor access	40	17	24
Poor access	55	29	48
Partial access	150	83	155
Good access	331	358	621
District poverty quantile			
Most poor	175	204	430
Somewhat poor	91	39	91
Less poor	75	51	74
Least poor	235	193	253

Teachers in the focus group also discussed student engagement during in-person learning. Some noted that COVID-19 safety guidelines were sometimes disruptive. One middle school teacher noted that scheduled mask breaks often interrupted learning. Another middle school teacher said that she did not have enough desks in her classroom because of safety regulations, which caused some students to have to learn through Zoom; another middle school teacher noted that safety guidelines removed the ability to do group work. The constant schedule changes and adaptations were also disruptive. For example, one middle school teacher noted that the school tried to have students stay in one room, with teachers rotating through. Unfortunately, this action was too difficult for teachers to maintain because of the frustration caused by having to repeatedly set up classrooms. One high school teacher said that problems included changing schedules and social friction. Although some teachers said that students learning in person were happy to be back in the classroom, teachers also felt that most students were not focused when they returned to in-person learning and were more interested in socializing with classmates. Transitioning from remote learning to classroom learning was difficult for some students. One high school teacher described her students as “apathetic” during the transitions from fully remote learning to hybrid learning. Another high school teacher shared that, once students experienced time away from school, they did not want to return to in-person learning.

V.1.1.2.7. Family Involvement

On the fall OTL teacher survey, teachers were asked about family involvement in students’ experience with remote learning. Results showed 35.4% of teachers indicated almost none or a

few students had adequate family support, 33.5% of teachers said almost half of their students had adequate family support, and 31.1% of teachers said most or almost all of their students had adequate family support. The response rates were similar in spring: 30.9%, 33.9%, and 35.2%, respectively. Teachers who said that almost no students had family members who were able to adequately support instruction were asked what teachers did to adapt to the situation. Eighty-two educators wrote responses in the fall survey, and 18 did in the spring survey. In the fall, most teachers (47.6%) said they contacted either the students or their parents, arranged meetings, or offered online support. Some (17.1%) said that they worked additional hours or made themselves available after school hours. Other responses included reteaching or offering more intensive help (11.0%), changing expectations (8.5%), creating videos (4.9%), or making home visits (2.4%).

We also examined variability in family involvement during remote learning on the fall OTL teacher survey by urban-centric locale, Internet connectivity, and district poverty quantile (Table 5). For urban-centric locale, $X^2(6, N = 1,658) = 39.52, p < .001$; and for district poverty quantile, $X^2(6, N = 1,658) = 75.7, p < .001$. The X^2 test indicated significant associations on the OTL teacher survey between family involvement, and urban-centric locale and district poverty quantile. Teachers from suburban districts and from the poorest districts (i.e., the districts with the lowest socioeconomic status) were more likely to say that most or almost all students had family members who were able to adequately support remote instruction. There was no relationship between family support and Internet connectivity.

Table 5. Fall Educator-Survey Responses on Family Support for Remote Instruction by Community-Level Variables

Variable	How many of your students had family members who were able to adequately support instruction?		
	Almost none or a few (<i>n</i>)	Almost half (<i>n</i>)	Most or almost all (<i>n</i>)
Urban-centric locale			
Rural	196	181	190
Town	227	182	155
Suburb	91	133	139
City	74	60	30
Internet connectivity			
Extremely poor	25	23	24
Poor	45	32	37
Partial	136	118	98
Good	382	383	355
District poverty quantile			
Most poor	175	240	281
Somewhat poor	77	64	57
Less poor	69	63	45
Least poor	267	189	131

In focus groups, many teachers noted that the level of parental support was a significant factor in the success of remote learners. Teachers’ comments revealed that parents needed to help students stay accountable, on schedule, and motivated. Some teachers reported that parents were supportive and flexible, but others described parents who were not flexible in adapting to changing schedules. Many teachers noted that parents were not involved with their child’s learning and not available to help their child because of working outside or inside the home, but some teachers discussed parents’ excess involvement to the point of completing the child’s work for them, or not giving their child autonomy to self-regulate their own learning. Teachers noted that students often lacked motivational and monitoring support that they needed during remote learning. Students in middle and high school, who may not have needed parental support for learning, sometimes struggled because parents were absent from the home. These students were sometimes charged with taking care of siblings.

V.1.2. Changes Over the Course of the School Year

The changes of learning environment and different aspects of OTL within 2020–2021 academic year were also studied. In this section, we present the changes over the course of school year on learning environment and different aspects of OTL combining results from the learning-environment survey, OTL surveys, remote-learning study, and focus groups.

V.1.2.1. Learning-Environment Changes Over the Course of the School Year

Learning-environment survey results indicated changes to learning environment over the course of the school year. The percentage of school districts with 25% of students or less participating as fully remote learners decreased steadily over the three quarters. Most school districts showed no change (72.4%; $n = 207$) in the percentage of remote learners from the first to third quarters. In a few school districts (2.4%; $n = 7$), the change was greater: from the first to third quarters, four districts went from fully remote to fully in person, and three went from fully in person to fully remote.

On the OTL teacher surveys, educators also responded to items regarding the format of teaching schedules and changes that may have occurred during the survey's reporting period. In the fall, the majority of teachers reported spending most of their instructional time either responsible for simultaneous in-school or remote instruction (44.3%) or teaching entirely remotely (12%). About one-third of responding educators taught all students in school, either on the same schedule (31.5%) or with smaller groups of students on alternating schedules (4.5%). However, in the spring, most teachers spent the majority of their instructional time in schools, either with students on the same schedule (47.7%) or alternating schedules (3.1%).

During the first quarter of 2020–2021, approximately 40% of school districts reported in the learning-environment survey that they required more than three-quarters of their special education students to attend on-site to ensure they received needed services. This percentage increased to more than 50% of districts in the second quarter and more than 54% of districts in the third quarter.

Teachers' comments during focus groups revealed that the changing learning environment caused disruptions and required teachers to be extremely flexible. A few teachers had a more consistent experience because they taught in person for the whole year. However, these teachers still faced challenges because they had to provide instruction for students who were quarantined.

V.1.2.2. Opportunity to Learn Changes Over the Course of the School Year

This section describes changes to instructional strategies for remote learning and curricular emphasis. Supports for remote instruction, Internet connectivity, professional development, student engagement, and family involvement did not change during the year.

V.1.2.2.1. Instructional Strategies for Remote Learning

Fewer used remote instruction in the spring, so instructional strategies changed accordingly. Based on OTL teacher surveys, the percentage of teachers responding across all instructional strategies categories in the spring was lower in general compared to fall. For example, only 39.4% of teacher said they used live sessions with the whole class in the spring, but the rate of live sessions with the whole class was 49.5%.

V.1.2.2.2. Curricular Emphasis

Based on OTL teacher surveys, the percentage of teachers who spent more than 20 hours per week on instruction (either remotely or in person) increased from fall (64.7%) to spring (72.2%). Regarding emphasis of instruction, the percentage of teachers who emphasized a relatively balanced mix of competencies and extended standards increased from fall (63.5%) to spring

(71.2%). About one-quarter (27.6%) of fall respondents reported an intensive focus on competencies from the *Navigating Change* (KSDE, 2020), with less emphasis on extended standards; this percentage decreased slightly in the spring to 20.1%.

V.1.3. Student Groups and Areas Needed Future Support

Approximately 67.6% of curriculum coordinators ($n = 71$) reported at least one student group that was affected more than others by instructional conditions during the 2020–2021 school year. The most frequently reported groups were students from households of low socioeconomic status, special education students, students without an Individualized Education Program who needed support (i.e., at-risk students), English learners, and students from rural areas lacking good Internet connections.

During focus groups, teachers commented on student struggles and academic outcomes. In addition to the issues already described (e.g., challenges faced by students with trouble accessing the Internet, issues stemming from parental support), many teachers noted other student challenges unique to the pandemic, such as trauma from personal situations including family deaths and financial adversity. Teachers noted that students who needed more attention in the classroom, those needing hands-on experiences, and those who had trouble with organizational skills struggled.

During focus groups, teachers also suggested what students and teachers needed to be successful in the next academic year, that is, 2021–2022. Teachers of students in all three grade bands noted that, for students to succeed in the following year, they would need motivation, structure, high expectations, and standards for accountability, attendance, and behavior. One middle school teacher said that students needed to recover ownership of their own learning. Teachers also noted that students would need academic support in closing the gaps in their learning, as well as emotional support. One high school teacher also noted that struggling students who were not on track to graduate because of pandemic-related circumstances needed “a realistic path to be able to graduate.”

Teachers discussed supports that could help them address students’ learning gaps in the coming year. They expressed a need for more paraprofessional support, support for students’ mental health, resources to address learning loss and gaps, time to look at data and plan instruction, and flexibility in the curricula to meet varying student needs. A few high school teachers expressed hope for some consistency in the coming year, allowing students and teachers to have a year of healing. Some high school teachers suggested teaching only the most important state standards.

V.2. Assessment Administration and Performance

This section describes results for the second research objective: evaluating the impact of the pandemic on assessment administration, participation, and achievement results. Assessment participation, item statistical properties, test performance, and administration were compared with those of previous years to answer the four research questions of the assessment research objective. This section is organized according to the results for the four research questions.

V.2.1. Enrollment and Participation Across Years

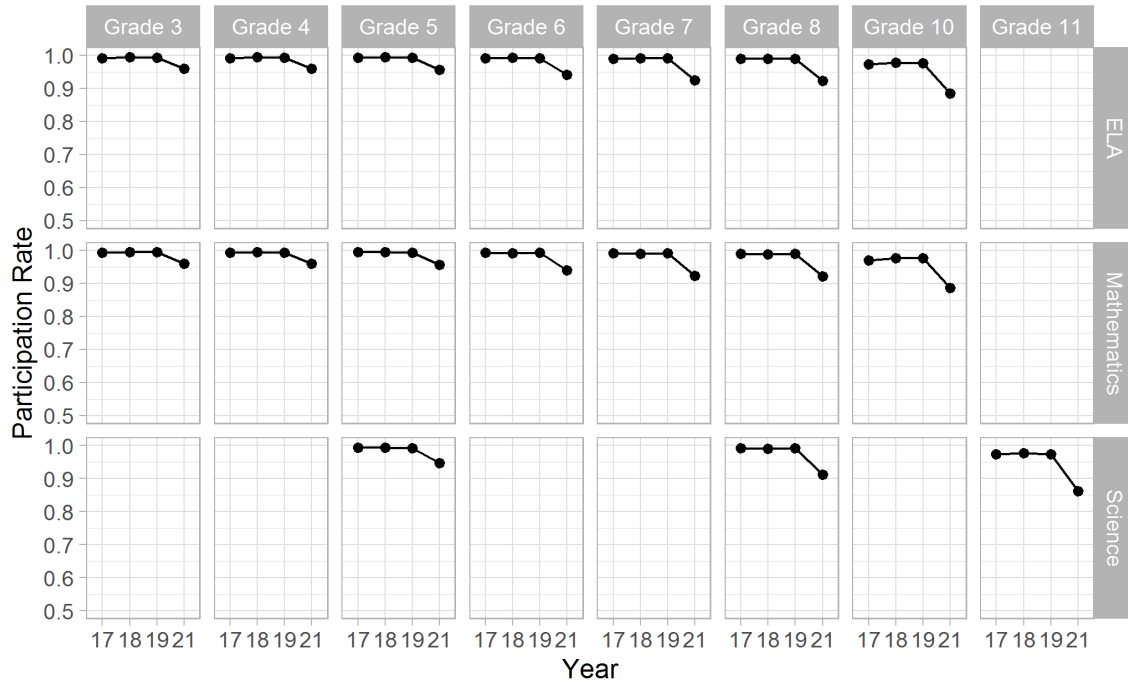
The results on enrollment and participation trends answer the first research question comparing enrollment and participation in 2021 KAP summative assessments to that of previous years. Table 6 presents the numbers of enrolled students (i.e., students assigned a KAP test) from 2017 to 2021 by subject and grade. The numbers were very similar in the higher grades across years; however, in grades 3, 4, and 5, there was a decrease of about 3,000 enrolled students from 2019 to 2021 per subject and grade. When the enrollment numbers in a student cohort were compared (e.g., enrollments in grade 3 in 2017, grade 4 in 2018, grade 5 in 2019, grade 7 in 2021), the enrollment numbers were very stable, with a slight decrease (less than 700 students) in 2021. However, the students tested in grades 3 and 4 in 2021 had not tested in previous years; these two grades showed a large decrease in enrollment compared with previous years.

Table 6. Total Number of Enrolled Students by Subject and Grade for 2017 Through 2021

Subject	Grade	2017	2018	2019	2021
English language arts	3	38,599	37,724	37,316	35,440
	4	38,707	38,600	37,920	35,547
	5	37,761	38,532	38,606	36,735
	6	37,098	37,655	38,537	37,225
	7	37,132	37,018	37,680	38,145
	8	36,990	37,114	37,065	38,275
	10	36,382	36,245	36,973	36,811
Mathematics	3	38,612	37,792	37,346	35,455
	4	38,704	38,653	37,950	35,557
	5	37,773	38,576	38,619	36,743
	6	37,120	37,704	38,561	37,224
	7	37,141	37,064	37,693	38,142
	8	37,010	37,179	37,076	38,286
	10	36,395	36,292	36,994	36,813
Science	5	37,785	38,615	38,632	36,756
	8	37,026	37,203	37,103	38,301
	11	34,929	34,976	34,938	35,527

Figure 2 presents the participation rates (i.e., proportion of students receiving a score report out of students enrolled) for different subjects and grades by year. From 2017 to 2019, the participation rates were about 98% for all grades. There was a decrease in participation rates in 2021, from about 98% to about 93% in lower grades and from about 98% to about 88% in higher grades.

Figure 2. Participation Rates for 2017 Through 2021 by Subject and Grade



The participation rates from 2017 to 2021 for different student groups and State Board of Education (SBOE) districts are in [Appendix G](#). There was a decrease in participation rates among different student groups. The largest decrease was seen among Black students. In elementary and middle schools, SBOE districts 4 and 1 (including school districts in Kansas City, Lawrence, and Topeka) had the largest decreases in 2021, and districts 5, 6, and 9 (including a large number of school districts in western and southeastern Kansas) had slightly decreased participation rates in 2021. In high school, district 8 (including school districts in Wichita) had the largest decrease in 2021; districts 5, 6, and 9 (including a large number of school districts in western and southeastern Kansas) had the smallest decreases in 2021. Detailed demographic distribution of different SBOE districts can be found in the [2021 KAP Technical Manual](#). Districts 1 and 8 have a greater rate of Black student than other districts. SBOE districts with greater decreases in participation rate in 2021 also had more Black students, which is the student group with largest participation rate decrease.

Table 7 shows the ELA and mathematics match rates (i.e., students who tested in the same cohort in 2017 and 2019 and again in 2019 and 2021) by grade for the whole state. Match rates from 2019–2021 were lower than 2017–2019 match rates. These results indicate that for students who tested in 2019, there was a decrease in the rate of students who tested in 2021 compared with the rate from 2017–2019. The rates of decrease were higher in the higher grades, and the average decrease across grades was 6%. The match rates for different student groups and SBOE districts are given in [Appendix G](#). In general, there was a decrease in match rates from 2017–2019 to 2019–2021 in all student groups and all SBOE districts. Black students had the largest decrease in match rates. Districts 5, 6, and 9 had the smallest decrease in match rates.

Table 7. Match Rate of 2017 and 2019 and of 2019 and 2021 by Grade and Subject

Subject	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021
ELA	93%	88%	92%	87%	93%	86%	93%	86%	89%	82%
Mathematics	92%	88%	92%	87%	92%	86%	93%	86%	89%	82%

Note. ELA = English language arts.

V.2.2. Statistical Properties of Items

When evaluating the stability of item statistical properties between 2019 and 2021, the delta method identified no unstable items according to CTT item statistics. Using the IRT item parameters, three items (two ELA items and one mathematics item) were flagged by the D-squared method. No items were flagged using both sets of criteria, suggesting that items' statistical properties were very similar across years. Moreover, in both 2019 and 2021, the same two grade-5 ELA items were flagged for moderate gender DIF favoring male students, and no other items were flagged for moderate or large DIF for gender (female vs. male), race (White vs. Black), or EL status (EL vs. non-EL).

V.2.3. Performance Across Years

Assessment performance was compared across years to evaluate performance trends to answer the third research question of the assessment research objective, i.e., the comparison between 2021 performance and performance of previous years. In this section, we present the results from person-fit analyses, mean scale-score trends, fair-trend analyses, and equity-check analyses.

V.2.3.1. Person Fit

Table 8 presents the percentage of students flagged for misfit by subject and grade for 2019 and 2021. Students flagged for misfit are students with incongruent response patterns, that is, a lack of consistency in one student's response patterns (Reise, 1990). Because a standardized person-fit likelihood index of 1.96 is the cutoff for misfit flagging, we would expect a 5% flagging rate by chance. All flagged rates are close to 5%. In both years and across all grades, mathematics and ELA had higher percentages of students flagged for misfit than did science. When comparing across years, for most subjects and grades the percentages of students flagged for misfit were very similar. The similar percentages indicate no difference in the percentage of students with misfitting response patterns across years. The misfit-flagging rates for different student groups and SBOE districts in 2019 and 2021 are shown in [Appendix H](#). For ELA and science, the differences in misfit-flagging rates among different student groups and SBOE districts were very small within a grade and within a year. For mathematics, Black students and Native Hawaiian and Pacific Islander (NHPI) students had larger misfit-flagging rates than other groups; ELs and students with disabilities had higher misfit-flagging rates than non-ELs and students without disabilities within a grade and within a year. In general, differences in mathematics misfit-flagging rates among different SBOE districts were small within a grade and within a year. When comparing two years, the differences in misfit-flagging rates were very small for most student groups and SBOE districts.

Table 8. 2019 and 2021 KAP Percentages of Students Flagged for Misfit, by Subject and Grade

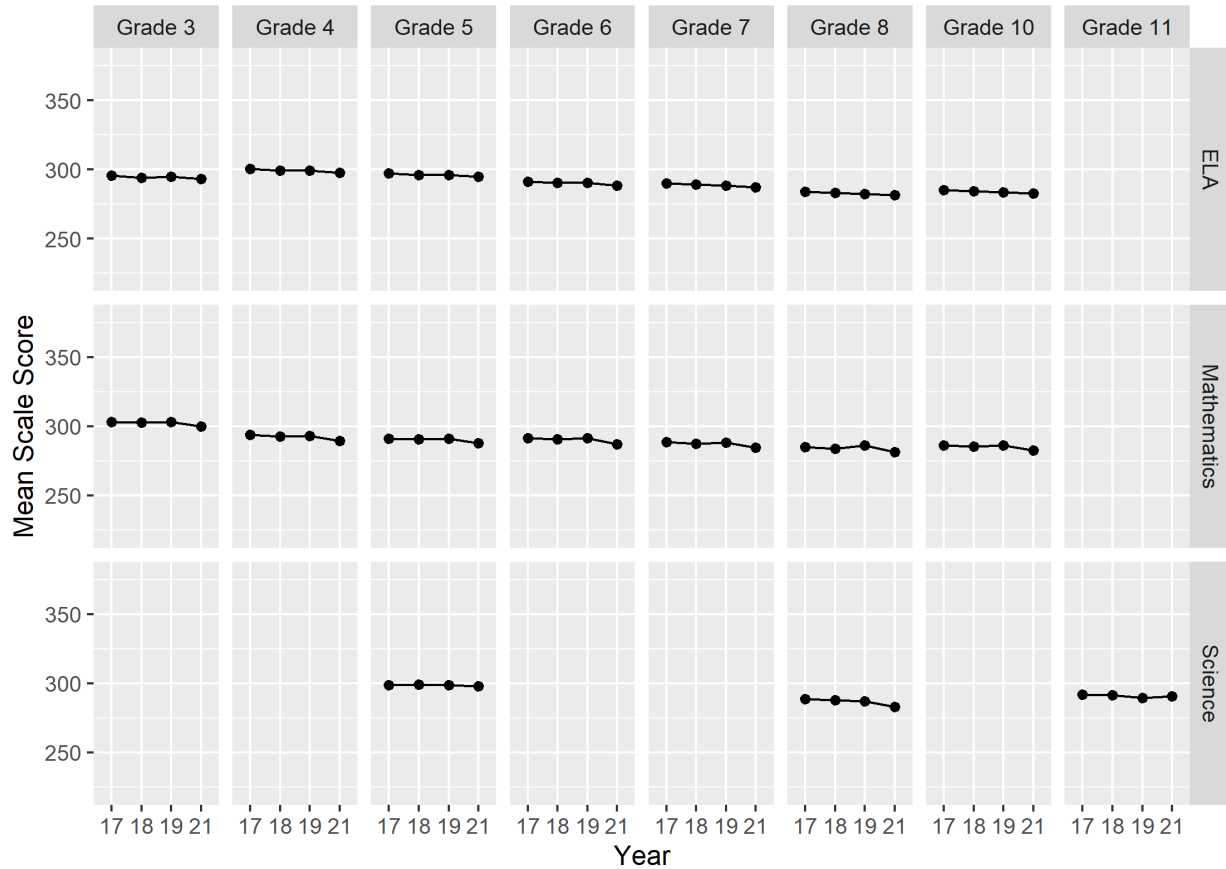
Grade	English language arts		Mathematics		Science	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
3	3	3	4	7	—	—
4	4	5	4	6	—	—
5	4	4	3	5	2	3
6	4	4	4	4	—	—
7	3	3	4	5	—	—
8	5	6	6	6	2	3
10	4	4	6	7	—	—
11	—	—	—	—	2	2

Note. Dash indicates no assessment was administered for that subject and grade.

V.2.3.2. Mean Scale-Score Trends

Figure 3 presents the mean scale score for different subjects and grades from 2017 to 2021. For ELA, there was a slight decrease in mean scale scores from 2017 to 2021. For mathematics from 2017 to 2021, mean scale scores in elementary grades decreased with a larger decrease in 2021; mean scale scores in middle school and high school increased in 2019 but decreased in 2021. For science, there was a slight decrease in mean scales score from 2017 to 2021; one exception was that the mean scale score for grade 11 increased in 2021. In general, with a decrease in participation rate in 2021 in all subjects, mathematics had a larger decrease in mean scale scores than ELA and science.

Figure 3. 2017–2021 Mean Scale Scores by Subject and Grade



The ELA, mathematics, and science mean scale scores from 2017 to 2021 by grade for different student groups and SBOE districts are in [Appendix I](#). With a decrease in participation rate in 2021 student groups, most student groups followed the same pattern as the whole-state samples. All SBOE districts have a decrease in mean scale scores in 2021 but some districts (districts 5, 6, 9) have slightly decreasing and some districts (districts 1, 4, 8) have larger decreasing. SBOE districts that had stable participation rates in 2021 (districts 5, 6, 9) also had more-stable mean scale scores from 2019 to 2021. Districts with large participation-rate changes in 2021 (districts 1, 4, 8) also had more and greater decreases in mean scale scores from 2019 to 2021.

Table 9 includes the standardized mean difference (SMD) of 2019 and 2021 scale scores for each subject and grade. The average SMD by subject is also included. The SMD, as an effect size measure, can be used to compare the magnitude of difference of mean scale scores across subjects and grades. ELA has negative but small SMDs across all grades, suggesting that while 2019 mean scale scores were higher than in 2021, the differences were small (ranging across grades from about 1 to 2 scale-score points higher in 2019). SMDs in mathematics are also negative and considered small in terms of effect sizes but the differences were slightly larger than those in ELA (ranging across grades from about 3 to 4 mean scale-score points higher in 2019 compared to 2021). The grade-5 science SMD is small and negative, similar to the ELA SMDs and the grade-8 science SMD is slightly larger, similar to the mathematic SMDs. Grade-

11 science had a positive SMD (0.04) reflecting that students, on average, scored 1.3 scale-score points higher in 2021 than in 2019. Across grades and subjects, the largest SMD was observed in grades 6 and 8 in mathematics (-0.17), and the smallest SMD was in grade-8 ELA and grade-5 science (-0.03). The subject average SMDs also indicate that the mathematics has the highest average SMD among three subjects.

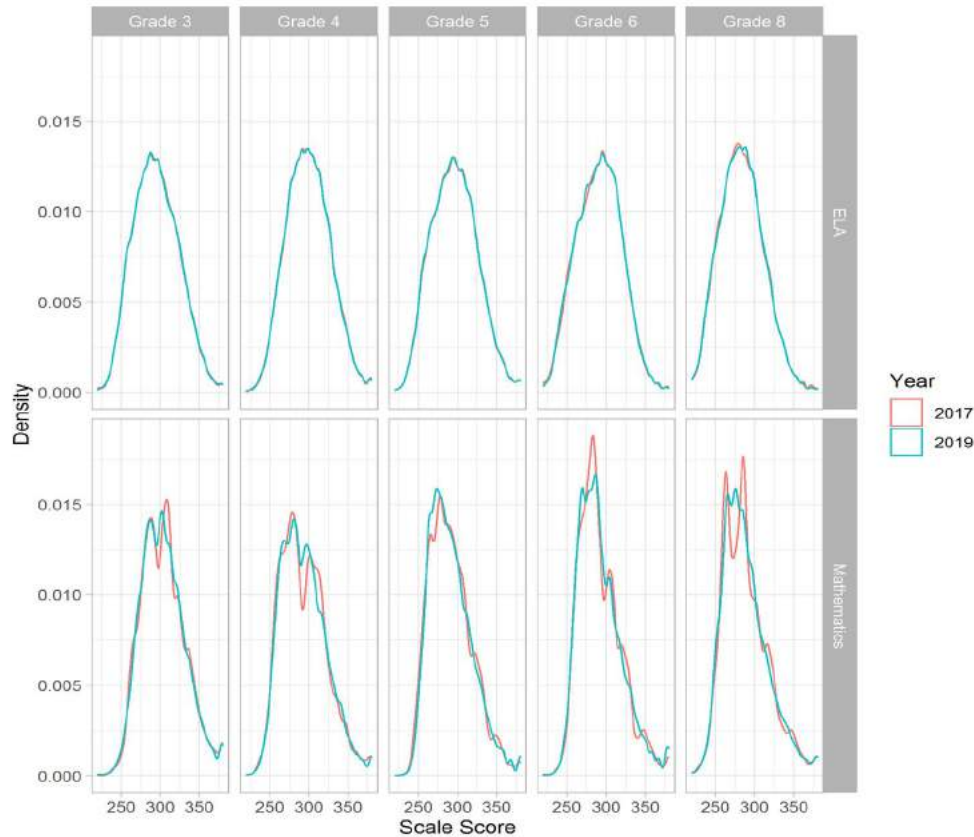
Table 9. Standardized Mean Difference (SMD) Between 2019 and 2021 by Subject and Grade

Subject	Grade	SMD	Average SMD
English language arts	3	-0.06	-0.05
	4	-0.05	
	5	-0.04	
	6	-0.07	
	7	-0.05	
	8	-0.03	
	10	-0.04	
	10	-0.04	
Mathematics	3	-0.12	-0.14
	4	-0.12	
	5	-0.12	
	6	-0.17	
	7	-0.13	
	8	-0.18	
	10	-0.14	
	10	-0.14	
Science	5	-0.03	-0.04
	8	-0.13	
	11	0.04	

V.2.3.3. Fair-Trend Analysis

The subjects and grades for which data were available in 2021 for fair-trend analysis were grades 5–8 and 10 in ELA and mathematics. These students were in grades 3–6 and 8 in 2019. To identify the matched 2017 academic peers’ data, Figure 4 presents scale-score density plots of these students in 2019 and their matched academic peers in 2017. The ELA density plots of the two samples match almost perfectly because the same test forms were used in 2017 and 2019. The mathematics density plots of the two samples show some differences in the middle of the distribution because 2017 and 2019 used different operational forms.

Figure 4. Scale-Score Density Plots of 2019 Students and Their Matched 2017 Academic Peers by Subject and Grade



Regression functions were estimated; the results for checking assumptions of these regression functions are in [Appendix J](#). Scatter plots of 2017 and 2019 KAP scale scores indicate a linear relationship between the scale scores. KAP scale scores had the highest obtainable scale score, 380, and the lowest obtainable scale score, 220. Those highest and lowest obtainable scale scores restricted the range of scatter plots at low and high score distributions. There were more score points at the high score range with range restricted than that at the low score range. The differences of R^2 between linear and second-order polynomial regression using 2017 scale scores to predict 2019 scale scores were smaller than 0.01 for all subjects and grades, indicating that adding the second-order predictor did not significantly change prediction. Because the linear regression model is more parsimonious than a second-order polynomial regression, we used a linear regression model with 2017 scale scores to predict 2019 scale scores. The linear regression residual plots indicate the residuals were symmetrically distributed around 0 in the middle scale-score range. The linear regression residual Q–Q plots indicate the residuals followed the normal distribution because the sample and theoretical quantiles had a linear relationship. The linear regression standard error of prediction plots indicated larger standard errors for the low and high ends of predicted scale scores and smaller ones for the middle-range predicted scale scores, indicating the prediction using these regression functions was more accurate for middle-range scale scores than the low and high ends of scale scores. In general, all standard errors of

prediction were smaller than 0.35. All assumption-checking results indicated the linear regression functions could be used to predict the 2019 scale scores of academic peers in 2017.

The fair-trend method compared the 2019 performance of academic peers in 2017 with the observed 2021 performance of students tested in 2019 and 2021. The comparison using academic peers controlled for the changes in samples of grades 5–10 ELA and mathematics across years. Table 10 compares the fair-trend mean scale-scores for different subjects and grades for the whole state. In this table, the 2021 grade mean scale scores are the observed mean scores for students tested in 2021 and 2019, and the 2019 grade mean scale scores are the predicted 2019 scores of these students’ academic peers in 2017. For ELA, there was a slight decrease in fair-trend mean scale scores from 2019 to 2021, less than 1 scale-score point in most grades. For mathematics, there was a decrease in fair-trend mean scale scores from 2019 to 2021, averaging about 4 scale-score points lower across grades. The fair-trend cross-year comparison pattern of matched samples was similar to the performance-trend cross-year comparison pattern of all tested samples ([Section V.2.3.2](#)).

Table 10. Fair-Trend Mean Scale Scores by Subject and Grade

Subject	Grade	Scale score (<i>M</i>)	
		2019	2021
English language arts	5	295.7	295.1
	6	289.8	288.7
	7	287.9	287.4
	8	282.3	282.0
	10	283.5	283.3
Mathematics	5	291.4	288.1
	6	291.6	287.4
	7	288.8	285.0
	8	287.2	281.7
	10	288.7	283.2

[Appendix K](#) compares ELA and mathematics fair-trend mean scale scores for different student groups and SBOE districts. In general for ELA, most student groups and SBOE districts had a slight decrease in fair-trend mean scale scores from 2019 to 2021. For mathematics, most student groups and districts had the same decrease in fair-trend mean scale scores that the state had from 2019 to 2021. The student groups with larger decreases included Native American students, Black students, Hispanic students, ELs, and students with disabilities; districts 1 and 8 also had larger decreases.

V.2.3.4. Equity-Check Analysis

The equity-check method compared the predicted performance of not-tested students from 2021 (i.e., students who tested in 2019 but not in 2021) with the predicted performance of tested students. First, we summarized the rate of not-tested students. Table 11 presents the rates of not-

tested students by grade for the whole state, for student groups, and for SBOE districts for ELA and Table 12 present the rates of not-tested students by grade for the whole state, for student groups, and for SBOE districts for mathematics. The rate of not-tested students is the percentage of not-tested students from 2021 of all tested students in 2019. For example, ELA grade 3 had a not-tested rate of 12%, indicating 12% of students who tested in grade 3 in 2019 did not test in grade 5 in 2021. For both subjects, the not-tested rate increased as the grade increased, which corresponded to the match-rate results, with higher grades having lower match rates. Across all subjects and grades, the average not-tested rate was 14%. The comparison of not-tested rates of student groups within each subject and grade indicated

- rates were similar between gender groups;
- White and Native American students had the lowest not-tested rates, while Black and NHPI students had the highest not-tested rates;
- the not-tested rates for Black and NHPI students were over 30% in grade 8;
- compared with Hispanic students and ELs, non-Hispanic students and non-ELs had slightly higher not-tested rates in the lower grades and lower not-tested rates in the higher grades;
- and students without disabilities had slightly lower not-tested rates than students with disabilities.

The comparison of not-tested rate of SBOE districts within each subject and grade indicates district 9 had the lowest not-tested rate across all grades, district 4 had the highest not-tested rate in grades 3–6, and district 8 had the highest not-tested rate in grade 8.

Table 11. Percentages of Not-Tested Students from 2021 by Demographic Characteristic, State Board of Education District, and 2019 Grade, for English Language Arts

Group	Grade 3 (%)	Grade 4 (%)	Grade 5 (%)	Grade 6 (%)	Grade 8 (%)
State	12	13	14	14	18
Gender					
Female	12	13	14	14	18
Male	12	13	14	13	18
Race					
Asian	14	18	17	16	20
Black	22	25	27	25	32
MR	15	18	20	19	25
NA	12	14	14	15	17
NHPI	22	31	25	17	36
White	11	11	12	12	16
Hispanic					
No	12	13	14	13	17
Yes	11	13	15	15	23
EL					
No	12	13	14	14	17
Yes	10	13	14	14	23
SWD					
No	12	13	14	13	18
Yes	12	14	16	15	23
District					
1	12	11	12	11	14
2	11	10	16	13	23
3	10	12	14	13	18
4	21	21	21	17	19
5	13	15	17	16	19
6	13	17	18	17	22
7	12	15	15	14	19
8	14	17	18	17	26
9	8	9	8	9	12
10	13	15	16	15	22

Note. NA = Native American; MR = multiracial; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = student with disability.

Table 12. Percentages of Not-Tested Students from 2021 by Demographic Characteristic, State Board of Education District, and 2019 Grade, for Mathematics

Group	Grade 3 (%)	Grade 4 (%)	Grade 5 (%)	Grade 6 (%)	Grade 8 (%)
State	12	13	14	14	18
Gender					
Female	12	13	15	15	18
Male	12	13	14	13	18
Race					
Asian	14	18	18	16	20
Black	22	26	28	26	32
MR	16	18	20	19	25
NA	12	14	13	15	16
NHPI	22	32	24	16	38
White	11	12	13	12	16
Hispanic					
No	12	13	14	13	17
Yes	11	14	16	16	23
EL					
No	12	13	14	14	17
Yes	10	14	15	15	24
SWD					
No	12	13	14	14	17
Yes	12	14	16	16	23
District					
1	12	11	13	11	13
2	11	11	16	13	23
3	10	12	13	13	18
4	21	21	21	18	19
5	13	15	17	16	19
6	13	18	19	18	22
7	12	15	16	15	19
8	14	17	18	17	26
9	8	9	8	9	12
10	13	15	16	15	21

Note. NA = Native American; MR = multiracial; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = student with disability.

For not-tested students, we also compared their 2019 mean scale scores with the whole-state 2019 mean scale scores (Table 13). For all grades and subjects, the not-tested students had a lower mean scale-score compared to the full population. In higher grades, the mean scale-score differences between all students and not-tested students were higher than 5 scale-score points. These results indicate those not-tested students tended to be lower performance students compared to the full population of students.

Table 13. Mean Scale Score of Not-Tested (NT) Students and All Students by Subject and Grade

Subject	Grade 3		Grade 4		Grade 5		Grade 6		Grade 8	
	NT	All	NT	All	NT	All	NT	All	NT	All
English language arts	294	295	297	299	293	296	286	290	276	282
Mathematics	301	303	289	293	288	291	287	292	278	286

To predict the best-case performance of not-tested students, we used the regression equations used in the fair-trend analysis. The equity-check method compared the predicted best-case performance of not-tested students with the predicted performance of tested students in grades 5–10 ELA and mathematics. This comparison is like a comparison of not-tested students’ scores with tested students’ scores if they had taken the same test. Table 14 compares the equity-check mean scale scores by subject and grade. For ELA and mathematics, the predicted best-case performance of not-tested students had smaller mean scale scores than the predicted performance of tested students in all grades. The higher the grade, the larger the difference between mean scale scores. These results suggested that if these not-tested students had taken the same test as tested students, their average best-case performance would have been lower than the average performance of tested students. The not-tested students were determined to be low-performance students according to their 2019 scores. The equity-check results also indicated those not-tested students were low-performance students.

Table 14. Equity-Check Mean Scale Scores by Subject and Grade

Subject	Grade	Mean scale score	
		Not tested	Tested
English language arts	5	294.9	295.7
	6	287.6	289.8
	7	285.6	287.9
	8	278.8	282.3
	10	276.9	283.5
Mathematics	5	289.0	291.4
	6	287.6	291.6
	7	285.5	288.8
	8	283.0	287.2
	10	280.6	288.7

[Appendix L](#) compares the ELA and mathematics equity-check mean scale scores by grade for different student groups and SBOE districts. In general for ELA and mathematics, the predicted best-case mean scale score of not-tested students was smaller than the predicted mean of tested students for most student groups and most SBOE districts, which followed the same pattern as the whole-state results.

V.2.4. 2021 KAP Testing Environment

KAP teacher surveys were summarized to evaluate whether test environment changed in 2021. Among the 206 educators who participated in KAP survey in 2021, three educators did not respond to the first test-environment question. Of the educators who did respond, 159 (78%) indicated that none of their students tested in different environments, 36 (18%) said some of their students tested in different environments, and eight (4%) said that all of their students tested in different environments. For the second question asking educators to describe different testing environments, 43 educators also described the different environments in which their students tested in. Those settings included gymnasium, commons area, cafeteria, multipurpose room, conference room or center, board room, nurse’s office, school district office, library, and district building.

V.3. Relationship Between Learning and Instruction and Assessment

To study the relationship between learning environment and OTL, and assessment results, we describe all learning-environment and OTL indicators. Then, we summarize correlation results with participation rates. Finally, we present correlation results with mean district KAP scores.

V.3.1. Selected Indicators of Learning-environment and Opportunity to Learn

Educators from just 95 districts completed the curriculum-coordinator survey. Too many data are missing from this survey’s indicators, so they are not included in the following analysis. The learning-environment surveys asked districts several questions related to learning-mode indicators (see [Appendix B1](#) and [Appendix B2](#)). These questions asked districts to indicate the percentage of students in each building (elementary school, middle school, high school) who participated in hybrid and remote-learning modes, week by week, from the first quarter through the third quarter. To better summarize the learning-mode data, we used the operational definitions shown in Table 15 to determine elementary, middle, and high school learning modes for each quarter.

Table 15. Learning-Mode Category Definitions

Category of learning mode	Definition
Primarily closed	In one quarter, >50% of weeks not in session
Primarily remote or hybrid	In one quarter, >50% of weeks with >50% of students in either remote or hybrid learning
Primarily in person	In one quarter, $\geq 50\%$ of weeks with $\geq 50\%$ of students in neither remote nor hybrid learning

Thus, all learning-environment and OTL indicators used in the study are Internet, device, and learning mode; community indicators used in the study are rural status and poverty level. Table 16 includes the description, scale of measurement, and summary statistics for all selected learning-environment, OTL, and community indicators. Note that in Table 16 indicator information from two districts is not included. There was not a lot of variability in learning-environment and OTL indicators. Summary statistics indicate that, for most districts, more than 65% of students had high Internet speed and full access to a device, and they met primarily in person. Except for first quarter to second quarter in high schools, there was a slight increase across quarters in the number of districts that provided in-person learning. More districts offered primarily in-person learning in elementary schools than in middle schools, and more districts were primarily in-person in middle schools than in high schools.

Table 16. Selected Learning-environment, Opportunity-to-Learn and Community Indicators

Indicator	Description	Scale	Summary statistics
Internet	Percentage of students with access to residential Internet speeds \geq 25 Mbps	Interval	Min. = 0%, Q25=64.6%, Median = 89.2%, M = 78.6%, Q75 = 99.6%, Max. = 100%
Device	District ensures students have [full, partial, none] access to devices	Ordinal	Full: 208 Partial: 42 None: 28 Missing: 6
Learning mode	Primary learning mode [closed, remote/hybrid, in person] in elementary school of first quarter	Ordinal	Closed: 1 Remote/hybrid: 20 In person: 263
	Primary learning mode [closed, remote/hybrid, in person] in elementary school of second quarter	Ordinal	Closed: 0 Remote/hybrid: 21 In person: 263
	Primary learning mode [closed, remote/hybrid, in person] in elementary school of third quarter	Ordinal	Closed: 1 Remote/hybrid: 11 In person: 272
	Primary learning mode [closed, remote/hybrid, in person] in middle school of first quarter	Ordinal	Closed: 4 Remote/hybrid: 30 In person: 250
	Primary learning mode [closed, remote/hybrid, in person] in middle school of second quarter	Ordinal	Closed: 1 Remote/hybrid: 32 In person: 251
	Primary learning mode [closed, remote/hybrid, in person] in middle school of third quarter	Ordinal	Closed: 2 Remote/hybrid: 22 In person: 260

Indicator	Description	Scale	Summary statistics
	Primary learning mode [closed, remote/hybrid, in person] in high school of first quarter	Ordinal	Closed: 5 Remote/hybrid: 31 In person: 248
	Primary learning mode [closed, remote/hybrid, in person] in high school of second quarter	Ordinal	Closed: 1 Remote/hybrid: 39 In person: 244
	Primary learning mode [closed, remote/hybrid, in person] in high school of third quarter	Ordinal	Closed: 2 Remote/hybrid: 27 In person: 255
Rural status	Rural [Yes, No]	Nominal	Yes: 196 No: 88
Poverty	% of students living in households where family income was below the federally defined poverty level	Interval	Min. = 0%, Q25 = 7.7%, Median = 10.6%, <i>M</i> = 11.2%, Q75 = 14.3%, Max. = 30%

Note. Q25 = 25th percentile; Q75 = 75th percentile.

V.3.2. Relationship With KAP Participation

Table 17 includes the Pearson or polyserial correlations and their significance level among different learning-environment and OTL indicators and KAP 2021 participation rate, by subject and grade. Internet and device access did not have a significant correlation with participation rate in most grades indicating there was no relationship between Internet/device access and participation rate. Although, there is no relationship between Internet and participation rate, the negative correlation between them can be explained by that the urban area usually with high Internet tents to have less students participating KAP. The first-quarter and third-quarter learning-mode indicators did not have a significant correlation with participation rate in elementary grades and had a small to medium (Cohen, 1988) significant correlation with participation rate. The second-quarter learning-mode indicators had a significant medium correlation (Cohen, 1988) with participation rate. This correlation was higher than the correlation in the lower grades. The positive significant medium correlation between learning mode and participation rate indicates that districts with more students learning in person also had higher KAP participation rates.

Table 17. Correlations Among Learning-environment and Opportunity-to-Learn Indicators and Participation Rate by Subject and Grade

Subject	Grade	Internet	Device	Q1 LM	Q2 LM	Q3 LM
English language arts	3	-.13	.23	.32	.33*	.17
	4	-.16*	.12	.32	.41*	.19
	5	-.12	.14	.38*	.34*	.19
	6	-.15	.17	.35*	.46*	.34*
	7	-.14	.05	.33*	.51*	.39*
	8	-.21*	.05	.33*	.44*	.29*
	10	-.15	.08	.32*	.40*	.41*
Mathematics	3	-.12	.20	.32	.32*	.17
	4	-.12	.16	.26	.37*	.18
	5	-.13	.12	.37	.33*	.19
	6	-.15	.14	.36*	.46*	.39*
	7	-.15	.06	.32*	.49*	.29*
	8	-.22*	.09	.34*	.45*	.36*
	10	-.20*	.07	.37*	.44*	.41*
Science	5	-.14	.12	.32	.30*	.17
	8	-.24*	.06	.37*	.48*	.34*
	11	-.26*	.09	.37*	.37*	.40*

Note. Q1 LM = first-quarter learning mode; Q2 LM = second-quarter learning mode; Q3 LM = third-quarter learning mode; * = correlation significant at the .01 level.

Because only the second-quarter learning mode indicator had a significant medium correlation in all grades, the moderating effect of community indicators on the relationship between second-quarter learning mode and participation rate was studied. The rural status interaction terms were

not significant at 0.01 for all grades and subjects indicating the rural status was not a moderator for the relationship between second-quarter learning mode and participation rate. The poverty percentage and second-quarter learning-mode interaction terms were significant at 0.01 at the middle and high school grades, and the slopes for interaction terms were positive, indicating that poverty percentage had a positive moderating effect on the relationship between second-quarter learning mode and participation rate in middle and high school grades. The positive poverty percentage moderating effect means districts with higher poverty percentages had a stronger relationship between second-quarter learning mode and participation rate than did the districts with lower poverty percentages in middle and high school grades.

V.3.3. Relationship With KAP Performance

Table 18 includes the Pearson or polyserial correlations and their significance level among different learning-environment and OTL indicators and mean scale score by subject and grade. Internet, device access, and third-quarter learning mode do not have significant correlation with mean scale score, indicating no relationship between those variables and mean scale score. There was no relationship between Internet access and mean scale score, but the negative correlation can be explained: urban areas usually have both robust Internet access and more households of low socioeconomic status, which tend to have lower performing students. The first-quarter learning-mode indicator did not have significant correlation with mean scale score in most grades and had a small significant correlation (Cohen, 1988) with mean scale score in middle school grades. The second-quarter learning-mode indicators had a significant small to medium size correlation (Cohen, 1988) with mean scale score in most grades. The positive small to medium significant correlation between learning mode and mean scale score indicates that districts with more students learning in person also had higher KAP mean scale scores.

Table 18. Correlations Among Learning-environment and Opportunity-to-Learn Indicators and District Mean Scale Score, by Subject and Grade

Subject	Grade	Internet	Device	Q1 LM	Q2 LM	Q3 LM
English language arts	3	-.15	.05	.12	.22*	.14
	4	-.17*	.09	.12	.17*	.12
	5	-.15	.08	.15*	.14	.03
	6	-.20	-.03	.14*	.20*	.00
	7	-.12	.07	.14*	.19*	.10
	8	-.17*	-.02	.09	.12	.01
	10	-.14	.05	.06	.12*	.05
Mathematics	3	-.13	.04	.14*	.25*	.17*
	4	-.15	.08	.10	.20*	.11
	5	-.17*	.09	.13	.17	.07
	6	-.19*	.01	.15*	.21*	.11
	7	-.10	.00	.15*	.22*	.10
	8	-.09	.01	.08	.19*	.08
	10	-.15	.08	.11	.25*	.11
Science	5	-.16*	.05	.17*	.17*	.08
	8	-.27*	-.03	.11*	.19*	.09
	11	-.22*	.04	.13*	.21*	.21*

Note. Q1 LM = first-quarter learning mode; Q2 LM = second-quarter learning mode; Q3 LM = third-quarter learning mode; * = correlation significant at the .01 level.

Because only the second-quarter learning-mode indicator had a significant medium correlation in some grades, the moderating effect of community indicators on the relationship between second-quarter learning mode and mean scale score was studied. The rural status interaction terms were not significant at 0.01 for all grades and subjects, indicating that rural status was not a moderator for the relationship between second-quarter learning mode and mean scale scores. The poverty percentage and second-quarter learning-mode interaction terms were significant at 0.01 at the middle and high school grades and the slopes for interaction terms were positive, indicating that poverty percentage had a positive moderating effect on the relationship between second-quarter learning mode and mean scale score in middle and high school grades. The positive poverty percentage moderating effect means districts with higher poverty percentages showed a stronger relationship between second-quarter learning mode and mean scale score than did districts with lower poverty percentages in middle and high school grades.

VI. Discussion

VI.1. Learning Environment and Opportunity to Learn

We analyzed multiple data sources on contextual factors affecting students' learning environment and OTL during the pandemic. Most of the data collected on learning environment and OTL were at the district level. The teacher surveys provided some data at the classroom level, but the results were not representative of all Kansas school districts. We describe student groups and areas needing further support.

VI.1.1. Key Findings Related to Variability at District Level

Throughout the school year, most teachers taught a balanced mix of competencies and extended standards, similar to a typical school year. The learning-environment variability among districts was very small. In most districts, no more than 25% of students chose to participate in remote learning. The districts that provided remote learning also provided enough technical support for remote instruction and professional development for teachers to support the transition to online learning. Teachers who did remote instruction tended to use quizzes or other short, structured activities, formative assessments or check-ins, and live sessions with the whole class.

For students who participated in remote instruction, the Internet connectivity of students was mostly sufficient. However, student engagement in remote instruction was identified as a challenge. Less than half of educators responding to both the fall and spring OTL teacher surveys indicated that most or almost all students who received remote instruction were actively engaged. Teachers in the focus groups also cited challenges with student engagement during remote learning. According to data from the OTL teacher survey, students from rural and suburban districts were more likely to be actively engaged in remote instruction compared to other districts.

Also for remote learners, there was a lack of family involvement. According to OTL teacher surveys, only about a third of educators reported that all or most of their students who received remote instruction had adequate family support for remote learning. Levels of family involvement varied greatly across districts. Teachers in suburban districts were more likely to report that students had family members who were able to adequately support instruction than those from rural districts, cities, and towns. An unexpected finding was that educators from the poorest districts were most likely to indicate that most or almost all of their students were actively engaged in instruction.

VI.1.2. Key Findings Related to Changes Over the Course of the School Year

According to the learning-environment survey data about the first three quarters of the school year, only a small percentage of students in most districts participated as fully remote learners; this percentage decreased steadily from the first to the third quarters. In the first and second quarters, less than half of districts required >75% of their special education students to attend on-site. This percentage increased only slightly across quarters, to 54% of districts in the third quarter, suggesting that students who received special education services and who did not attend in-person schooling may need additional resources and support in the coming school year.

Data from the OTL teacher survey suggest that instruction looked more like typical instruction in spring than in fall, but more than half of teachers were still not teaching all students on the same schedule, and a small percentage were teaching only remotely.

VI.1.3. Key Findings Related to Student Groups and Areas Needed Future Support

About two-thirds of curriculum coordinators reported that instructional conditions affected at least one student group more than others during the 2020–2021 school year. Groups identified as needing additional resources and support included low-SES students, special education students, students without an IEP who needed support (i.e., at-risk students), ELs, and students who participated in remote instruction from rural areas lacking good Internet connection.

The curriculum-coordinator survey findings also suggest that teachers needed support in 2021, not only in providing remote instruction, but also in addressing student behavior issues and student social-emotional factors. In the focus groups, teachers expressed the need for more paraprofessional support, support to address students' mental health, resources to help address learning loss and gaps, time to look at data and plan instruction, and flexibility in the curricula to meet varying student needs in coming school years.

VI.2. Assessment Administration and Performance

We analyzed 2017–2021 KAP assessment data, focusing on participation and performance. Before we compared assessment performance across years, we compared the 2021 statistical properties of items with those of previous years. We also investigated the testing settings of 2021 KAP.

VI.2.1. Key Findings Related to Assessment Enrollment and Participation Across Years

In general, enrollment numbers were similar across years for higher grades, with a decrease in lower grades from 2019 to 2021. The average 2021 participation rate was 5% lower than in previous years across all grades and subjects. The match-rate method indicated an average 6% decrease in match rate from 2017–2019 to 2019–2021 across all grades and subjects. Because enrollment number was used to calculate the participation rate, a decrease in enrollment number and participation rate in lower grades indicated an even smaller number of tested students than in previous years. In 2021, Black students had a larger decrease in participation rates than other groups. In 2021, State Board of Education (SBOE) districts 1, 4, and 8 (including school districts in larger, urban areas like Kansas City, Lawrence, Topeka, and Wichita) had a larger decrease in participation rates; districts 5, 6, and 9 (including a large number of school districts in rural areas in western and southeastern Kansas) had a very small decrease or no decrease in participation rates. Thus, we concluded the 2021 KAP student participation decreased slightly for the whole state, with a larger decrease among Black students. Different regions had different participation rate changes: some regions had no changes, while others had larger decreases.

VI.2.2. Key Findings Related to Assessment Performance Across Years

The results indicate that the statistical properties of items did not change: test items behaved similarly between 2019 and 2021. The person-fit results indicate (a) no change in the percentage of students with misfitting response patterns across years, and (b) the percentage of students with misfitting response patterns was low, indicating that most students responded to items as

expected in both 2019 and 2021. In general, the comparison of test results across years indicates the greatest change in 2021 among the three subjects was mathematics performance, with a decrease in mean scale scores. The average effect size for the decrease in mathematics mean scale scores was about 0.14 across grades, which is a small effect size. Most student groups followed the same pattern that the whole-state samples had. Districts with stable participation rates (e.g., districts 5, 6, 9) also had more-stable mean scale scores from 2019 to 2021. Districts with large participation-rate changes (e.g., districts 1, 4, 8) had more and greater decreases in mean scale scores from 2019 to 2021.

Because the participation rate decreased in 2021 and there was an observed change in the tested samples, the fair-trend and equity-check methods separately examined student performance among tested and not-tested students by controlling the change of tested samples. The fair-trend method examined the tested students, (i.e., students tested in both 2019 and 2021). The equity-check method examined the not-tested students, (i.e., students tested in 2019 but not 2021). The fair-trend analysis found ELA had slight decreases and mathematics had larger decreases than ELA in mean average scale scores in 2021. These results indicate the performance trend stayed the same of a fair-comparison sample by controlling the change of tested samples. For both subjects, for most student groups and SBOE districts there was a decrease in fair-trend performance in 2021. Some student groups and SBOE districts had greater decreases than other groups and districts. The student groups and districts with greater decreases include Native American students, Black students, Hispanic students, ELs, and students with disabilities, as well as districts 1 and 8.

The average not-tested rate was about 14% across grades and subjects. The not-tested rate among Black students was higher than in other student groups. District 9 had the lowest not-tested rate, and districts 4 and 8 had the highest not-tested rates. Moreover, not-tested students tended to be low-performing students according to their 2019 KAP performance, especially in the higher grades. The equity-check analysis results indicated that, for all grades in ELA and mathematics, the predicted best-case performance of not-tested students was worse than the predicted performance of tested students. The equity-check results also indicated not-tested students tended to be low-performing students when they had taken the same test as tested students. Most student groups and SBOE districts had the same equity-check comparison pattern as the whole state for both subjects.

In summary, the COVID-19 pandemic appeared to have an impact on students' assessment performance in 2021, especially in mathematics. Some student groups may have been affected by COVID-19-related factors more than other groups, including Native American students, Black students, Hispanic students, ELs, and students with disabilities. Assessment performance was affected more in districts with lower participation rates than in districts with higher participation rates.

VI.2.3. Key Findings Related to Testing Environment

According to the district educators who answered the survey, COVID-19 affected the testing environment of some students, but most students tested in traditional testing environments.

Because of the low response rate, however, we cannot make a conclusion related to testing environment.

VI.3. Relationship Between Learning and Instruction and Assessment

Five learning-environment and OTL indicators were used to study the relationship between learning environment and OTL, and assessment: Internet access, device access, first-quarter learning mode, second-quarter learning mode, and third-quarter learning mode. In addition, two community-level indicators—rural status and poverty percentage—were studied for moderating effects. Among all learning-environment and OTL indicators, second-quarter learning mode had the strongest relationship with assessment results. In second quarter, there was a slightly more variability in learning modes among districts compared to first and third quarters. Students in school districts with more weeks of in-person learning during the second quarter tended to have higher participation rates and higher mean scale scores than students in school districts with less in-person learning. However, the significant relationship with assessment results had only a medium effect size for second-quarter learning mode. One reason may be the low variability in second-quarter learning mode among school districts as most school districts used primarily in-person learning.

For community-level indicators, poverty percentage had positive moderating effects on the relationship between second-quarter learning mode and assessment results in middle school and high school. The positive moderating effect of poverty percentage indicates that there was a stronger relationship between second-quarter learning mode and assessment results for districts with higher poverty percentages than for districts with lower poverty percentages.

VI.4. Limitations

The first limitation of studying the impact of the pandemic on OTL and testing environment was the low participation rate for the three surveys: the OTL teacher survey, the OTL curriculum-coordinator survey, and the 2021 KAP teacher survey. Only 1,260 educators (~3% response rate) representing 78 public districts (27% of 286 districts) responded to the spring OTL teacher survey. Only 95 districts (35.5% of all districts in Kansas) responded to the curriculum-coordinator survey. Therefore, the OTL indicators from these two OTL surveys could not be used to study the relationship between learning and instruction and assessment. The 2021 KAP teacher survey, including the questions on testing settings, had a response rate of only 1%. Thus, the conclusions about the KAP testing environment are not representative of testing environments overall.

Another limitation is that all data collected from the learning-environment and OTL surveys were at the district level, not at the student level. The relationship between learning environment and OTL, and assessment is based on district level aggregated data, so the conclusions about the relationship are only at the district level, not at the student level. The aggregated data may not reflect variation within district. If students' individual learning-environment and OTL data had been obtained, those variations could have been accounted for. Moreover, further analysis, such as DIF based on learning mode, could have been performed.

VI.5. Conclusion

This research report summarizes the teacher, curriculum-coordinator, and district survey data, as well as achievement assessment data, to investigate the effect of the COVID-19 pandemic on student learning and achievement. The intended audience includes test coordinators and administrators, curriculum coordinators, teachers, policy makers, and other educators in Kansas who are interested in learning more about the impact of the COVID-19 pandemic on students' learning environments, OTL, and academic achievement.

During the 2020–2021 school year, most school districts reported that the majority of their students participated in in-person learning, while a small percentage of students participated as fully remote learners. For students who participated in remote learning, student engagement and lack of family involvement were challenges throughout the school year. The average KAP participation rate for the whole state decreased in 2021 by about 5% across grades and subjects. Some elementary grades (grades 3 and 4) also experienced a decline in overall enrollment. The KAP mean scale score for the whole state decreased in 2021 across all subjects and grades except grade-11 science. Mathematics experienced a greater decline in performance in 2021 compared to English language arts and science. School districts that included large cities had larger participation-rate decreases, as well as more and greater decreases in mean scale scores from 2019 to 2021. School districts in western and southeastern Kansas had more-stable participation rates and more-stable mean-scale scores from 2019 to 2021 compared to districts in other parts of the state. School districts that included large cities tended to have more Black students, who had lowest participation rates in 2021. Studying the relationship between students' learning mode and academic achievement indicates a positive relationship between in-person learning and assessment performance.

In conclusion and based on all data collected, the results described in this report indicate the COVID pandemic did appear to affect students' learning environment, OTL, assessment participation, and assessment performance in Kansas during the 2020–2021 school year. Because some OTL surveys had low participation rates and about 7% of enrolled students across grades did not participate in summative assessments, the findings from this study may not represent the impact of the pandemic on the experiences of the full population of students and educators.

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Appendix A: Learning-Environment Survey

Appendix A

School District Learning Environment - Qtr 1 Survey from KSDE

KSDE needs your help to understand the different student learning environments in place during the 2020-21 school year; specifically, when your district had to make changes to those environments because of the COVID-19 Pandemic.

This survey includes about 20 questions. In answering these questions, it is acceptable to ESTIMATE the % of students when asked for such a response and we encourage you to do so.

Responses to this survey will be used to help KSDE make decisions regarding this year's State assessments, to help provide information to the Kansas Legislature and yes (a small amount of the information will be used) to ensure accurate audit results. Questions related to masks will help KDHE develop policies and processes for ensuring student and school district staff safety as the COVID-19 Pandemic continues.

We appreciate your help.

* Required

Please enter your school district number (for example: 101) *

Your answer

Please enter the name of your school district *

Your answer

Please enter the name of the person completing this questionnaire. Thank you. *

Your answer



Please enter the phone number of the person completing the questionnaire. *

Your answer

Please enter the email address of the person completing this questionnaire. *

Your answer

Section 1

If you have questions related to Section 1, please contact:

Craig Neuenswander, Deputy Commissioner, Fiscal and Administrative Services at 785-296-3871 or cneuenswander@ksde.org or Laurel Murdie, Director, Fiscal Auditing at 785-296-4976 or lmurdie@ksde.org

Please enter the School Term start date for your students (the first day of school/first day students received instruction for 2020-21). *

Date

mm/dd/yyyy



District-wide, about what % of students have CHOSEN to participate as Fully Remote Learners? (fully remote = ALL days are Remote Learning) *

	0	1-25%	26-50%	51-75%	76-99%	100%
Elementary (include PreK)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middle School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

District-wide, about what % of your SPECIAL EDUCATION students are required to attend ON-SITE to ensure the students receive those services? *

	0	1-25%	26-50%	51-75%	76-99%	100%
Elementary (include PreK)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middle School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



On approximately what date did your district FIRST significantly change learning environments for the majority of students in any one building? (For example, On-Site Learning to Hybrid Learning or Hybrid to Fully Remote) Enter date as: month, day, year please. If your district has not experienced a significant change, simply answer NA or "not applicable." *

Your answer

By building type, please select the choice that best describes the overall change in learning environment when your district FIRST made a significant change in learning environments.

	On-Site to Hybrid	On-Site to Fully Remote	Hybrid to On-Site	Hybrid to Fully Remote	Fully Remote to Hybrid	Fully Remote to Onsite	Not Applicable - no change
Elementary (include PreK)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middle School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On approximately what date did your district make a SECOND significant change to the learning environment for the majority of students in any one building? (For example, On-Site Learning to Hybrid Learning or Hybrid to Fully Remote) Enter date as: month, day, year please. If your district has not had to made a SECOND significant change, simply answer NA or "not applicable." *

Your answer



Please select the choice that best describes the overall change in learning environment when your district made the SECOND significant change in learning environments.

	On-Site to Hybrid	On-Site to Fully Remote	Hybrid to On-Site	Hybrid to Fully Remote	Fully Remote to Hybrid	Fully Remote to Onsite	Not Applicable - no change
Elementary (Include PreK)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middle School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For those students participating as REMOTE LEARNERS, how were services provided? (In answering the remaining questions in Section 1, please include BOTH students participating in a HYBRID learning environment and students participating in a FULLY REMOTE learning environment.) Of the following, choose all that apply or not applicable if all students were On-Site. *

- Live-stream classes (100% of the time when REMOTE, students attended via live-stream).
- Other Remote Learning services provided - but not live-streamed.
- Not applicable - our district did not have Remote Learners, all students were On-Site.



For Remote Learning students NOT participating in their classes via live-stream, how were Remote Learning services provided? (check all that apply) *

- Daily meaningful connection by phone or live-video call
- Pre-recorded mini-lessons
- Print resources
- Digital resources (excluding virtual schools or programs)
- Small group interactive sessions
- Other
- Not applicable - our district did not have Remote Learners, all students were On-Site.
- Not applicable - our district live-streamed classes to all Remote Learners.



For Remote Learning students NOT participating in their classes via live-stream, were any of the following virtual schools or programs used to provide services? (check all that apply) *

- Edgenuity
- Odsseyware
- eDynamic
- Accellus
- Edmentum
- K12
- Florida Virtual School
- Other:
- Not applicable - Our district did not have Remote Learners, all students were On-Site.
- Not applicable - Our district live-streamed classes to all Remote Learners.
- Not applicable - Our district did not use virtual schools or programs to provide services to Remote Learners.

In using any of the above-listed VIRTUAL schools or programs to provide services to Remote Learners, please describe how your district ensures the services approximated the student learning experience taking place in the On-Site (brick and mortar) classroom. If your district did not use a virtual school or program to provide services to Remote Learners or this question simply does not apply to your district, enter "N/A" in the text box below. Thank you. *

Your answer



What is your district's current mask usage policy for students and staff? (Choose all that apply) *

- Masks are required for all students
- Masks are required for most but not all students
- Masks are encouraged but not required for all students
- Masks are required for all teachers, staff and visitors
- Masks are encouraged but not required for all teachers, staff and visitors
- No mask usage policy

Has your mask usage policy changed since the start of ON-SITE Learning or since the start of your HYBRID Learning environment? *

- Yes
- No
- Not applicable - all students are Fully Remote



If you answered "Yes" to the previous question (your mask usage policy changed since starting ON-SITE Learning or since starting a HYBRID Learning environment), what was your mask usage policy when starting either of these learning environments? *

- Masks are required for all students
- Masks are required for most but not all students
- Masks are encouraged but not required for all students
- Masks are required for all teachers, staff and visitors
- Masks are encouraged but not required for all teachers, staff and visitors
- No mask usage policy
- Not applicable - all students are Fully Remote
- Not applicable - no change in mask usage policy

If you answered "Yes" to the question regarding whether your mask usage policy has changed, when did your mask policy change? (Enter date as: month, day, year please) If your mask policy did not change, simply answer NA or "not applicable." *

Your answer



Section 2

The responses you provide to the following questions identify disruptions to student learning environments during the 2020-21 school year. We need your help in answering these specific questions quarterly throughout this year. This is the first quarterly survey.

We know this adds to an already stressful time, but want you to know this information will be especially important for the following reasons: understanding the impact of the COVID-19 Pandemic on instruction and student learning, ensuring that any State assessment results are interpreted correctly, and helping target professional development needs.

If you need to contact someone at KSDE regarding the questions in Section 2, please contact:

Kelly Spurgeon, Senior Research Analyst with KSDE's Career, Standards and Assessments Services (CSAS) team at 785-296-4924 or kspurgeon@ksde.org

The following definitions should be used when answering the remaining questions in this survey:

* On-Site Learning: Students were physically On-Site.

* Hybrid Learning environment: Students were physically On-Site for some days and other days were participating remotely.

* Fully Remote Learning environment: Students were learning from home or another setting that was not On-Site.

For each of the following questions, it is acceptable to ESTIMATE the % of students and we encourage you to do so. Thank you.



For each of the following weeks, about what % of students in your ELEMENTARY building(s) (include PreK) participated in learning services in a HYBRID learning environment? (Hybrid = some days On-Site, some days Remote Learning) *

	0	1-25%	26-50%	51-75%	76-99%	100%	Not in session
Aug 10-14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aug 17-21	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aug 24-28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aug 31-Sept 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sept 7-11	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sept 14-18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sept 21-25	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sept 28-Oct 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oct 5-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oct 12-16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oct 19-23	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oct 26-30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



For each of the following weeks, about what % of students in your MIDDLE SCHOOL building(s) participated in learning services in a HYBRID learning environment? (Hybrid = some days On-Site, some days Remote Learning) *

	0	1-25%	26-50%	51-75%	76-99%	100%	Not in session
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Oct 26-30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



For each of the following weeks, about what % of students in your HIGH SCHOOL building(s) participated in learning services in a HYBRID learning environment? (Hybrid = some days On-Site, some days Remote Learning)

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Aug 10-14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Aug 24-28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Oct 26-30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



For each of the following weeks, about what % of students in your ELEMENTARY school building(s) (include Pre-K) participated in learning services in a REMOTE LEARNING environment? (REMOTE = all days were Remote Learning) *

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For each of the following weeks, about what % of students in your HIGH SCHOOL building(s) participated in learning services in a REMOTE LEARNING environment? (REMOTE = all days were Remote Learning) *

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Oct 12-16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Oct 26-30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Thank you. We appreciate your help!

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Submit

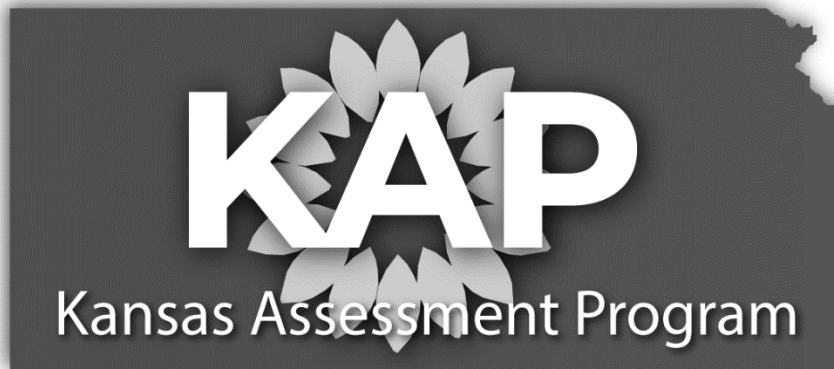
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Appendix B1: Opportunity to Learn—Teacher Survey

Appendix B1



Demographics

Teacher Survey

The Achievement and Assessment Institute (AAI) at the University of Kansas is working with the Kansas Department of Education (KSDE) to examine the impact of the COVID-19 pandemic on instruction and student learning in Kansas. We need your help to complete a brief survey on your experience providing instruction during the Spring 2021 semester. This is a follow-up to the survey administered for the Fall 2020 semester to learn the extent to which teaching and learning conditions have changed since the fall. KSDE will use the survey results to understand conditions across the state and inform planning for 2021–2022.

Your responses to this survey are completely anonymous. The survey results will only be made public at aggregate levels, such as by district.

If you have any questions or technical difficulties with the survey, please contact kap@ku.edu.

Thank you very much for your assistance!

District

What is your current position?

- Teacher
- Administrator
- Support Staff
- Other (please specify)

Please answer these questions based on your teaching experience in the first semester of this school year (from September 2020 through January 2021).

In some districts, school schedules changed at different points in the year. For example, some districts started the year

with 100% remote instruction, then changed to some in-person instruction. How many times in the first semester did your teaching schedule change?

- 0
- 1
- 2
- 3
- 4 or more

What teaching schedule best describes the majority of your instructional time during the first semester of this school year?

- All students in school on the same schedule
- Smaller groups of students in school on alternating schedules, no remote instruction
- Remote instruction, no students in school
- Responsible for in-school and remote instruction at the same time
- Other (please describe)

Which of the following strategies did you use for remote instruction? Select all that apply.

- Live sessions with the whole class
- Live sessions with small groups
- Live sessions with individual students

- Discussions with parents/guardians on how to support instruction at home
- Created online space for classroom resources, materials, communication
- Identified resources available on the internet that students could use at home
- Shared ideas for supplemental learning beyond class assignments

Checked on my students' learning using:

- Formative assessment strategies/check-ins
- Quizzes or other short, structured activities (e.g., worksheets)
- Unit tests
- Projects
- Not applicable, none of my students were remote
- Other (please describe)

During the first semester of this school year, on average, how many hours per week did you spend on instruction with your students in real time, either remotely or in person?

- 0-5 hours per week
- 6-10 hours per week
- 11-15 hours per week
- 16-20 hours per week
- More than 20 hours per week

Block 4

Which of the following best describes the emphasis of your instruction during the first semester of this school year?

- Intensive focus on competencies identified in *Navigating Change 2020*; less emphasis on the extended standards
- Relatively balanced mix of competencies and extended standards; more like a typical year
- Other (please explain)

Please answer these questions based on your impressions of your students' overall experience with remote instruction in the first semester of this school year.

	Almost no students	A few students	About half my students	Most students	Almost all students	Unsure or N/A
How many of your students were actively engaged in remote instruction (e.g., attended sessions, completed work, participated in groups, communicated with you)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How many of your students had sufficient internet access to participate in remote instruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Almost no students	A few students	About half my students	Most students	Almost all students	Unsure or N/A
How many of your students had an appropriate device (i.e., computer or tablet) to participate in remote instruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How many of your students had family members who were able to adequately support instruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How many of your students had the necessary materials (e.g., manipulatives) for remote instruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How many of your students who need intensive interventions or supplemental services (e.g., special education, English language services) were able to access what they needed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

You indicated that almost no students **were actively engaged in remote instruction**. Please describe what you did to adapt in this situation?

You indicated that almost no students **had sufficient internet access to participate in remote instruction.**

Please describe what you did to adapt in this situation?

You indicated that almost no students **had an appropriate device to participate in remote instruction.**

Please describe what you did to adapt in this situation?

You indicated that almost no students **had family members who were able to adequately support instruction**. Please describe what you did to adapt in this situation?

You indicated that almost no students **had the necessary materials for remote instruction**. Please describe what you did to adapt in this situation?

You indicated that almost no students **who need intensive interventions or supplemental services were able to access what they needed**. Please describe what you did to adapt in this situation?

Block 3

What is your school district?

(Districts are listed numerically by USD number.)

101 Erie-Galesburg
102 Cimarron-Ensign
103 Cheylin
105 Rawlins County
106 Western Plains
107 Rock Hills
108 Washington Co. Schools
109 Republic County
110 Thunder Ridge Schools
111 Doniphan West Schools

You selected "None of the above" for your school district.

Please clarify:

What grade level(s) do you currently teach?

- Kindergarten
- Grade 1
- Grade 2

- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9
- Grade 10
- Grade 11
- Grade 12

How many years of experience do you have teaching at each grade level? (rounded up to the nearest whole year)

K-2

Grade 3-5

Grade 6-8

Grade 9-12

What subjects do you currently teach?

- English language arts
- Mathematics
- Science
- Social studies
- Foreign language
- Music or arts
- Other (please explain)

Block 4

How many planning periods did you have in the first semester of this school year?

- None
- 1
- 2 or more

How many students did you teach in the first semester of this school year?

Would you be interested in participating in a follow-up focus group to share additional information about your experiences this year?

- Yes
- No

Please provide your name and email address so that we can follow-up with additional information.

First Name

Last Name

Email Address

Appendix B2: Opportunity to Learn—Curriculum-Coordinator Survey

Appendix B2



Demographics

Curriculum Coordinator Survey

The Achievement and Assessment Institute (AAI) at the University of Kansas is working with the Kansas Department of Education (KSDE) to examine the impact of the COVID-19 pandemic on instruction and student learning in Kansas. We need your help to complete a brief survey on your experience providing instruction during the 2020-2021 school year. KSDE will use the survey results to understand conditions across the state and inform planning for 2021-2022.

Your responses to this survey are completely anonymous. The survey results will only be made public at aggregate levels, such as by district.

If you have any questions or technical difficulties with the survey, please contact kap@ku.edu.

Thank you very much for your assistance!

Block 5

What is your school district?

(Districts are listed numerically by USD number.)

You indicated that your district is not listed or you work with multiple districts. Please provide the name of your school/district(s).

Do you serve as curriculum coordinator for one school, more than one school, or for the entire district?

- One school
- Multiple schools

Whole district

What grade bands did you support for instruction during the 2020–2021 school year? Select all that apply.

- K–2
- Grade 3–5
- Grade 6–8
- Grade 9–12

How many teachers did you support during the 2020–2021 school year?

Block 6

Which of the following best describes the emphasis of instruction in your district during this school year?

- Intensive focus on competencies identified in *Navigating Change 2020*, less emphasis on the extended standards
- Relatively balanced mix of competencies and extended standards, more like a typical year

Other (please explain)

In what ways did you support teachers in your district during this school year?
Select all that apply in one or both conditions.

	Systematic PD/training	1:1 consultation
Prioritization of content, standards, or competencies for instruction	<input type="checkbox"/>	<input type="checkbox"/>
Technology tools for remote instruction	<input type="checkbox"/>	<input type="checkbox"/>
Instructional strategies for remote instruction	<input type="checkbox"/>	<input type="checkbox"/>
Helping teachers address student behavioral issues or social-emotional factors	<input type="checkbox"/>	<input type="checkbox"/>
Helping teachers balance their home/personal life concerns with their teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>

	Systematic PD/training	1:1 consultation
Formative assessment practices	<input type="checkbox"/>	<input type="checkbox"/>
KAP interim predictive or other assessments	<input type="checkbox"/>	<input type="checkbox"/>
Working with parents and/or guardians on how to support instruction at home	<input type="checkbox"/>	<input type="checkbox"/>
Other (please describe) <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

What were the top two most frequent types of support you provided to teachers during this school year? (Select 2)

- Prioritization of content, standards, or competencies for instruction
- Technology tools for remote instruction
- Instructional strategies for remote instruction
- Helping teachers address student behavioral issues or social-emotional factors
- Helping teachers balance their home/personal life concerns with their teaching responsibilities
- Formative assessment practices
- KAP interim predictive or other assessments

- Working with parents and/or guardians on how to support instruction at home
- Other (please describe)

Block 7

Which of the following did your district implement to support technology access and remote instruction during this school year?

	Yes	No	Unsure
New initiative for all students to have individual district-owned devices at home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upgraded or replaced devices for existing or ongoing 1:1 device initiative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distributed mobile hotspots to families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arranged for hotspot access outside district buildings or other community locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Yes	No	Unsure
Added or changed learning management system options for teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added or changed ways for schools to communicate electronically with parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added or changed license for curriculum products for student use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added or changed license for online assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please describe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Please indicate your general impressions regarding student experience with remote instruction this year.

Strongly Disagree	Disagree	Agree	Strongly Agree
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Strongly Disagree Disagree Agree Strongly Agree

Students in my district/school were actively engaged in remote instruction (e.g., attended sessions, completed work, participated in groups, communicated with teachers).

Students in my district/school had sufficient internet access to participate in remote instruction.

Students in my district/school had appropriate devices (i.e., computer or tablet) to participate in remote instruction.

Strongly Disagree Disagree Agree Strongly Agree

Students in my district/school had family members who were able to adequately support instruction.

Students in my district/school had the necessary materials (e.g., manipulatives) for remote instruction.

Students in my district/school who need intensive interventions or supplemental services were able to access what they needed.

In your opinion, was there any particular student subgroup that was impacted more than others by the instructional conditions this year?

- Yes
- No
- I don't know

Please share which student subgroup was impacted more than others and describe the nature of the impact.

Has your district gathered any information regarding students' potential learning loss during the 2020-2021 school year?

- Yes
- No
- I don't know

Please describe how your district has gathered information about learning loss and how the district is addressing this.



Appendix C: Kansas State Department of Education, Opportunity to Learn, Impact of COVID-19— Semistructured Focus-Group Protocol, Spring 2021

Introductory information:

1. Introductions
2. Reminders about the purpose of the focus group

The purpose of the focus group is to learn about teachers' and students' school experiences during the COVID-19 pandemic and explore teacher perspectives on which groups of students may need focused attention to mitigate educational disruptions experienced this academic year.

3. Reminders about confidentiality

Your name will not be associated in any publication or presentation with anything you say. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. Since this is a focus group, we also ask you to maintain confidentiality of this conversation and not share what others said with people outside this meeting.

We will be recording and transcribing our conversation today. We will not share the meeting recording outside of the study team or with KSDE. Once we receive the transcript, your real names will be immediately replaced with pseudonyms.

Guiding questions (responses may prompt specific probes):

1. In this focus group we really want to understand more about your experiences and your students' experiences with **teaching and learning** this year. How would you describe your year?
2. How were students different this year compared to prior years?
 - Attitudes, behaviors, or engagement
 - Motivation, attendance, quality, or quantity of completed work
3. What were some barriers to learning that students faced this year?
 - Access to: Internet, devices, parent/guardian support, intensive services
 - Focus on factors that can be influenced or addressed by the educational system
4. Did certain groups of students struggle more than others? If so, who were they?

- How do you think spring 2021 academic outcomes compare with spring 2020 outcomes at the classroom level for these students?
 - What differences did you observe in academic outcomes among these students compared to their peers?
 - What may have led to these challenges and differences?
 - Attitudes, behaviors, or engagement, other social-emotional factors or mental health concerns
 - Support outside of the classroom
 - Were these challenges resolved? If so, how? If not, what prevented these challenges from being resolved?
5. What strategies did you find to be successful when working with students this year?
 - How did those strategies impact learning?
 - How did those strategies impact social or mental health outcomes?
 - How did those strategies impact different populations or groups of students?
 6. What will students need most when school starts next year to help them be successful?
 - What are your overall suggestions for reducing learning gaps?
 7. What supports do **you** need in order to help students be successful next year?
 - Professional development opportunities, classroom materials, administrative support, etc.?
 8. What advice would you give to other teachers and as they work to help students catch up next year?
 9. What advice would you give to your district or KSDE about getting ready for next year?
 10. Is there anything else you'd like to share?

Appendix D: Opportunity to Learn—Teacher Survey Results, Fall 2020 and Spring 2021

OTL.1. What is your current position?

	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Administrator	66	2.2	27	2.1
Other (please specify)	127	4.1	55	4.4
Support staff	64	2.1	20	1.6
Teacher	2,796	91.6	1,157	91.9
Total	3,053	100.0	1,259	100.0

OTL.2. How many times in the semester did your teaching schedule change?

No. of times	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
0	1,158	37.9	639	50.7
1	559	18.3	232	18.4
2	623	20.4	167	13.3
3	453	14.8	132	10.5
4 or more	260	8.5	90	7.1
Total	3,053	100.0	1,260	100.0

OTL.3. What teaching schedule best describes the majority of your instructional time during each semester of this school year?

Teaching schedule	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
All students in school on the same schedule	963	31.5	601	47.7
Other (please describe)*	229	7.5	99	7.9
Remote instruction, no students in school	372	12.2	56	4.4
Responsible for in-school and remote instruction at the same time	1,352	44.3	465	36.9
Smaller groups of students in school on alternating schedules, no remote instruction	137	4.5	39	3.1
Total	3,053	100.0	1,260	100.0

Note. * The largest number of “other” responses provided a range of schedules experienced throughout the semester (i.e., no single mode for the majority of the time).

OTL.4_1. Which of the following strategies did you use for remote instruction? Select all that apply.

Strategy	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Live sessions with the whole class	1,514	49.5	496	39.4
Live sessions with small groups	899	29.4	267	21.2
Live sessions with individual students	972	31.8	301	23.9
Discussions with parents/guardians on how to support instruction at home	746	24.4	207	16.4
Created online space for classroom resources, materials, communication	1,530	50.0	469	37.2
Identified resources available on the Internet that students could use at home	1,200	39.2	377	29.9
Shared ideas for supplemental learning beyond class assignments	699	22.8	213	16.9
Formative assessment strategies/check-ins	1,558	50.9	499	39.6
Quizzes or other short, structured activities (e.g., worksheets)	1,588	51.9	491	39.0
Unit tests	985	32.2	308	24.4
Projects	1,026	33.5	341	27.1
Not applicable, none of my students were remote	10	.3	7	0.6
Other* (please describe)	125	4.1	31	2.5

Note. * The most frequent *Other* responses included specific technology applications (Acellus, Edgenuity, Pear Deck, Seesaw, Google applications), discussions, and written work.

OTL.5. During each semester of this school year, on average, how many hours per week did you spend on instruction with your students in real time, either remotely or in person?

No. of hours	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
0–5 hours per week	239	7.9	89	7.1
6–10 hours per week	289	9.5	90	7.2
11–15 hours per week	189	6.2	60	4.8
16–20 hours per week	359	11.8	111	8.8
More than 20 hours per week	1968	64.7	907	72.2
Total	3,044	100.0	1,257	100.0

OTL.6. Which of the following best describes the emphasis of your instruction during each semester of this school year?

Emphasis	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Intensive focus on competencies identified in <i>Navigating Change 2020</i> ; less emphasis on the extended standards	840	27.6	253	20.1
Other (please explain)	255	8.3	109	8.7
Relatively balanced mix of competencies and extended standards; more like a typical year	1944	63.5	894	71.2
Total	3,039	100.0	1,256	100.0

OTL.7_1. How many of your students were actively engaged in remote instruction (e.g., attended sessions, completed work, participated in groups, communicated with you)?

Remote instruction	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	581	30.1	213	35.0
About half my students	490	25.4	156	25.7
Most or almost all students	857	44.5	239	39.3
Total	1928	100.0	608	100.0

OTL.7_2. How many of your students had sufficient Internet access to participate in remote instruction?

Sufficient Internet access	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	112	5.9	32	5.4
About half my students	157	8.3	38	6.4
Most or almost all students	1,632	85.8	522	88.2
Total	1901	100.0	592	100.0

OTL.7_3. How many of your students had an appropriate device (i.e., computer or tablet) to participate in remote instruction?

Appropriate device	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	62	3.3	13	2.3
About half my students	33	1.8	18	3.2
Most or almost all students	1,769	94.9	539	94.6
Total	1,864	100.0	570	100.0

OTL.7_4. How many of your students had family members who were able to adequately support instruction?

Family support	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	592	35.4	159	30.9
About half my students	560	33.5	174	33.9
Most or almost all students	521	31.1	181	35.2
Total	1,673	100.0	514	100.0

OTL.7_5. How many of your students had the necessary materials (e.g., manipulatives) for remote instruction?

Necessary materials	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	321	17.8	90	16.0
About half my students	241	13.4	91	16.2
Most or almost all students	1,238	68.8	380	67.7
Total	1,800	100.0	561	100.0

OTL.7_6. How many of your students who need intensive interventions or supplemental services (e.g., special education, English language services) were able to access what they needed?

	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Almost no or a few students	466	29.2	136	27.1
About half my students	241	15.1	86	17.2
Most or almost all students	891	55.8	279	55.7
Total	1,598	100.0	501	100.0

OTL.16_1. What grade level(s) do you currently teach?

Grade level	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
Kindergarten	356	11.6	173	13.7
Grade 1	352	11.5	168	13.3
Grade 2	372	12.1	177	14.0
Grade 3	383	12.5	190	15.1
Grade 4	406	13.2	175	13.9
Grade 5	443	14.4	174	13.8
Grade 6	487	15.9	180	14.3
Grade 7	575	18.7	209	16.6
Grade 8	602	19.6	222	17.6
Grade 9	1,028	33.5	386	30.6
Grade 10	1,118	36.5	416	33.0
Grade 11	1,163	37.9	445	35.3
Grade 12	1,116	36.4	423	33.6

OTL 17. How many years of experience do you have teaching at grade level?

Grade level	<i>n</i>	Min.	Max.	<i>M</i>	<i>SD</i>
Descriptive statistics for fall 2020					
K–2	1,291	0	44	7.70	8.62
3–5	1,419	0	44	8.35	8.50
6–8	1,612	0	46	9.20	9.15
9–12	1,720	0	50	12.76	11.08
Descriptive statistics for spring 2021					
K–2	546	0	39	8.45	8.75
3–5	591	0	41	8.82	8.80
6–8	653	0	45	8.90	9.17
9–12	687	0	48	13.29	11.62

OTL.18_1. What subject(s) do you currently teach?

	Fall 2020		Spring 2021	
	<i>n</i>	%	<i>n</i>	%
English language arts	1,258	41.0	582	46.2
Mathematics	1,276	41.6	548	43.5
Science	910	29.7	374	29.7
Social studies	951	31.0	382	30.3
Foreign language	115	3.7	57	4.5
Music or arts	182	5.9	73	5.8
Other* (please explain)	1,046	34.1	402	31.9

Note. *The most frequent *Other* responses included vocational/CTE/career planning, computers/technology/business/robotics, special education, family and consumer sciences, and physical education/health.

Appendix E: Curriculum-Coordinator Survey Results, Spring 2021

CC.3. Do you serve as curriculum coordinator for one school, more than one school, or for the entire district?

	<i>n</i>	%
Whole district	92	80.0
One school	15	13.0
Multiple schools	8	7.0

Note. *N* = 115

CC.4_1. What grade band(s) did you support for instruction during the 2020–2021 school year? Select all that apply.

	<i>n</i>	%
K–2	101	86.3
3–5	102	87.2
6–8	100	85.5
9–12	98	83.8

Note. *N* = 117

CC.6. Which of the following best describes the emphasis of instruction in your district during this school year?

	<i>n</i>	%
Relatively balanced mix of competencies and extended standards, more like a typical year	89	78.1
Other (please explain)	13	11.4
Intensive focus on competencies identified in <i>Navigating Change 2020</i> , less emphasis on the extended standards	12	10.5

Note. *N* = 114

CC.7. In what ways did you support teachers in your district during this school year? Select all that apply in one or both conditions.

	Systematic professional development or training		1:1 consultation	
	<i>n</i>	%	<i>n</i>	%
Prioritization of content, standards, or competencies for instruction	69	59.0	58	49.6
Technology tools for remote instruction	100	85.5	43	36.8
Instructional strategies for remote instruction	83	70.9	44	37.6
Helping teachers address student behavioral issues or social-emotional factors	71	60.7	60	51.3
Helping teachers balance their home/personal-life concerns with their teaching responsibilities	39	33.3	56	47.9
Formative assessment practices	50	42.7	41	35.0
KAP interim predictive or other assessments	58	49.6	39	33.3
Working with parents and/or guardians on how to support instruction at home	42	35.9	52	44.4
Other* (please describe)	9	7.7	4	3.4

Note. *N* = 117. * *Other* responses included biweekly professional development on curriculum, individualized plans of study, professional learning communities, providing curricular materials, technology integration and blended learning, work-based learning, and curriculum maps.

CC.8_1. What were the top two most frequent types of support you provided to teachers during this school year? (Select 2)

	<i>n</i>	%
Technology tools for remote instruction	67	57.3
Prioritization of content, standards, or competencies for instruction	44	37.6
Instructional strategies for remote instruction	42	35.9
Helping teachers address student behavioral issues or social-emotional factors	32	27.4
Helping teachers balance their home/personal-life concerns with their teaching responsibilities	11	9.4
KAP interim predictive or other assessments	10	8.5
Formative assessment practices	7	6.0
Other (please describe)	9	7.7
Working with parents and/or guardians on how to support instruction at home	1	.9

Note. *N* = 117

CC9. Which of the following did your district implement to support technology access and remote instruction during this school year?

	Yes		No		Unsure	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
New initiative for all students to have individual district-owned devices at home	66	60.0	44	40.0	0	0
Upgraded or replaced devices for existing or ongoing 1:1 device initiative	82	78.1	23	19.7	0	0
Distributed mobile hotspots to families	87	77.7	25	22.3	0	0
Arranged for hotspot access outside district buildings or other community locations	68	64.2	36	34.0	2	1.9
Added or changed learning management system options for teachers	63	57.3	44	40.0	3	2.6
Added or changed ways for schools to communicate electronically with parents	73	67.6	35	32.4	0	0
Added or changed license for curriculum products for student use	75	68.8	34	31.2	0	0
Added or changed license for online assessment	37	31.6	66	56.4	1	0.9
Other* (please describe)	3	30.0	6	60.0	1	0.0

Note. *N* = 117. * *Other* responses mentioned districts having already implemented many of these supports before the pandemic, purchasing new platforms, and additional access to technology support.

CC.10_1. Students in my district/school were actively engaged in remote instruction (e.g., attended sessions, completed work, participated in groups, communicated with teachers).

	<i>n</i>	%
Strongly disagree or agree	32	28.3
Agree or strongly agree	81	71.7

Note. *N* = 113

CC.10_2. Students in my district/school had sufficient Internet access to participate in remote instruction.

	<i>n</i>	%
Strongly disagree or agree	25	22.1
Agree or strongly agree	88	77.9

Note. N = 113

CC.10_3. Students in my district/school had appropriate devices (i.e., computer or tablet) to participate in remote instruction.

	<i>n</i>	%
Strongly disagree or agree	7	6.2
Agree or strongly agree	106	93.8

Note. N = 113

CC.10_4. Students in my district/school had family members who were able to adequately support instruction.

	<i>n</i>	%
Strongly disagree or agree	65	57.5
Agree or strongly agree	48	42.5

Note. N = 113

CC.10_5. Students in my district/school had the necessary materials (e.g., manipulatives) for remote instruction.

	<i>n</i>	%
Strongly disagree or agree	24	21.2
Agree or strongly agree	89	78.8

Note. N = 113

CC.10_6. Students in my district/school who need intensive interventions or supplemental services were able to access what they needed.

	<i>n</i>	%
Strongly disagree or agree	39	35.1
Agree or strongly agree	72	64.9

Note. N = 111

CC.11. In your opinion, was there any particular student subgroup that was impacted more than others by the instructional conditions this year?

	<i>n</i>	%
Yes	71	67.6
No	34	32.4

Note. n = 105

CC.13. Has your district gathered any information regarding students' potential learning loss during the 2020–2021 school year?

	<i>n</i>	%
Yes	101	91.8
No	9	8.2

Note. n = 110

Appendix F: Impact of COVID 19— Educator Focus Groups Summary and Themes, Spring 2021

During the focus-group meetings, teachers discussed the effects of the constantly changing learning situations, their experiences with remote learning (including parental support), and in-class learning situations. Teachers also commented on which students struggled more than others and students' academic outcomes. Teachers provided suggestions for what students and teachers needed to be successful in the next academic year.

Overall, teachers' comments revealed that barriers to learning were present in both remote and in-person learning scenarios, with remote learning significantly influenced by Internet access and parental support. Generally, students who struggled could not manage their own learning and did not have enough parental support. Some academic outcomes showed evidence of these struggles. To address the learning challenges, teachers suggested high expectations and accountability for students. Teachers hoped for more paraprofessional support and substitute teachers, more support for students' emotional needs (counselors, psychologists, etc.), data-based resources to address learning gaps, and time to plan instruction based on student data. Teachers also expressed the need for supports for themselves, including emotional support and support for their health and safety.

Changing Learning Environments

Teachers' comments revealed that ever-changing, inconsistent learning situations caused disruptions and frustration. These situations required teachers to be extremely flexible. One teacher in the elementary grade-band focus group noted:

It felt like a never-ending change of learning scenarios.... Every time we would get our groove and would get something going, then it would change again. And it either had to do with what our board decided or what the state decided and it was constantly changing, which was really pretty frustrating for us as teachers.

A few teachers had a more consistent experience because they taught in-person for the whole year. However, these teachers still faced adversity because they had to provide for students who were quarantined. A teacher in the middle school grade-band group remarked:

I felt pretty fortunate. We were in a school that we were full in-person the whole time.... We had just a constant revolving door of students who were quarantined or sometimes teachers, and in those instances we had to provide in-home learning for them...through Zoom and/or online platforms and that just changed all the time.

Remote Learning

A few teachers commented that some of their students were successful in remote learning, saying that some students did better with remote learning than in-person learning. One teacher noted that she wished some students who "excelled" in remote learning could continue it.

From an elementary school teacher:

And so my class on remote was able to get a lot [further] and progressed a lot more in their math than our in-person students who had behavior issues, the kids talking over each other because my students were always muted when they weren't talking, so they

didn't have that extra classroom chatter, and those kinds of things. And so the math looked really good, I felt they're going to go in with much better number sense and that kind of thing next year.

A middle school teacher said,

Some of my students did so much better with remote and I'm a SPED teacher so I look at a lot of data and if we could continue remote for some of those students, they would probably be off of an IEP within a year or two because they just—I was able to provide so much more individual instruction because I would go into a breakout room with them or check in with them, no distractions. That part was amazing.

A high school teacher added,

I had some students that were on IEPs originally struggled in regular school, hated it, and they flourished and the Edgenuity program, and they finish all their classes before the semester was even over and they graduated on time this year. And, you know, they felt so proud and happy with themselves.

However, many teachers who taught remotely, whether full-time or part-time, noted difficulties. One elementary school teacher noted that her students lost the understanding of why learning was important (while this was not limited to remote learners [it was also noted to be true with in-person students in elementary and middle school] one teacher noted that it was compounded by being at home):

And with my remote students specifically, it was really hard because they weren't in a learning environment on top of that, so they were at their kitchen table or on their living room floor. Even though the recommendations were [to] set up a learning space, ... for most of my students that didn't occur. And so just the mindset of what learning is, and how do we learn, and how do we grow as a learner, ...the importance of growing as a learner kind of was lost. And I feel like for my classes online, it took about half the school year to really develop that sense of how to be a learner, why is it important to learn, like, really getting them back in that mindset of being a learner and how to learn why school is important.

Some teachers commented that students were distracted and not engaged online. Some teachers also noted that students who had trouble staying organized also had difficulties with remote learning. Other problems caused by remote learning included technology and Internet issues, abuse of the remote-learning platform, students' lacking the items they needed, students lacking social connections, and disrupted student-teacher connection. Support from parents was also discussed heavily as a factor in student success in remote-learning situations.

Issues With Technology and Internet Access

Teachers of students across all three grade bands recognized that some students had issues using the technology and some students had no Internet or very poor Internet access. The lack of reliable Internet was a huge barrier to learning.

An elementary school teacher said,

There were some kids, up until the last nine weeks, they still don't have Internet. And so you know, you really can't do much when you're online, and you don't have Internet. And even once they got Internet, they got the Internet that was a subsidized, and it was really,

really slow. And trying to help those kids online, it was tough, because they would freeze up, you know, every five or ten minutes.

From a middle school teacher:

I had one little girl...who was constantly getting kicked off and coming back on, kicked off, coming back on. I don't know how she stood it for the entire year. I would have gone crazy, and I would have lost motivation to do anything. I probably would have given up fairly quickly, but she stuck with it, and I can't tell you how many times she had to reconnect, reconnect all day.... Connectivity was a huge issue as far as the kids being able to learn and me being able to teach them.

A high school teacher said,

Those very low-income families who maybe didn't have good Internet service at home, but had maybe four or five kids in the home, where those kids couldn't even, even if they wanted to, if they were motivated, and they all wanted to be on and part of their Zoom classes the whole time, they didn't have the ability to do it because they simply didn't have the bandwidth to do it. So those kids struggled a lot.

One teacher also mentioned a student who missed out on paraprofessional support because of the para's connectivity issues. One teacher noted that the platform they used did not have built in supports for the student (read-aloud). Teachers also pointed out that learning platforms and devices were often switched, which was a struggle.

One teacher said,

First quarter was rough for seventh graders because...they switched to MacBooks from an iPad, and so teaching them how to use a MacBook remotely was very difficult, and then we also switched from Google Classroom to Canvas, which is very different in how that is setup, and so both seventh and eighth graders had a hard time with that.

Abuse of the Remote-Learning Platform

Teachers' comments in the middle school and high school grade bands revealed that some students abused the online environment. These abuses included being inappropriate on Zoom, cheating, refusing to turn on their cameras, not doing their assignments, or not logging on at all. The first two comments below were from a middle school teacher. The other three comments were from high school teachers.

A middle school teacher said, "Our kids I think found ways to cheat like never before, and these are good kids that had no reason to cheat.... We also had the issue of students just turning themselves on and then going back to bed."

A high school teacher commented,

So having that choice that they had, while they were either hybrid or remote, to decide whether they were going to do something, because it's really easy to turn off your screen and turn off your volume and go back to bed.

Another high school teacher said,

I spent the whole fourth quarter staring at a blank screen with no kids showing up at all. And they would go online. And some of them would do the assignments, but the majority of them were not doing any of the assignments.

From a third high school teacher:

...the ones who ended up having to quarantine. They would be gone for two or three weeks, and none of the work over that time period would get done. And they would come back and be lost and just not catch back up. Particularly with some of the math and the science stuff, because it builds on each other, like it continues to build, so when they missed this basic thing, they never caught that back up.

Lacking Items

Teachers noticed remote students lacked items needed for instruction. Some middle school teachers' comments revealed that some students were not able to be at home because of different, extenuating circumstances. These students were asked to obtain certain items for the lesson but did not have access to them.

Being in a military institution throughout the year, I had kids moving, leaving, and coming in, and so I had several in that situation where they were in a temporary, you know, in a hotel or one of those places.... We weren't allowed to send things home, so we relied on the kids a lot to gather materials to do anything hands-on for science or math: "Hey, can you find a toy car?" "Nope. I have nothing."

A few teachers discussed manipulatives. One teacher noted that parents would come pick up manipulatives weekly, but other teachers' comments revealed that some students misplaced manipulatives or were not provided any.

An elementary school teacher said,

With them being fully remote, even though you would provide them three weeks' worth of manipulatives, and whatever, staying organized to be able to find those when it was time to use them..., they weren't organized enough. So even though you would spend lots of time creating the manipulatives and getting them ready, they wouldn't be able to find them, and then their reading group would be over, and so they didn't get what they needed.

Lacking Social Connection

A few high school teachers noted that the lack of social connection was difficult for some students. One teacher said,

I had a class in the spring, my physics class with my seniors, we would Zoom, you know, and they're like, "Can we just stay on here and breathe together? Because I just want to hear somebody else...." Extroverts just really suffered.... The principal's daughter quarantined five times because she could not do it, she [could not] be that introvert and stay home and stay safe, she had to go out and be with people. And she struggled not having school.

Lacking Teacher-Student Connection

Middle school and high school teachers commented on remote learning being difficult because it was hard to connect with the students and recognize if they were learning or if they were

struggling. A middle school teacher said, “[It was] very difficult to tell what they really did know or were able to know and what they didn’t know.”

Another middle school teacher commented,

All of our assessments were then online so I had no idea from those remote students or the remote students that were actually in the building what they knew, what they were doing because all they had to do was click a multiple-choice assessment.

From a high school teacher:

the...inability to know what the issue is. Are you not doing the assignment because you don't know where it is? Or are you not doing the assignment because you're asleep? Or are you not doing the assignment because you need help and you don't know how to ask for help? Those things that we could easily diagnose when they were in the classroom with us. Or you're not doing the assignment because you don't have a pencil, or you're not doing the assignment because you haven't eaten breakfast today, those things that we can easily diagnose when they're in our classrooms with us, I have no idea while they were at home.

Another high school teacher commented,

[We] sometimes have students that are just struggling learners that need that extra support, [and] we can see that as a teacher in the classroom and give them that extra support. But I can't see them at home and know that they're struggling. And so...they're not telling me..., and then they're getting further and further behind.

Support From Parents

The level of parental support was noted by many teachers to be a significant factor in the success of remote learners. Low levels of involvement were often caused by parents’ having to work, but many teachers also noticed a general disconnect from parents. Elementary school teachers commented frequently on parent involvement, but middle school and high school teachers also discussed it. Teachers’ comments revealed that parents needed to help students stay accountable, on schedule, and motivated. Some elementary school teachers reported that parents were supportive and flexible, but many teachers noted that parents were not involved with their child’s learning and not available to help their child due to working outside or inside the home.

The students had to be independent, because they didn't have the support at home that remote learners should have at such a young age, because they're 7. So they did not have the support they needed, most of them. So they weren't independent workers. So most of the year, I feel like we worked on how to be an independent learner and how to self-motivate. And so it was very different than in the classroom.

working with EL students. Most of them [parents] worked. They did not get to work from home. They were essential workers...And so they were working the whole time. And so it really took a village to get them [students] on. I would get siblings, I would text parents at work and the parents would threaten the children, you better get on, I know you're not there.... I even had a neighbor that I would call on the phone and say go knock on the door, because so and so's not on their Zoom meeting and they're in class right now and he needs to get on.

There's a lot of inconsistency with the students. You could really see it in the classroom: who got that privilege to have either mom or dad to stay at home with them during all of their online time and had structure and everything and kept everything fairly normal, and the ones who just weren't able to. Yeah, you can definitely tell the difference of the student on that.

A few elementary school teachers discussed the issue of parents not being flexible in the face of ever-changing schedules. Some elementary school teachers also discussed parents excess involvement to the point of completing the child's work for them, or not giving their children room to self-regulate their learning:

A lot of our kids, they were home remote, the parents either just did the work for them, or they did absolutely nothing.

Some of them have some kind of, I would say, kind of learned helplessness where they rely too much on somebody else to help them or keep them motivated at all times. And when they're in a classroom of 25, or even 20 next year, it's going to be hard for them to self-motivate when the teacher isn't continually pushing them, because the only way I got really any good work out of them was in a group of, like, two and me. So you had to keep it really, really smaller; they were not engaged in...any of the learning activities.

[Parents] weren't ready to support a young child in the learning ways that a teacher would. And so, what a teacher does to scaffold and support a student and help them learn is very different than a parent who thinks getting the right answers is what you're looking for and doesn't really help the student learn anything.

We had to reteach them how to ask for help. A lot of kids would just sit there and wait for someone to show up. Or they would raise their hand and we would say what do you need help with?... Well, I need you to do this for me, because that's what they had at home. Their parents are just doing it for them. So it was amazing how many kids had that happening... Their lack of effort [was] completely gone, because someone just did it for them previously.

He's going to struggle with his math, because all the time he had someone over him checking him, like, constantly and, no, fix that. Well, in in a classroom, you would allow them to make mistakes and work them through and ask them questions, and it wouldn't be fixed that do it this way, it would be okay, so why is this wrong? And you would have conversations. And so I'm really worried about those kids.

Middle school teachers noted that students lacked the motivational and monitoring support that they needed during remote learning.

Some of our parents were...able and willing to take on the extra responsibility of having a learner at home and some of our parents just weren't in a position to do that....

I think that my students are not intrinsically motivated to work or to do well and that need all of our different motivation strategies that we use as a teacher even if it's just close proximity, especially those who didn't have family members who were checking in on them throughout the day, so if they were on their own from the time they woke up until sometime in the evening, they really struggled.

Sixth graders—I guess a lot of their parents think they're old enough to do it on their own, and so I had several—I had one young man who was always by himself every day, and then I had several whose parents would leave. They'd be gone. The one young man needed somebody monitoring him all the time because he would just not get his work done, and then he'd dig himself into a hole, and then we'd work together to dig himself back out, and he just wasn't capable. He was not mature enough or motivated enough to use his time wisely and get his work done, and then he would get himself into such a hole that he wouldn't do as well as he should have.... We felt as a grade level, at least in our building, that parents this year were so much more disconnected than we've ever seen them before.... Lack of parent involvement, I think, was probably the biggest hindrance for some of my kids.

Even high school teachers noted that their students needed parental support during remote learning.

We mistakenly think that high school students can monitor themselves. I know this is a high school group. And I'm so glad I don't teach elementary kids in times like this, but I think we all expected—oh, they're high school kids, they'll get on when they're supposed to, they'll do what they need to, and I think maybe they needed more parental supervision than we'd hoped.

I noticed some of the kids...in the spring that kind of struggled in person, really struggled on their remote time because they didn't have that extra support or somebody right there saying, "Okay, at least do this much."

Students in middle and high school, who may not have needed parental support for learning, also struggled because parents were absent from the home. These students were charged with taking care of siblings.

They had to also take care of younger siblings while they were logging into school every day—a couple of them [caring for] newborns—like, mom went back to work four weeks later, and they were taking care of the baby and logging on for class. I had several of those instances.... A huge one for several of my students was just having to take care of other siblings, get their lunches, things like that ready.

A lot of my kids are watching their siblings. So I get a lot of kids say, "Sorry, I didn't get on to attendance, but my sister was having problems and I had to, you know, go do that," or whatever. And so I think that our parents, our faith in the parents and giving them that structure that they needed, and to be that kind of a student was, the parents aren't there, basically, the majority of my students. So those would be the students that struggled. And they didn't struggle because they can't do it, they struggled because there wasn't the opportunities for them inside their house to do it. And so that's what I was—I don't really have, like, a certain type of student, but that would be my one student that would struggle the most... the lack of support at home, I would say, would be the student that struggled the most for me.

In-Person Learning

Teachers' comments revealed their experiences with students learning in person. Some teachers noted behavioral issues. Teachers commented that the safety guidelines could be disruptive. One middle school teacher noted that scheduled mask breaks often interrupted learning. One middle

school teacher noted that she didn't have enough desks in her classroom because of safety regulations, which caused some students to have to learn through Zoom. Another cause of disruption was the constant schedule changes and adaptations. For example, one teacher noted that they tried having the students stay in one room and then have the teachers rotate through the rooms. Unfortunately, this ended up proving too difficult to maintain. One middle school teacher noted that the safety guidelines removed the ability to do group work. She said, "Even though you were in the classroom together, we still couldn't do anything other than computer work" which was difficult for the "high and gifted students...[who]...needed more than what was just in the book." A high school teacher noted that the changing schedules and student groups caused social friction.

While some teachers noted that students learning in person were happy to be back in the classroom, teachers also noted that most students were not focused when they returned to in-person learning, and were more interested in socializing with classmates:

They were excited to be back in the classrooms. But the focus was not on learning. Like the students' mindset was not that of a learner. It was more social, and even though they were masks and they had to stay back, and we had a very difficult group of second graders here at our school building. And I feel like, I don't know if it was just how quickly and abruptly we had stopped school in March the year before, but it was almost like school had lost its importance, learning itself had lost its importance, that they didn't have the mindset of a learner anymore.

They just weren't able to focus—like their minds were on other things, mostly like "I just want to go home and watch YouTube videos," or "I just want to go home and play video games." Like "That's what I got to do last spring, that's what I did for parts of this year; that's way more fun than sitting here in the classroom."

Transitioning from remote-learning to classroom learning was difficult for some students. One teacher in the high school grade band noted that her students were "apathetic" every time they transitioned into school from remote-learning situations. Another high school teacher noted that once students experienced time away from school, they didn't want to return to in-person learning.

We were in school the whole time, and the kids—I think having [those] nine weeks, that whole quarter off in the spring, made kids not want to attend in person. The number of times that I heard kids say "I just want to be home in my pajamas. I just want to be on the computer. I don't want to be here."

Some teachers noted that students faced social issues when they transitioned to in-person learning:

After that extended time about, like, not being around people, they didn't know "how to people" anymore. So when they came back together, they were very awkward and very quiet and very separated. And it was just a difficult thing to get them to want to interact with each other face-to-face again.... When we came back fully in person, we had more confrontations, more fights, more battles, more write-ups than we had at the end of year two years ago. So, like I said, they forgot how to people—that's part of it. They just didn't know how to deal with one another when they got irritated with someone anymore, and

they did not know how to deal with their feelings.... So they're not great at confrontation management in the first place.

Struggling Students

Teachers of students in all three grade bands noted that some students struggled more than others. In addition to issues discussed earlier, such as Internet-related challenges and issues related to parental support, many teachers noted other problems unique to the pandemic.

Students faced trauma from personal situations. Some students faced adversity caused by monetary issues or deaths in their family. One elementary school teacher noted that the trauma affected students' behavior:

There were a lot more meltdowns in person during the in-person learning. And I just really think it had to do with the parents and the families going through so much at home, just a lot of trauma happening. We had homeless students. We had students who were gone because they were evicted from their home—once the evictions got lifted and they had to go stay with relatives in Kansas City, and then so they were gone for a whole week. And then they finally got a home, so then they were able to come back. And that was more than just one family. And then cars breaking down and not being able to find new cars. And just everything from the supply chain holdup, because kids coming with clothes, I mean, we had to wash clothes at school because washers, they were broken at home, and they couldn't even go buy a new one because they didn't have them in stock. So, I mean, it was just crazy. I just have never, ever seen anything like this.

A middle school teacher noted that she “had several students who lost family members from COVID, and so that was also very difficult.”

Some teachers noted that students who needed more hands-on experiences struggled. One middle school teacher noted the difficulties for students who typically need more attention in the classroom.

I think one of our barriers, just either being in school or having kids periodically out for two to four weeks, was just the follow-through. When we have kids with us every day, if somebody is falling behind or they're not catching up on things, catching on to things, it's pretty easy to catch them and pull them in after school or before school or after class or during seminar or just stay on top of those things.... The ones that every teacher kind of has to be part mom or part parent and part teacher, a lot of those, if they ended up in a remote environment, slip through the cracks very quickly rather than kind of struggling and straggling throughout the year. They just took a nosedive and by the end of the year it was really apparent.... I feel like the role of a teacher is more than just providing an education. I think that other role kind of got taken away from us in some instances and it was very apparent.

Other teachers noted that students who had trouble with organization also struggled.

I would say for our kids who are organizationally challenged and maybe just not quite as mature, those kids really struggled, and a lot of them could recognize it and even verbalize that remote learning [was] not good for [them]. For my kids who typically are the ones who have everything color-coded and organized and handed in on time, those kids are going to learn in spite of the situations we throw at them, but our kids who just

need a little extra support are the ones who just don't quite have all their ducks in a row yet, [and] they took a dive faster than some of the others.

One issue that high school teachers discussed frequently concerned students who were employed. Teachers' comments revealed that these students wanted to focus more on working than education. Some students could not handle the time pressures of both activities, and some were stressed from the financial burden of losing working hours because of school:

Kids who, in the spring, when we shut down, opted to spend the majority of their time working jobs, jobs they would ordinarily work in the summer, ...started, you know, nine weeks early. And I think for them, getting \$10 an hour was way more important than...their education.... So, coming back to school was a challenge for them because they honestly just wanted to keep working.

I will also say that the kids who worked...if I had that job that was a bigger draw for them. And when we went back fully in person, they lost those hours. And a lot of times, they were helping, you know, put food on the table [for] the family. So that became quite a bit of a struggle, getting them to show up all day, because they wanted to go to work.

The pressure that was put on them, by their bosses...to continue to work from noon to midnight, because no one else could or would, and that was the only adult that they saw in person was someone saying, work a shift and a half and I'll pay you, versus us saying Zoom us and do some work and you can graduate in three years. And that was the only adult that a lot of them interacted with.

I had one girl that was on track to graduate on time and actually should have graduated that semester, but didn't because she was working at Walgreens, from, like, eight o'clock at night, eight o'clock in the morning, and then they'd asked her to stay even longer.

Teachers also commented that students struggled without motivation and structure. An elementary school teacher said,

It was very difficult to find motivation, whether we were in hybrid, whether we were in fully remote learning, or whether we were fully in school.... It was the same kids who struggled over and over with that part of things.... I worry for those same kids as they go into fifth grade next year... seeing how they recover from this year, because those are also going to be the handful of kids who didn't show that growth in their learning. But they're also the same kids who didn't have the support at home, [and] they didn't have the structure in their home life. They weren't able to find motivation for learning when they got to school, and so that's going to carry out, and those are the kids who I worry the most about.

From a high school teacher:

I felt like, if the administration had forced the issue and said you have to be online, you have to do these things, and giving them the structure that they needed in that fourth quarter, that we would have maybe had [fewer] problems going into this new school year. Because they would have already been ready with the structure that is needed to complete the things that they need to complete. Let's face it—they're not time-management people. They don't have those skills, and we have to give it to them. And you know, some of them won't like it forced upon them, but at the same time, they need that structure in place so that they can be successful in school and in life.

Another high school teacher shared:

I think that kids process things differently, in high school kids especially, and I don't know how you guys feel about teaching high schoolers, but I feel like a lot of my efforts are put into motivation, like motivating kids to want to do while motivating them to you're not just here for the A or the B, you're here for the learning, you know, it's this constant motivation. So the way I think most schools had to do it in the spring, you throw things together so quickly, and kids had so little time online. And I know we were only allowed 15 minutes of instruction every other day with kids. And so I think in a student's mind, they felt like, "So this is all I need, why do I now need to be here all day long?" I think they didn't understand that they weren't getting a full quality education, you know, at the end of the school year, and I think that has carried over because now they feel like, "Well, if you only needed to teach me for 15 minutes every other day in the fourth quarter, why do I need to be here every single day?" I think they haven't made the connection, that that was such a minuscule amount of education. It certainly wasn't everything. It wasn't the time that we needed—it was the time we had.

Students' Academic Outcomes

Teachers of students in all three grade bands noticed fluctuating academic outcomes in some students. One high school teacher remarked that the “gap between our highest fliers and our lowest achievers is bigger than I've ever seen.” One elementary teacher and one middle school teacher noted lower academics in remote students.

An elementary teacher said,

So, we had kids that were at home for almost a year that hadn't learned anything in their current grade level. And that was kind of across the board. You really see it at the kindergarten, first-, and second-grade levels. I mean, you can see that gap huge from those parents that...just didn't have their kids do any of the actual learning.

From a middle school teacher:

I know within our middle school, we had a higher percentage of students failing multiple classes than we've ever had before.... In our high school, which is typically a high school where it's not a huge problem, I think they have tripled the number of students going through credit recovery for summer school, and it's because they're failing multiple classes.

However, some teachers commented that their students showed learning growth:

With the exception of maybe three out of 22 students in my class, every single one of mine—looking at MAP scores, looking at just overall assessment scores, their reading levels—everything they did improved, and they showed learning and they showed growth throughout this year, which I thought was huge. And it's something that I really wanted the parents and the students to celebrate.

One elementary teacher noted that they did less testing and thus “it was kind of hard to know where students were.” Another elementary teacher said that she was focused more on the struggling students and so was unable to help other students surpass expectations:

I feel like the kids who could have been pushed higher, I usually have kids that are reading chapter books successfully, like they're reading two, three grade levels ahead, like and I had kids that could have reached that goal, but I didn't have the time energy to put into them because I was pouring all of it into trying to get these kids somewhere close to grade level.

Suggestions to Support Students

Teachers discussed how students could be supported in the coming academic year. Teachers of students in all three grade bands noted that for students to succeed in the next year, they would need motivation, structure, and high expectations and standards for accountability, attendance, and behavior. One elementary school teacher noted that the lack of expectations caused students to lose motivation.

...last March, where we had zero expectations and students learned that they really didn't matter. It didn't take them long to figure out that, you know, oh if I don't do this, it really has no bearing whatsoever on my grade. Okay, why would I do this, then?...then, even this year, to some extent, we have standards-based grading, but even so, no one's going to be retained if they don't pass. I mean, they're not. So the kids know, pretty quickly. Okay, well, there are absolutely zero consequences for me to not do this work, so what difference does it make if I do it or not? So I think students have learned that and have realized that and we've backed off on our expectations, because of all of the trauma and the craziness of this year. And so it kind of unleashed this whole new thing at school, where they're like, oh, whatever, I'm just here to hang out with my friends.

One middle school teacher noted that students need to recover ownership of their own learning.

I think we have to raise our standards back up to where they were before. In the last year, out of necessity we were instructed to show grace and be flexible and we did that with due dates and with attendance and even with behavior to some degree because we understood that kids and families are stressed and our due dates sort of went out the window. We were instructed to accept—if they'll turn in work, be glad they're turning it in, take it whenever they'll turn it in and I think we've just lowered the bar.... I think the kids just kind of forgot the purpose of coming to school. They've let us assume all the responsibility for their learning instead of taking—they've given up on the owner's personal ownership and they've given it to us to make it happen and just kind of have been passive participants. I just feel very strongly that we've got to take that back.... If we don't do that soon we're going to be on a downward spiral that's going to be really hard to recover from.

A few teachers also noted that students need support in closing gaps in their learning and that they need emotional support. One high school teacher also said that struggling students who are not on track to graduate need “a realistic path to be able to graduate.”

Suggestions to Support Teachers

Teachers discussed what supports could help them address students' learning gaps in the coming year. Teachers expressed the need for more para support and more substitute teachers:

Our district is also hiring more para [paraprofessional] support, which I think is also going to be super necessary, because these kids are going to need more small groups and everything. Especially next year, just coming from a lot of us had like smaller classes...

we're going to have a lot of really specific needs of things that they missed, or that they didn't get when they were learning at home or quarantine or whatever, and things like that. So I think para support is going to be big, you'll be able to have the small groups.

The Title teachers were being pulled for sub services, and you kind of have to start brainstorming some ideas. But our students who are Tier 2 and Tier 3, who need those consistent services, were not able to receive them. So we can't weigh the benefits of their services, or even look at did they help our students at all because they weren't consistent. And that's been the problem even before COVID, but it was definitely worse this year. But we can't keep pulling those people when those are our students that need those more than anything.

Teachers also noted that they needed support to address students' mental health.

I keep going back to that family. I mean, there were several, but the one that really sticks in my head is the family that had to move to Kansas City for a whole week and a half because they had nowhere to live. And, man, it would have been nice to know that there was a counselor, some kind of social, or some kind of a community resource officer who could help them during that time. But everywhere we called, you know—"We're booked, "We already have clients," "We're not taking any new clients." So, just, community resources are tough to come by.

We've had, I think—I can't remember our number—but I think our principal said that in all of her years, she's only had three attempted suicides.... This year I think the number was above 10, and I know of two in my classroom that were hospitalized for attempted suicides this year.

I think kids need a lot of emotional support. I think they don't know how to process their own emotions. I think that they need teachers who are understanding of where they're coming from. Because as adults, we process things so differently. You know, we have groups of kids who've lost graduation, they've lost prom, they've lost Christmas dances.... Those things don't sound like big things in our adult minds, but they're such huge things in their kiddo minds. And they need us who understand that they're struggling emotionally. And those high school kids don't want to show that they're struggling emotionally. They're going to hide it, and they're going to cover it up in a lot of ways. And so they need us to understand, or at least try to understand, that they're come from a very emotional place. And they're going to need people to talk to.... They need the structure, but they need it in a very compassionate manner. They need to understand why they need the structure. I just think we have to really communicate with our kids and help them understand why they need this because they don't understand why.

In addition, teachers expressed the need for approved resources to help them address gaps or losses in learning.

Ideas for interventions that could be used by classroom teachers, I think, would be very helpful. Because if you're going to get a kid that's a year and a half behind, even though we learn to differentiate our instruction, we don't always know what the student needs.... A lot of teachers will go on Pinterest or Teachers Pay Teachers and look for something on number sense, and it looks pretty, so [they] print it, buy it. And it's not research, it's

not best practice, it's not what's actually going to help the kid. And so having something that is research based, that is helpful, that we can go to as a resource to help when we see those holes, I think would be the biggest benefit to us.

So, having something that says, "Okay, here's what you need, here's the student's issue, here's the intervention you could provide, here's some different tools to use"—that would be amazing.

A few teachers also expressed the need for time to look at their data and plan instruction. One high school teacher noted, "It'd be really nice if districts would commit some of that money to paying teachers to come in and actually do some great in-depth planning." One middle school teacher echoed this thought but also added that she needed flexibility in her curriculum. Other teachers expressed this need too:

I need more time this next year for the differentiation, for the ability to, somebody said something about being able to take the data. I've already started taking my data that I got from MAP and from the state assessments and trying to figure out where my kids are and which ones really did lose and which ones stayed at least status quo. But we're going to need a lot more time and a lot more ability to differentiate those kids in those areas so that they don't just—especially when it comes to things like math where if they lost it, go back and get it. You can't just keep on going.... We need that ability to have that grace on our end to say, You know what?—we may not make standard again this next year because we're going to go back and teach fifth grade standards, or sixth grade standards, or whatever it was we've got to get, because otherwise.... It's just that we really need to have that ability to help those kids get where they need to be, and the only way that's going to happen is if we have the opportunity to go backwards and pull them forward. Otherwise we're just going to be moving. If we move on ahead, there are going to be holes. There's going to be holes.

A few high school teachers expressed hope for some consistency in the coming year, allowing students and teachers to have a year of healing. Some high school teachers suggested teaching only the most important state standards:

I think we really need to take time to look at our state standards and make sure we're eliminating unnecessary material. So that we can slow down and spend some quality time and some quality moments with our kids, if we can find opportunities for more task-oriented learning, get them more collaboratively involved in their education, and try to get them to where they actually enjoy the learning process. And you're able to slow it down a little bit, but you got to get rid of the fluff if you're going to do it that way.

One high school teacher agreed with this approach, but also suggested that, to address learning gaps, it was important not to backtrack, but rather to teach at grade level.

I guess, the one thing I would like to throw out there is you're never going to get kids at grade level if you're not teaching them at grade level. So my advice for all teachers in for KSDE to really worked to promote this towards teachers is, yes, we do have some gaps to fill, but I want to go back to I think there's often a lot of fluff that we can take out. And we need to really be teaching what's important. And yes, we've got to get kids caught up, but we can't always be working a year behind. The only way we're going to get kids performing at grade level is if we're teaching them at grade level. So we still have to try

to hit those grade level standards and piece them in, the prerequisite knowledge that they're missing, we've got to piece that in, but we can't go—I think we have to get away from thinking that we're going to meet them where they are and go from there, because then we will never get them caught up. So I think as teachers, we have to kind of retrain our minds that maybe there's going to be some little hope. I mean, maybe there's going to be some little pieces that are kind of missing, as opposed to massive gaps. So I still say focus on grade level with support.

Some middle school teachers discussed state assessments. Two middle school teachers noted that remote students and in-person students didn't have equal flexibility when taking the assessment. Middle school teachers also discussed adjusting state assessments to support students who performed poorly academically due to the pandemic.

One teacher said,

I don't know if there's any way to adjust those levels to kind of match where we're at because obviously, if we're using the levels that were established in 2018 and 2019, those aren't going to be correct when we locked down the schools in the spring and then we've had this year of craziness. I don't know if those cut scores, I guess for lack of a better word, if those could be adjusted.

From another middle school teacher:

Those cut scores are...and not just for the remote kids—I think really for all the kids because last spring messed everybody up—and so really those cut scores need to be looked at. Parents are freaking out unnecessarily and absolutely that's the big thing. We've got to fill those gaps, fill those holes, meet the kids where they are, and get them to where they need to be—[that] should be our priority number one, and we need every resource that KSDE can provide to us to help us do that because that's our job, but we can't do it alone and they need to help us out.

High school teachers discussed the reduction of college admission requirements. One teacher was concerned that lowering requirements may lead to lower motivation:

I just fear that, when they're looking at moving on to that next level—if they don't see that they have to do all of these things, they don't have to do well on the ACT, they don't have to have as many credits to graduate now, they don't have to have those same regions requirements to get into some of the schools—it's just another reason for them to not even try to be successful.

Many participants said that various aspects of teaching during the COVID-19 pandemic were “trying,” “difficult,” “exhausting” or “a struggle.” Some teachers noted it was the “hardest year” of their teaching career. Some teachers needed true support and acknowledgement of the difficulties they faced while teaching during the pandemic. This could come in the form of monetary support, emotional support, and support for teachers' health and safety.

Most of my colleague friends have been in this business a really long time, and I haven't talked to anybody who doesn't feel like they're drowning this year—like we're treading water just trying to keep our head above for the entire year, and we're a special breed. We can do that. That's kind of what we signed on for, but we can't do it indefinitely and, at some point, we've kind of got to fill our tanks back up with some real things, not just

the emails that come out: “Remember self-care.” That doesn’t really mean much when it comes down to it unless there’s something backing it up.

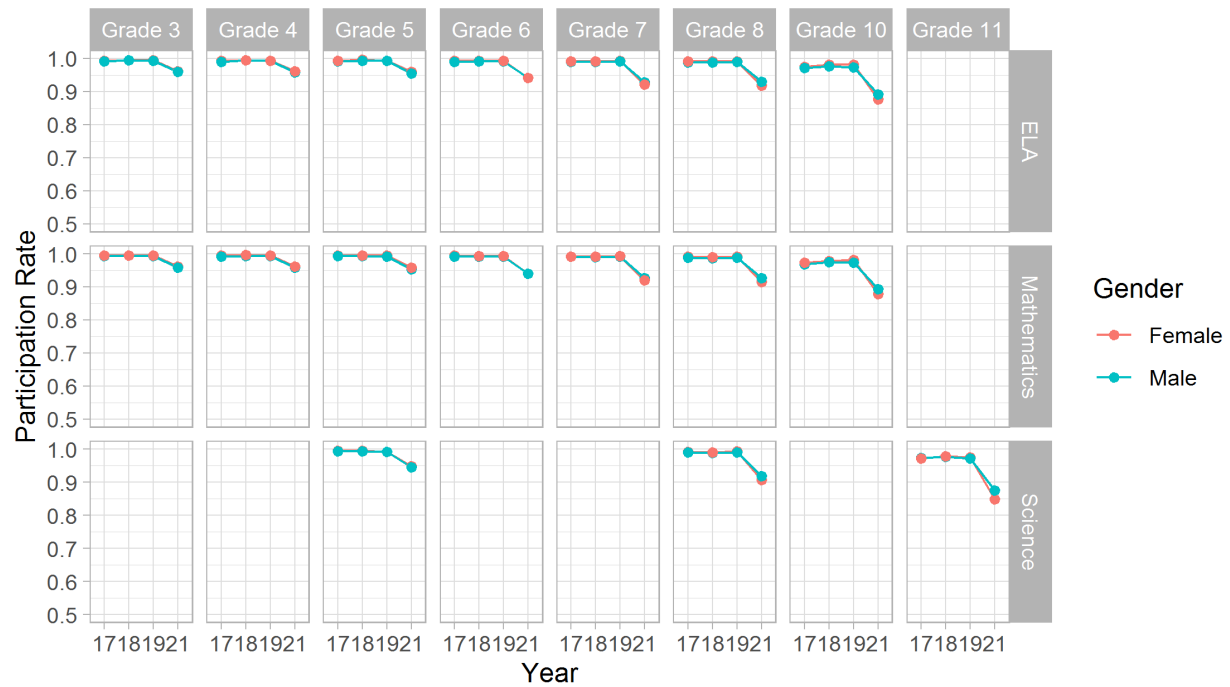
I think we need emotional supports also.... It’s probably the most stressful start to a year...literally the probably hundreds of hours it took to learn new technologies that I needed. And not even knowing what’s out there. The time that it takes us to research.... There also was [a] financial burden on the year. I found myself having to pay out of pocket for a lot of things.

I felt extremely gaslit all year—the toxic positivity, the teachers are heroes—by our administration, at the district level, [they] kept trying to convince us that everything was fine, as we were living in a burning building, as we were barely trying to stay afloat and survive.

A sense of still feeling safe inside my building too. And taking those same considerations that we took for COVID in place for teachers’ health and well-being.... I purposely went remote, I asked to go remote, because my parents, my dad had MS [multiple sclerosis], and he was very susceptible to getting the worst form of COVID. And he did, and he did die in January. And my administration basically didn’t say anything to me about it. So it’s just support, supports for us as teachers. I mean, we struggled through this whole COVID thing to begin with too, it wasn’t just the students struggling or the, you know, community struggling—everybody struggled. And everybody deserves the respect of feeling safe and being able to do their job...in a manner that is respected by everybody. So I think just giving that respect to us, and acknowledging that we are professionals, and we know our job, but that we also need those extra supports in place to help us.

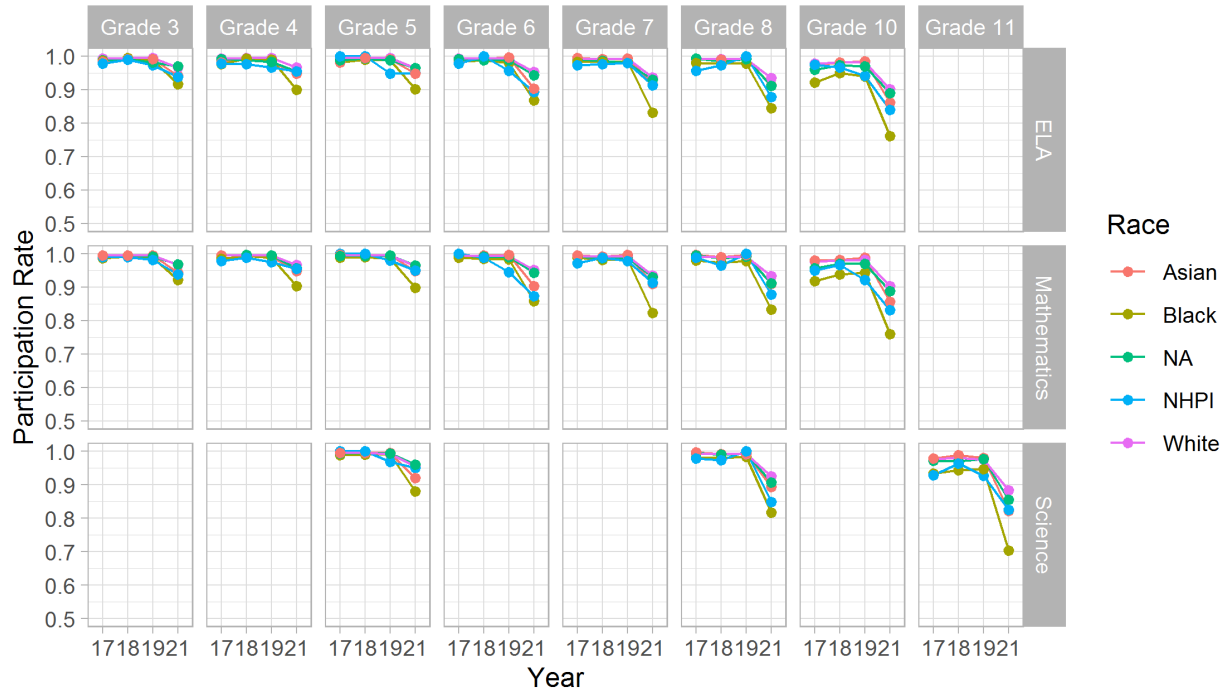
Appendix G: 2017–2021 Participation Rates and Math Rates for Different Student Groups and State Board of Education Districts

Figure G.1. Participation Rates From 2017–2019 by Gender, Subject, and Grade



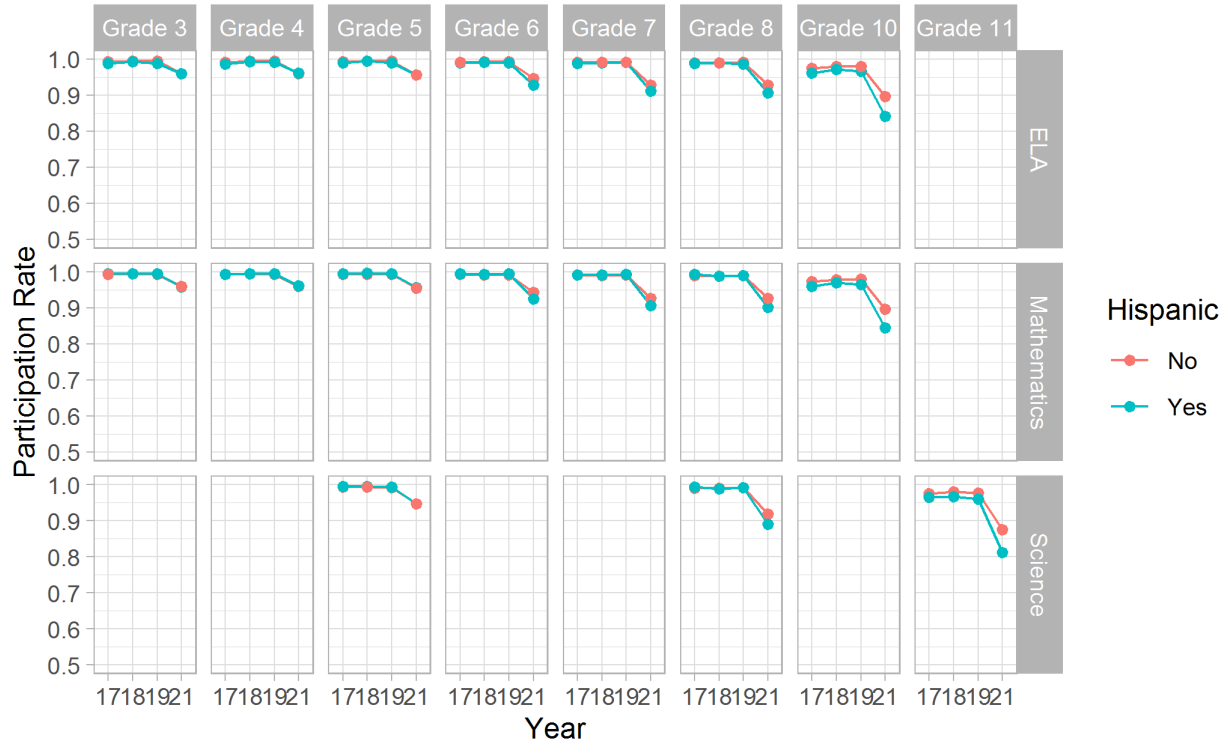
Note. ELA = English language arts.

Figure G.2. Participation Rates From 2017–2019 by Race, Subject, and Grade



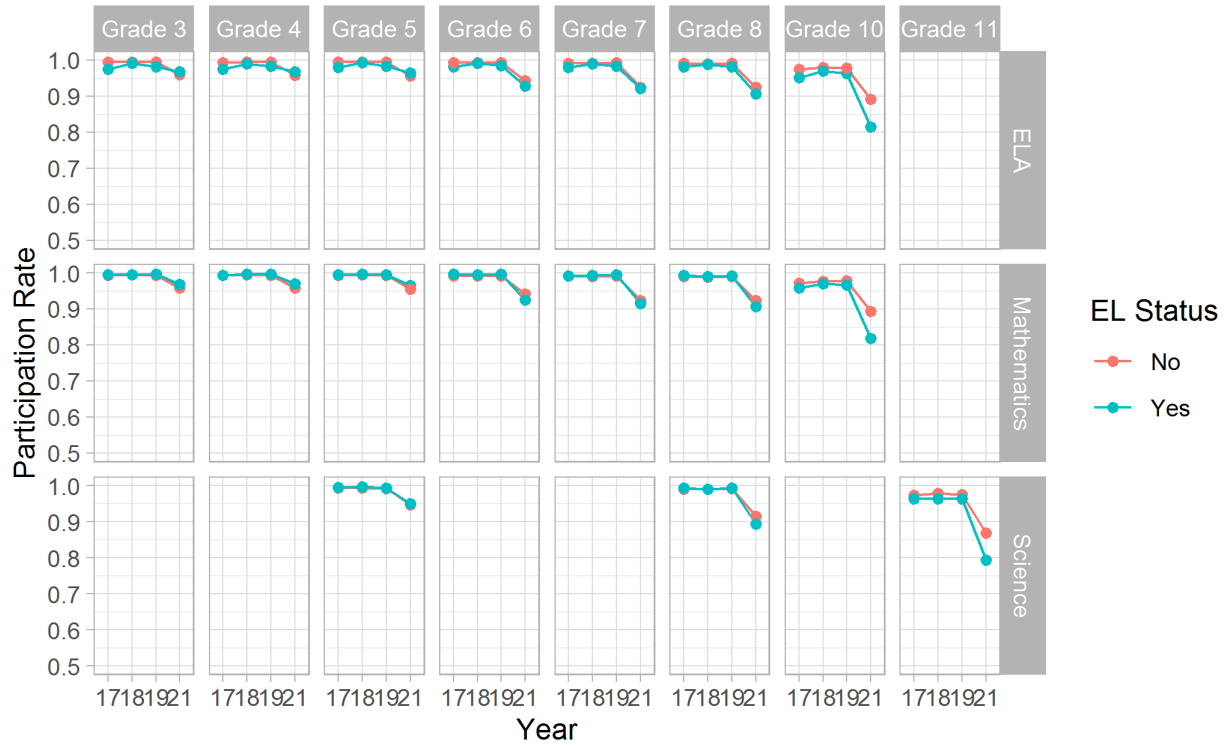
Note. ELA = English language arts; NA = Native American; NHPI = Native Hawaiian and Pacific Islander.

Figure G.3. Participation Rates From 2017–2019 by Ethnicity (Hispanic vs. non-Hispanic), Subject, and Grade



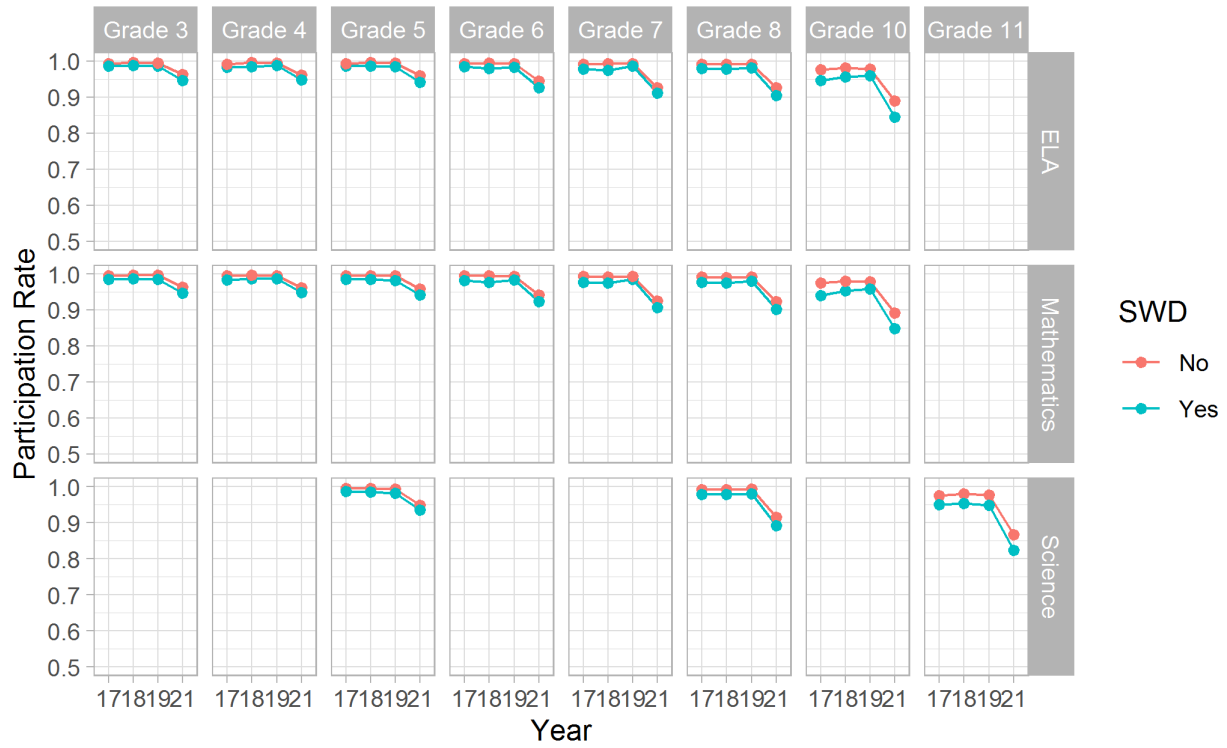
Note. ELA = English language arts.

Figure G.4. Participation Rates From 2017–2019 by English Learner (EL) Status, Subject, and Grade



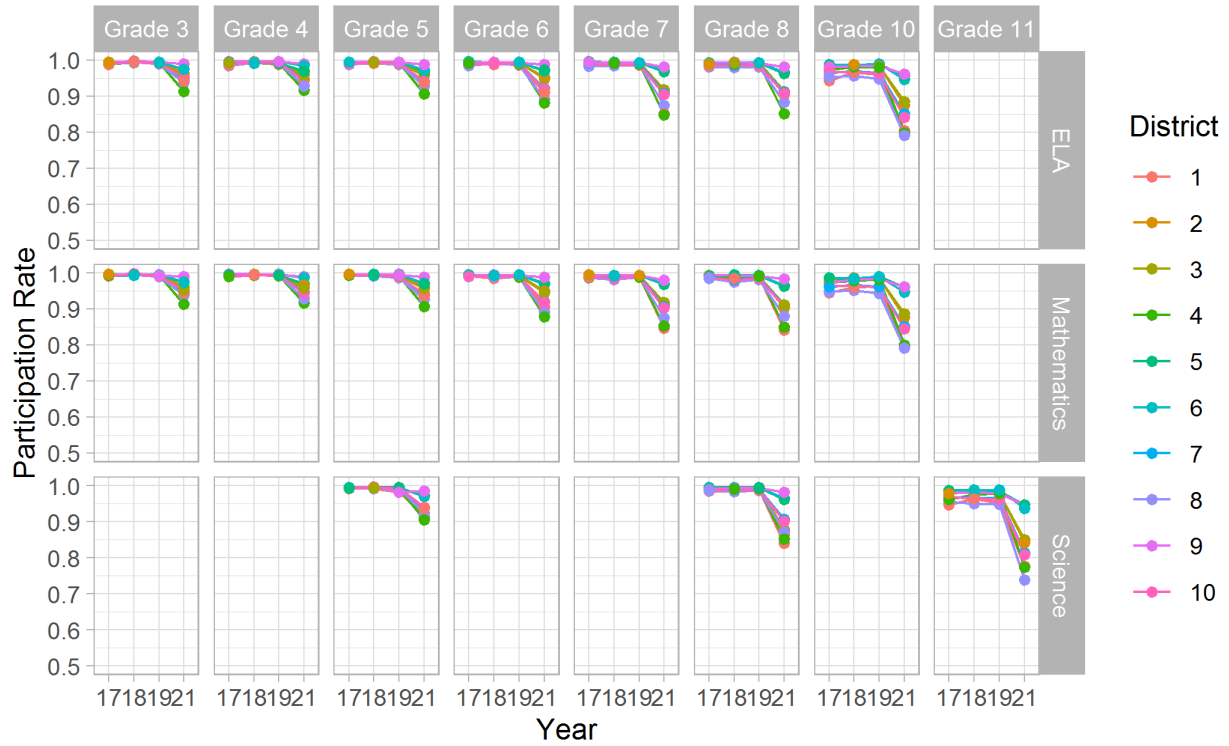
Note. ELA = English language arts.

Figure G.5. Participation Rates From 2017–2019 by Disability Status, Subject, and Grade



Note. ELA = English language arts; SWD = students with disability.

Figure G.6. Participation Rates From 2017–2019 by State Board of Education District, Subject, and Grade



Note. ELA = English language arts.

Table G.1. English Language Arts Match Rate by Demographic Characteristic, State Board of Education District, and Grade

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2019– 2021
Gender										
Female	93	88	92	87	93	85	93	86	90	82
Male	93	88	92	87	93	86	93	87	88	82
Race										
Asian	90	85	91	82	91	83	93	84	90	80
Black	87	78	85	74	87	72	86	74	80	67
NA	91	86	90	85	91	85	91	83	87	81
NHPI	73	75	72	64	78	72	73	80	64	62
White	93	89	93	89	93	87	94	88	91	83
Hispanic										
No	92	88	92	87	93	86	93	87	90	83
Yes	93	89	92	86	92	85	93	85	87	77
EL										
No	93	88	92	87	93	86	93	86	90	82
Yes	92	89	92	85	92	82	92	80	86	69
SWD										
No	93	88	92	87	93	86	93	86	90	82
Yes	89	85	89	83	89	82	89	83	84	75
District										
1	90	84	89	81	90	76	91	77	84	72
2	93	88	93	88	94	85	94	85	90	81
3	93	89	94	89	94	86	94	86	91	83
4	94	84	93	81	93	79	94	81	89	75
5	93	92	93	92	92	92	93	91	91	88
6	87	85	89	85	88	86	89	87	89	84
7	91	85	91	84	91	82	91	83	88	78
8	94	85	93	82	93	81	92	82	87	74
9	93	91	93	90	93	91	93	91	91	88
10	94	87	93	85	93	84	93	85	89	79

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Table G.2. Mathematics Match Rate by Demographic Characteristic, State Board of Education District, and Grade

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019	2017– 2019	2019– 2021	2017– 2019	2019– 2021	2017– 2019
Gender										
Female	93	88	92	87	92	85	93	85	90	82
Male	92	88	92	87	92	86	93	87	88	82
Race										
Asian	89	85	90	81	90	82	92	84	90	79
Black	86	77	85	73	86	72	86	73	80	67
NA	91	86	89	85	91	85	91	83	87	82
NHPI	72	76	72	64	76	73	74	82	63	61
White	93	89	93	88	93	87	93	88	90	84
Hispanic										
No	92	88	92	87	92	86	93	86	90	83
Yes	93	89	92	86	92	84	92	84	87	77
EL										
No	92	88	92	87	92	86	93	86	90	83
Yes	91	88	91	84	91	81	92	79	85	69
SWD										
No	92	88	92	86	93	85	93	86	90	82
Yes	89	85	89	83	89	82	89	82	84	76
District										
1	90	84	89	80	90	75	91	76	84	71
2	93	88	93	88	93	85	94	84	90	81
3	93	89	94	88	94	86	94	86	91	83
4	93	84	93	80	93	79	94	80	89	75
5	93	92	93	92	92	92	92	91	91	88
6	87	84	89	85	88	86	89	87	88	84
7	91	85	90	83	91	82	90	83	88	78
8	93	85	92	82	92	81	92	82	87	74
9	93	91	93	90	93	90	93	91	91	88
10	94	87	93	85	93	84	93	85	89	79

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Appendix H: 2019 and 2021 Person-Misfit Flagging Rates for Different Student Groups and State Board of Education Districts

Table H.1. 2019 and 2021 KAP English Language Arts Percentage of Students Flagged for Misfit by Student Group, State Board of Education District, and Grade

	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
Gender														
Female	3	4	4	5	4	4	3	4	3	3	4	5	3	4
Male	3	3	4	5	4	5	4	4	3	3	6	7	4	5
Race														
Asian	3	3	3	4	3	4	3	3	3	3	4	3	4	4
Black	3	4	6	6	5	6	4	5	3	4	8	9	5	4
MR	3	3	5	5	4	4	4	4	6	3	5	7	4	4
NA	5	4	5	4	5	5	3	5	4	3	6	7	5	4
NHPI	2	4	3	6	3	5	6	4	3	5	5	5	3	4
White	3	3	4	5	4	4	4	4	3	3	6	6	4	4
Hispanic														
No	3	3	4	5	4	4	3	4	3	3	5	6	4	4
Yes	4	4	5	5	4	4	4	5	3	3	6	7	5	5

	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
EL														
No	3	3	4	5	4	4	3	4	3	3	5	6	4	4
Yes	4	4	5	6	5	5	5	5	3	4	6	8	6	6
SWD														
No	3	3	4	5	4	4	4	4	3	3	5	5	4	4
Yes	3	4	4	6	5	7	5	6	4	4	10	9	6	6
District														
1	3	4	4	5	4	5	4	4	3	3	7	7	4	4
2	2	3	3	4	4	3	3	3	3	3	5	6	4	4
3	2	3	3	4	4	4	3	3	3	3	5	6	4	4
4	3	3	4	5	4	5	3	4	2	3	6	7	4	4
5	3	4	4	5	4	5	4	4	3	3	6	5	4	4
6	3	3	4	5	4	4	4	4	3	3	5	6	3	4
7	3	3	4	5	4	4	4	4	3	3	6	6	4	4
8	3	4	5	6	4	5	4	4	3	3	6	7	4	5
9	3	3	4	5	4	5	4	4	3	3	5	6	4	5
10	3	4	4	5	4	4	4	4	3	3	6	6	4	5

Note. MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Table H.2. 2019 and 2021 KAP Mathematics Percentage of Students Flagged for Misfit by Student Group, State Board of Education District, and Grade

	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
Gender														
Female	4	6	3	5	3	4	3	4	4	5	5	6	6	6
Male	4	7	4	6	4	5	4	5	4	6	6	7	7	8
Race														
Asian	3	6	3	5	2	3	2	4	4	4	4	5	5	5
Black	6	12	5	8	4	6	5	6	6	7	7	9	7	10
MR	5	7	5	6	3	5	3	4	3	6	6	6	6	7
NA	6	7	4	7	4	6	3	5	5	6	7	8	8	9
NHPI	8	10	4	10	5	7	0	4	4	5	1	16	12	11
White	4	6	4	5	3	4	3	4	4	5	6	6	6	7
Hispanic														
No	4	6	4	5	3	4	3	4	4	5	5	6	6	7
Yes	5	9	5	7	4	5	4	5	5	7	7	8	7	8
EL														
No	4	6	4	5	3	4	4	4	4	5	6	6	6	7
Yes	6	10	5	9	4	6	4	5	5	8	7	10	9	10
SWD														
No	4	5	4	5	3	4	3	4	4	4	6	6	6	6
Yes	6	13	5	9	5	9	5	7	8	11	9	11	10	13

District	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
1	4	8	4	6	3	5	4	5	4	5	6	7	7	8
2	3	5	3	4	3	4	3	4	4	4	5	5	6	7
3	3	5	3	4	3	4	3	4	3	4	5	5	6	6
4	5	7	4	5	4	5	3	4	4	5	6	6	6	7
5	4	7	4	6	4	5	3	4	5	5	6	6	7	8
6	4	5	4	5	4	4	4	4	4	5	6	6	6	7
7	5	8	5	7	4	5	4	6	5	6	6	8	6	8
8	5	9	5	8	3	6	4	6	5	7	7	8	7	8
9	4	6	4	5	3	4	3	4	4	6	6	6	5	7
10	4	8	5	7	3	5	4	5	4	6	6	8	6	7

Note. MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Table H.3. 2019 and 2021 KAP Science Percentage of Students Flagged for Misfit by Student Group, State Board of Education District, and Grade

	Grade 5		Grade 8		Grade 11	
	2019 (%)	2021 (%)	2019 (%)	2021 (%)	2019 (%)	2021 (%)
Gender						
Female	2	3	2	2	2	2
Male	2	3	3	3	2	2
Race						
Asian	2	2	2	2	2	1
Black	4	4	4	3	2	2
MR	2	3	2	2	3	2
NA	2	4	3	3	2	2
NHPI	3	3	3	2	3	2
White	2	2	2	2	2	2
Hispanic						
No	2	2	2	2	2	2
Yes	3	3	3	3	2	2
EL						
No	2	2	2	2	2	2
Yes	3	4	3	3	2	2
SWD						
No	2	2	2	2	2	2
Yes	3	5	4	4	1	2
District						
1	2	3	2	3	2	2
2	1	2	2	2	2	1
3	1	2	2	2	2	2
4	2	2	2	3	2	1
5	3	3	2	2	2	2
6	2	2	3	3	2	2
7	2	3	3	2	2	2
8	2	3	3	3	2	2
9	2	2	2	3	2	2
10	2	3	3	2	2	2

Note. MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Appendix I: 2017–2021 Mean Scale Scores for Different Student Groups and State Board of Education Districts

Figure I.1. English Language Arts Mean Scale Score From 2017 to 2021 by Gender and Grade

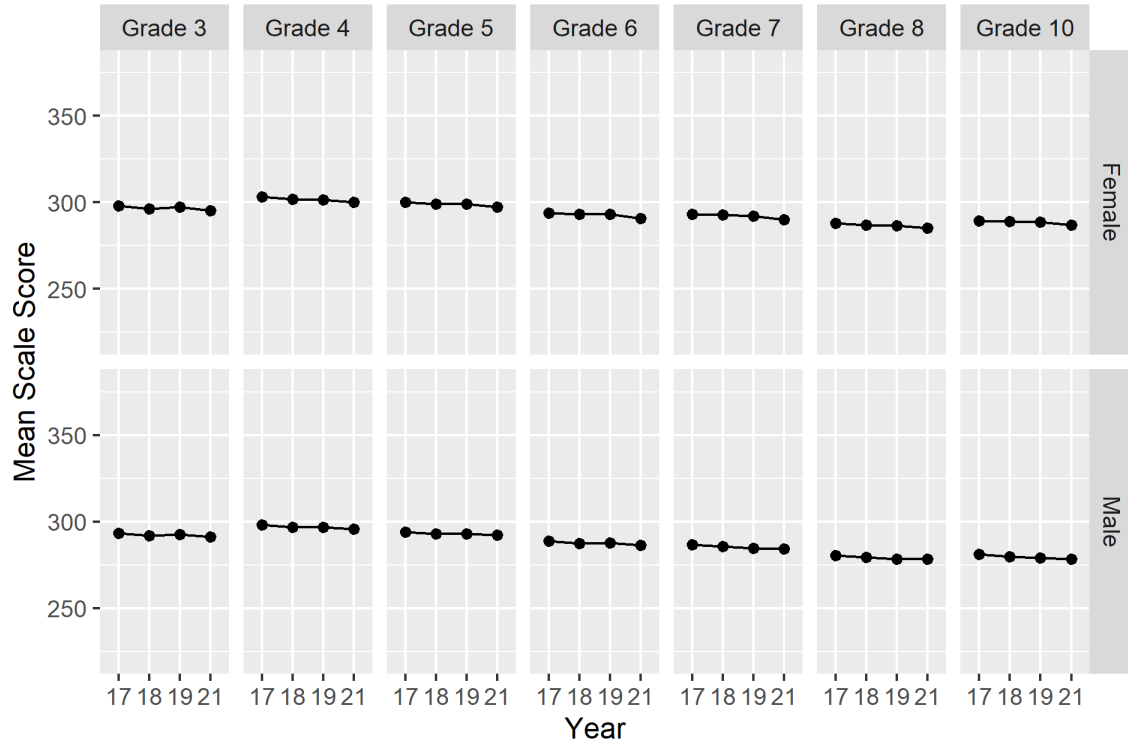


Figure I.2. Mathematics Mean Scale Score From 2017 to 2021 by Gender and Grade

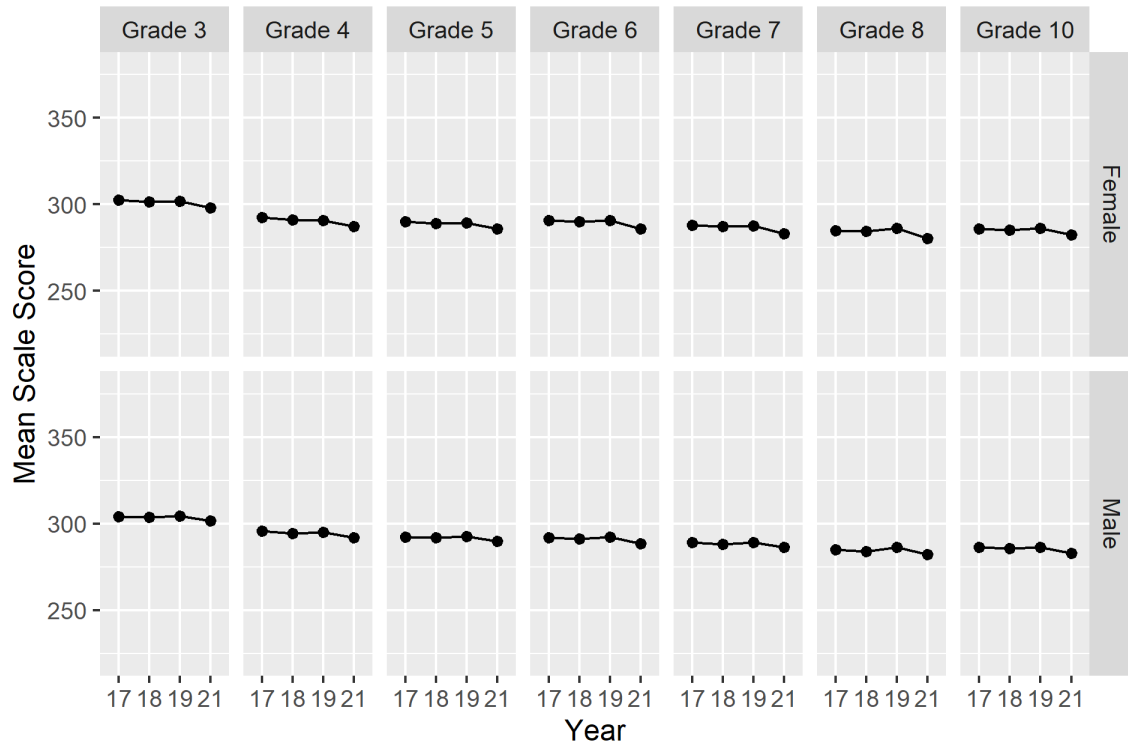


Figure I.3. Science Mean Scale Score From 2017 to 2021 by Gender and Grade

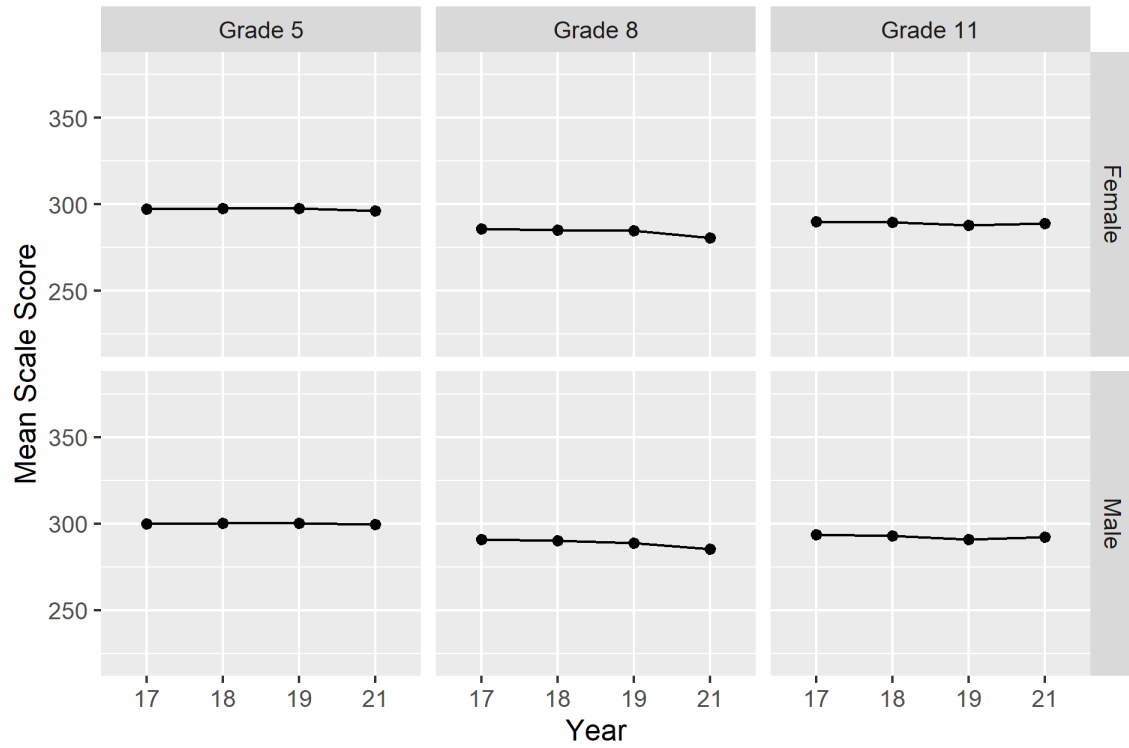
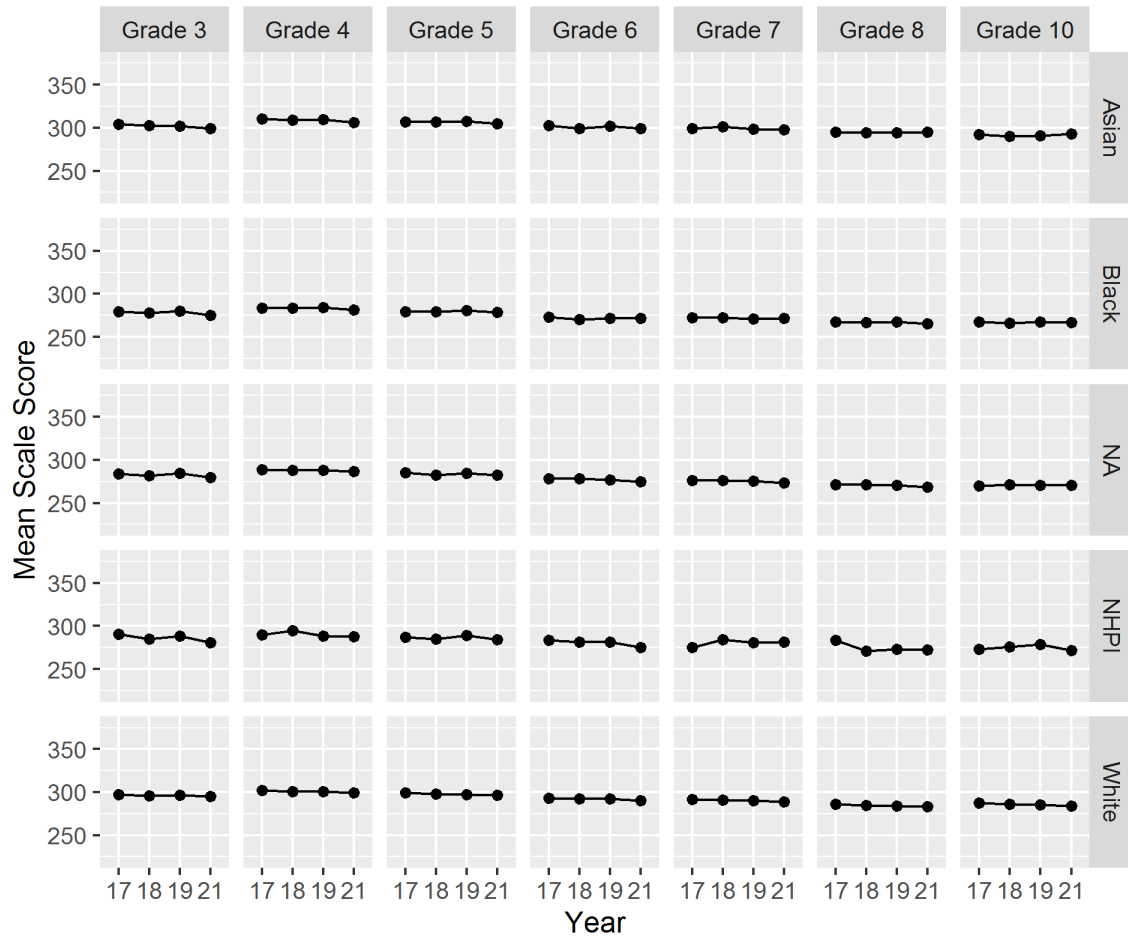
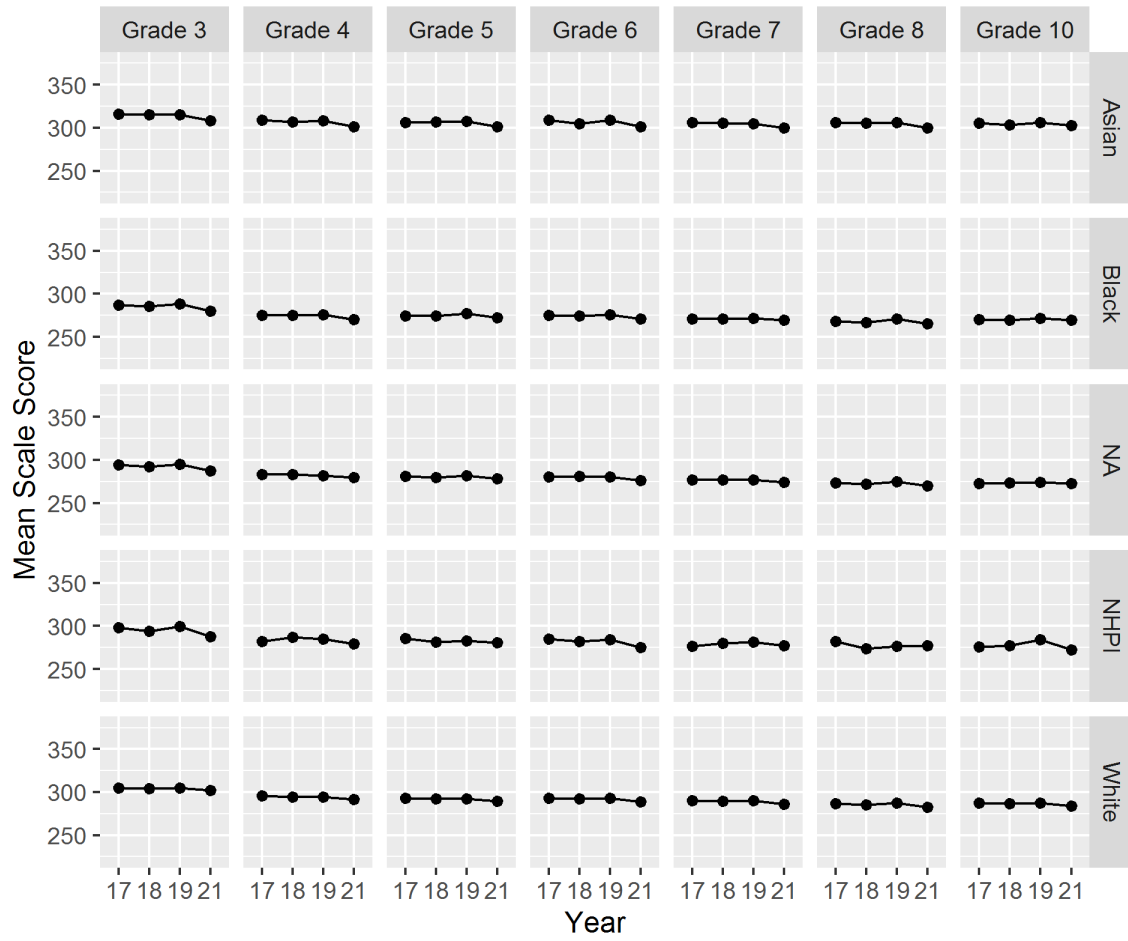


Figure I.4. English Language Arts Mean Scale Score From 2017 to 2021 by Race and Grade



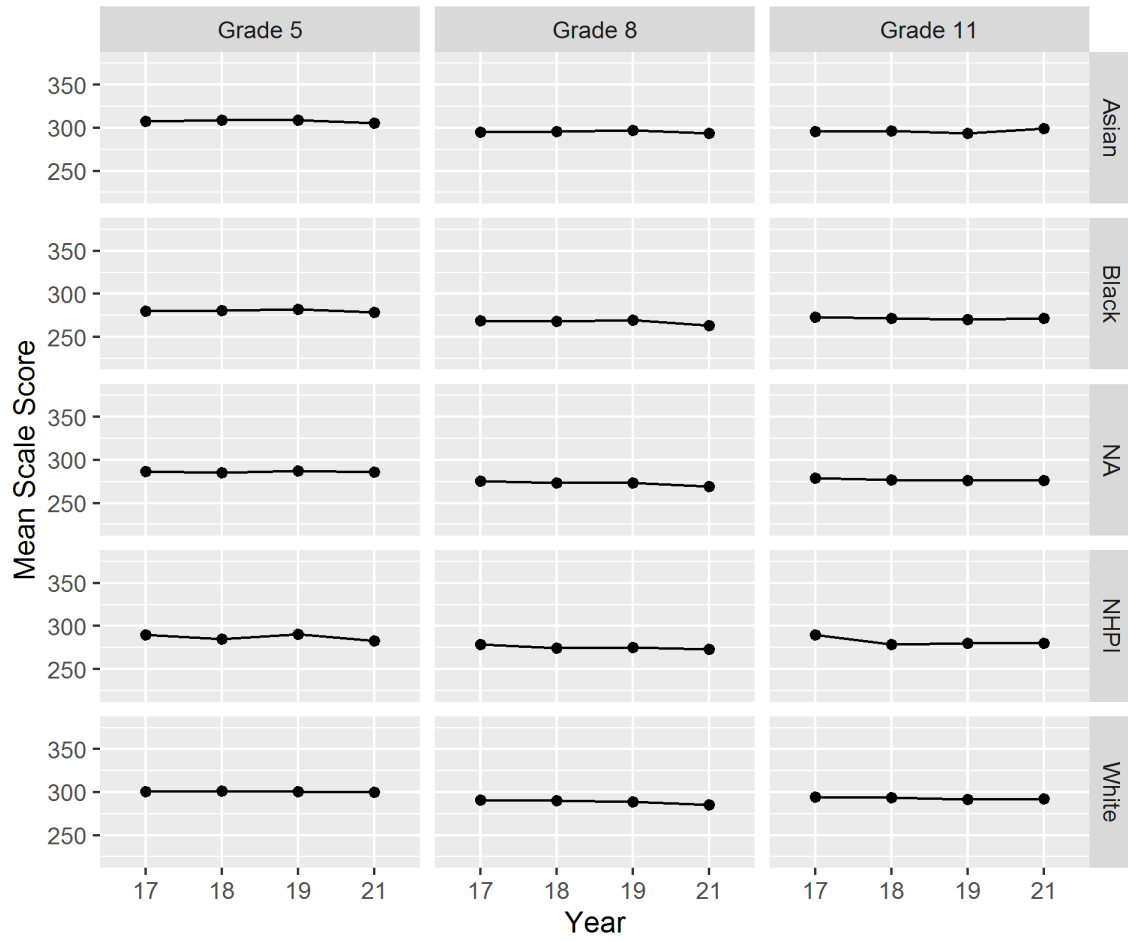
Note. NA= Native American; NHPI = Native Hawaiian and Pacific Islander.

Figure I.5. Mathematics Mean Scale Score From 2017 to 2021 by Race and Grade



Note. NA= Native American; NHPI = Native Hawaiian and Pacific Islander.

Figure I.6. Science Mean Scale Score From 2017 to 2021 by Race and Grade



Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander.

Figure I.7. English Language Arts Mean Scale Score From 2017 to 2021 by Ethnicity (Hispanic vs. Non-Hispanic) and Grade

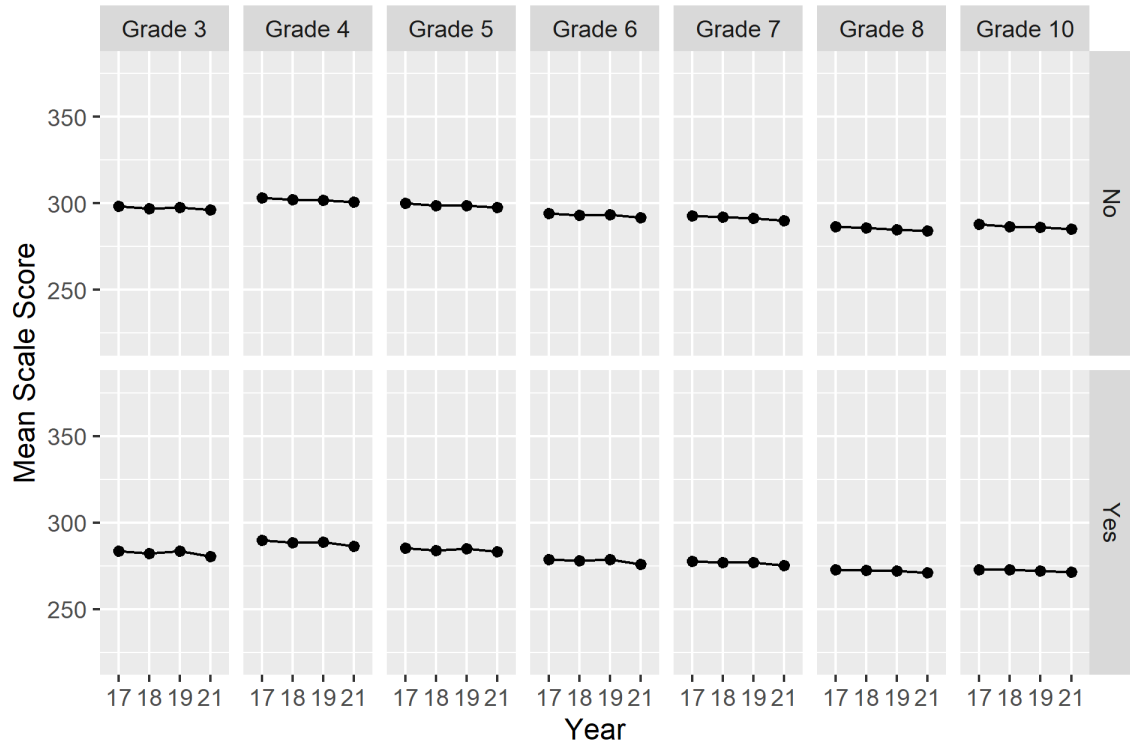


Figure I.8. Mathematics Mean Scale Score From 2017 to 2021 by Ethnicity (Hispanic vs. Non-Hispanic) and Grade

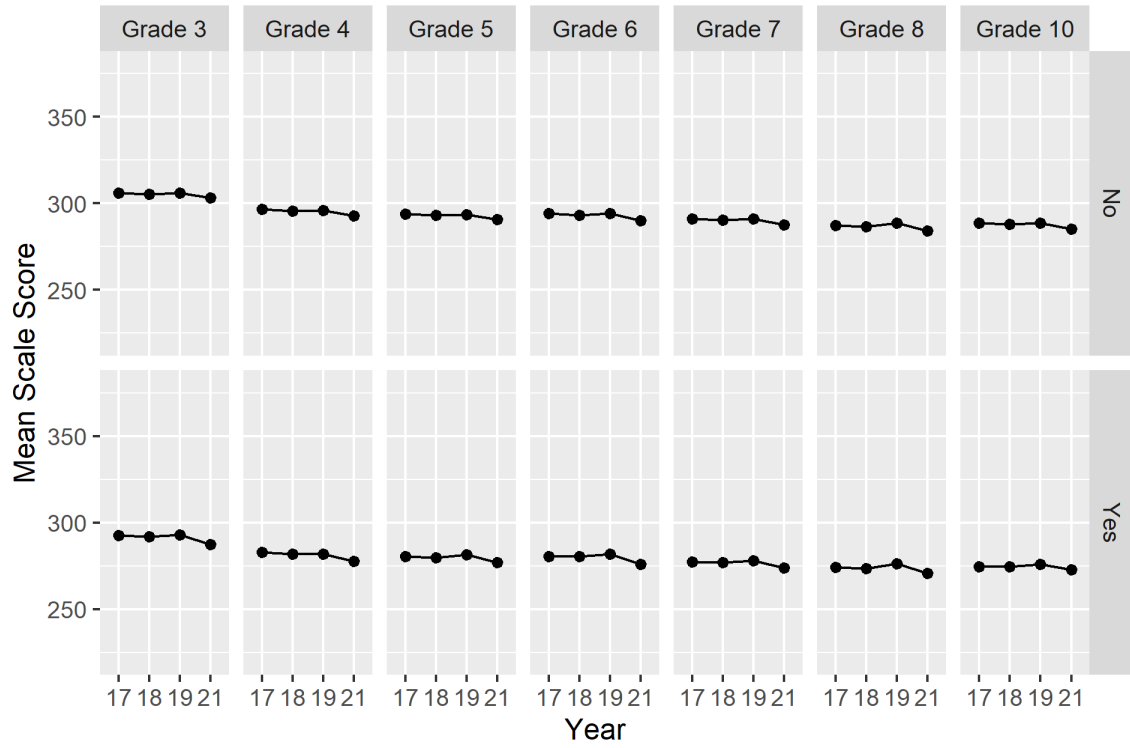


Figure I.9. Science Mean Scale Score From 2017 to 2021 by Ethnicity (Hispanic vs. Non-Hispanic) and Grade

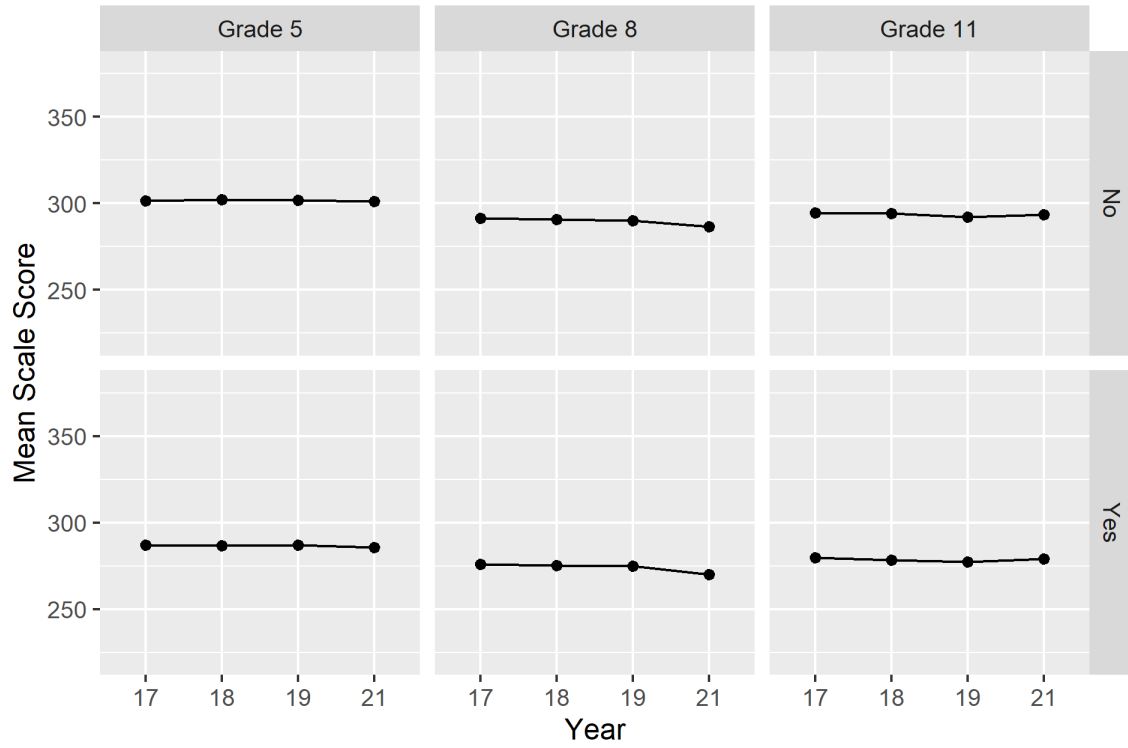


Figure I.10. English Language Arts Mean Scale Score From 2017 to 2021 by English Learner Status and Grade

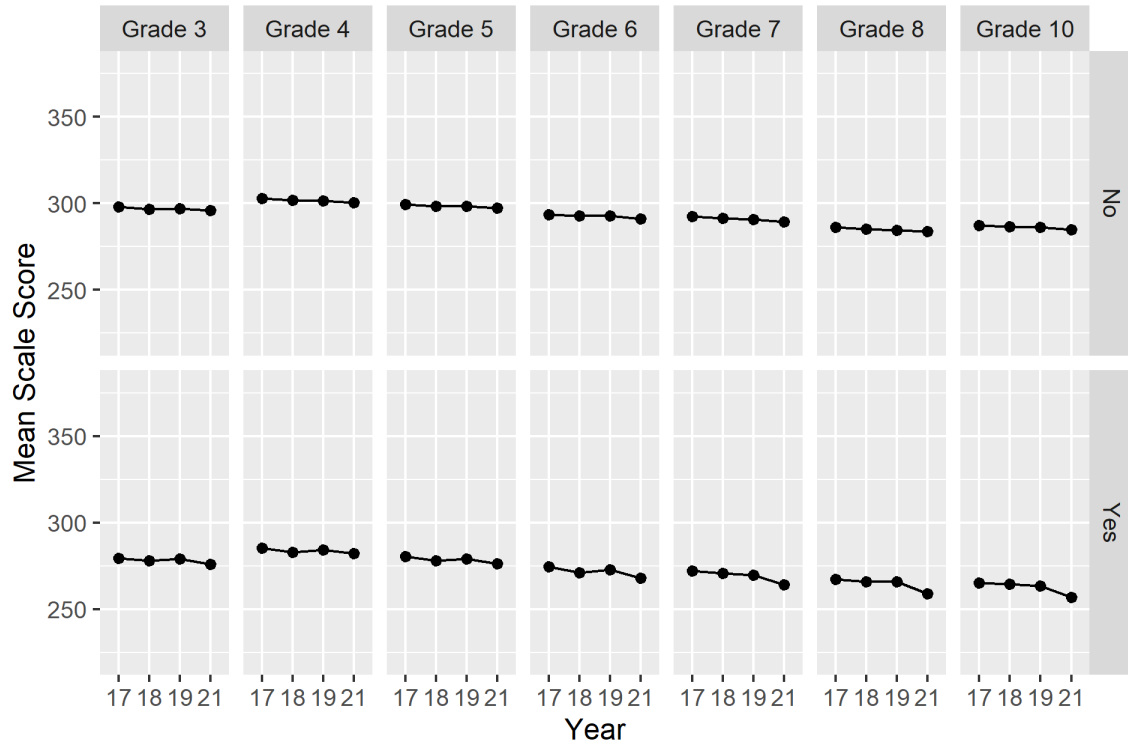


Figure I.11. Mathematics Mean Scale Score From 2017 to 2021 by English Learner Status and Grade

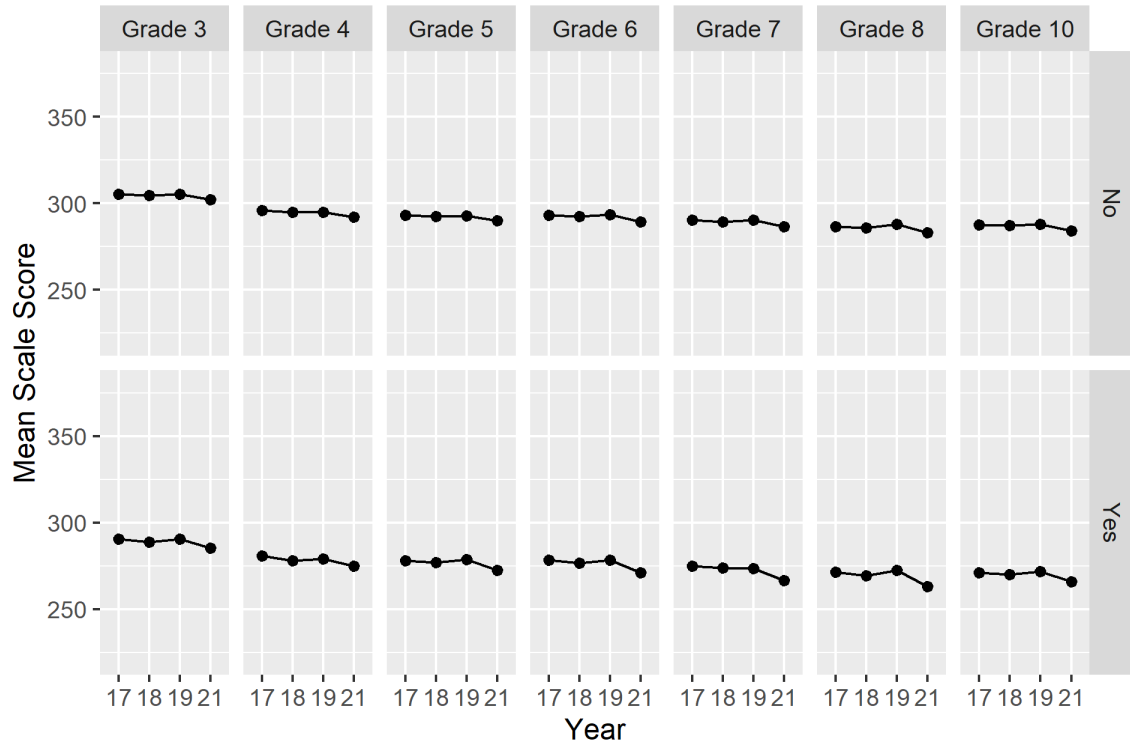


Figure I.12. Science Mean Scale Score From 2017 to 2021 by English Learner Status and Grade

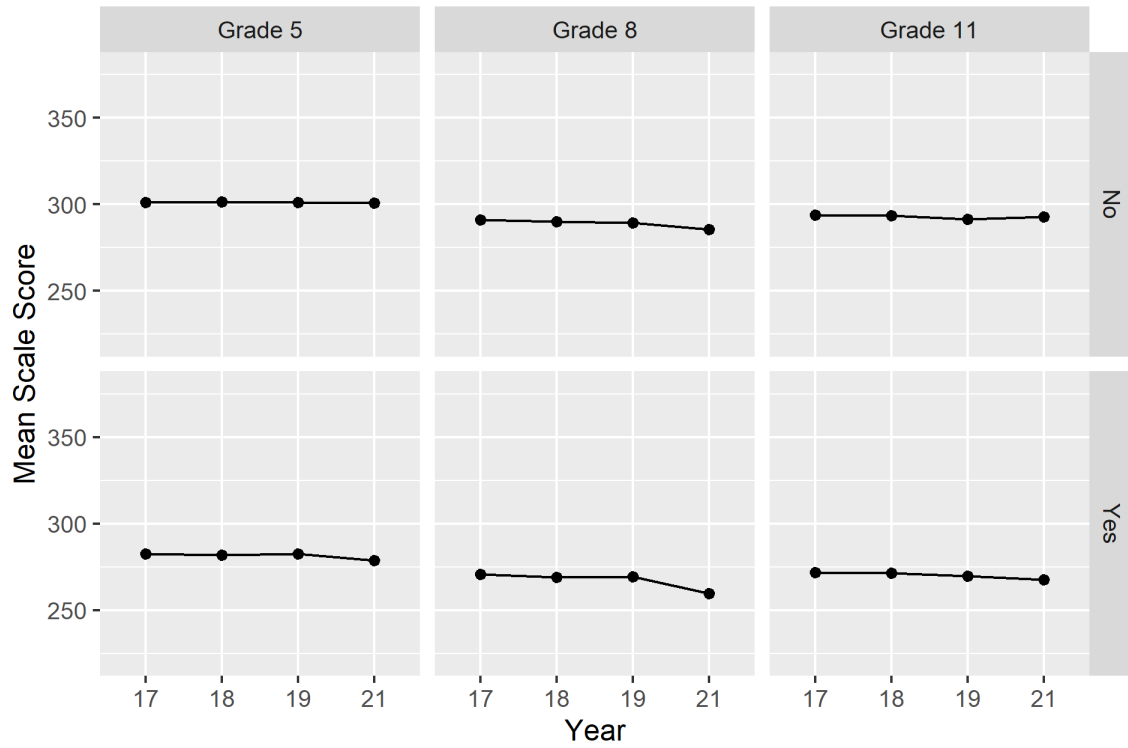


Figure I.13. English Language Arts Mean Scale Score From 2017 to 2021 by Disability Status and Grade

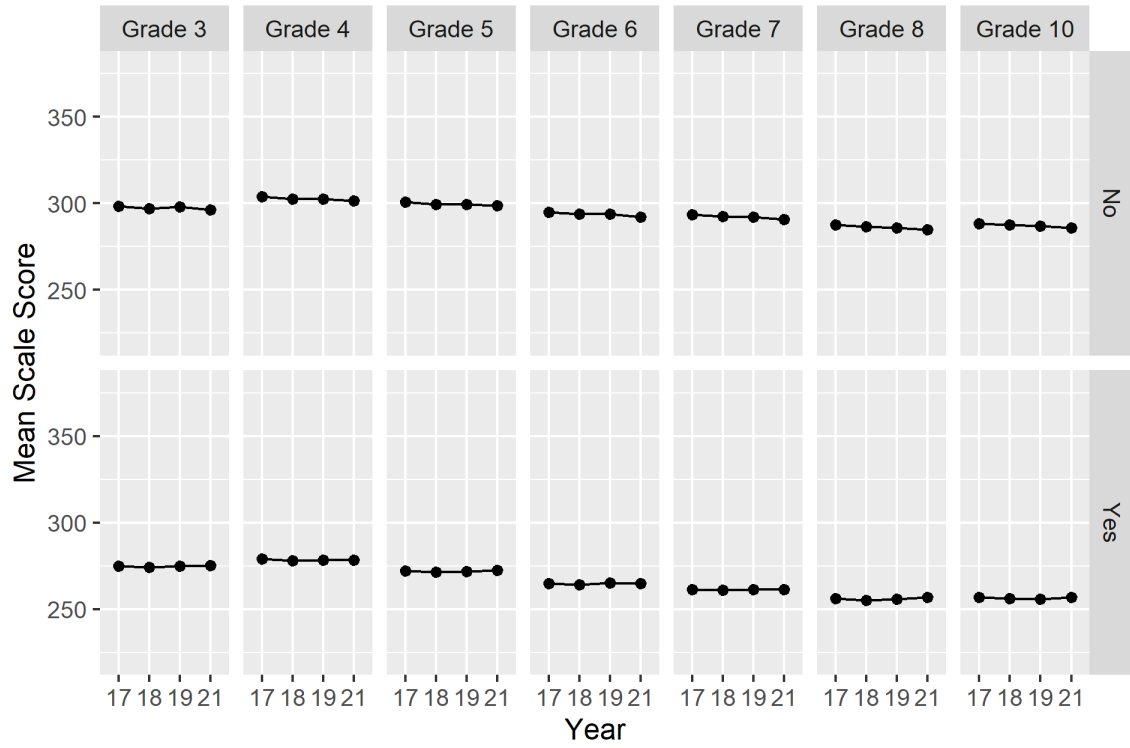


Figure I.14. Mathematics Mean Scale Score From 2017–2021 by Disability Status and Grade

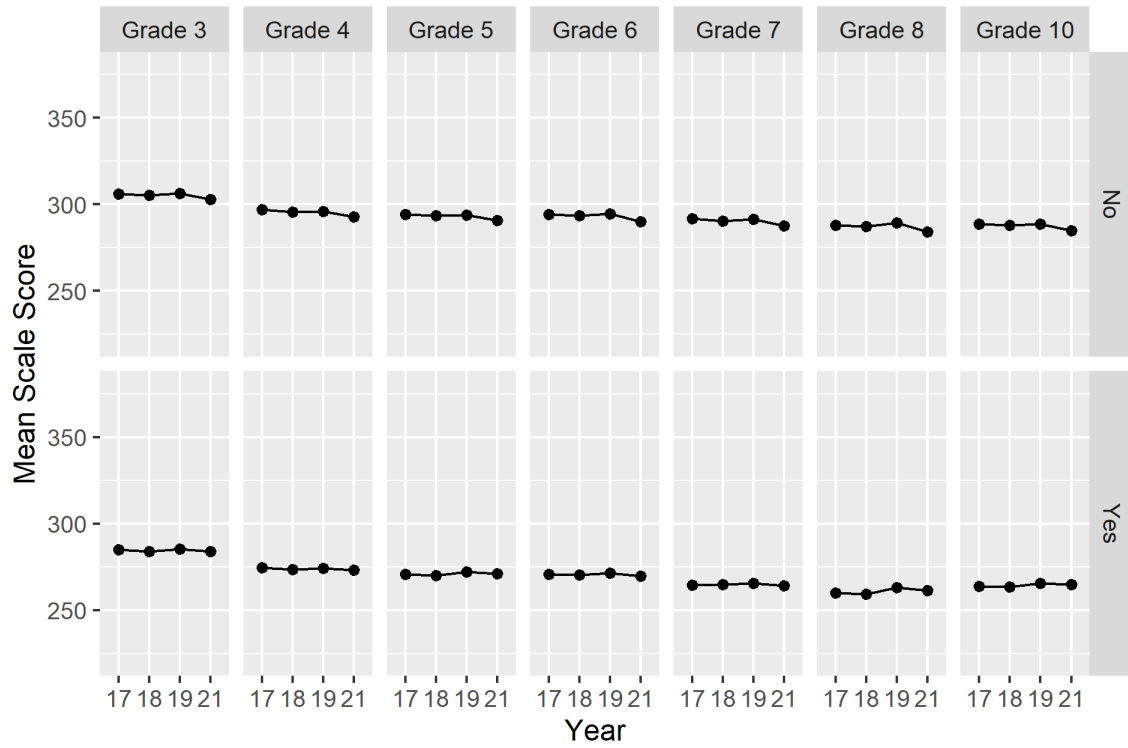


Figure I.15. Science Mean Scale Score From 2017–2021 by Disability Status and Grade

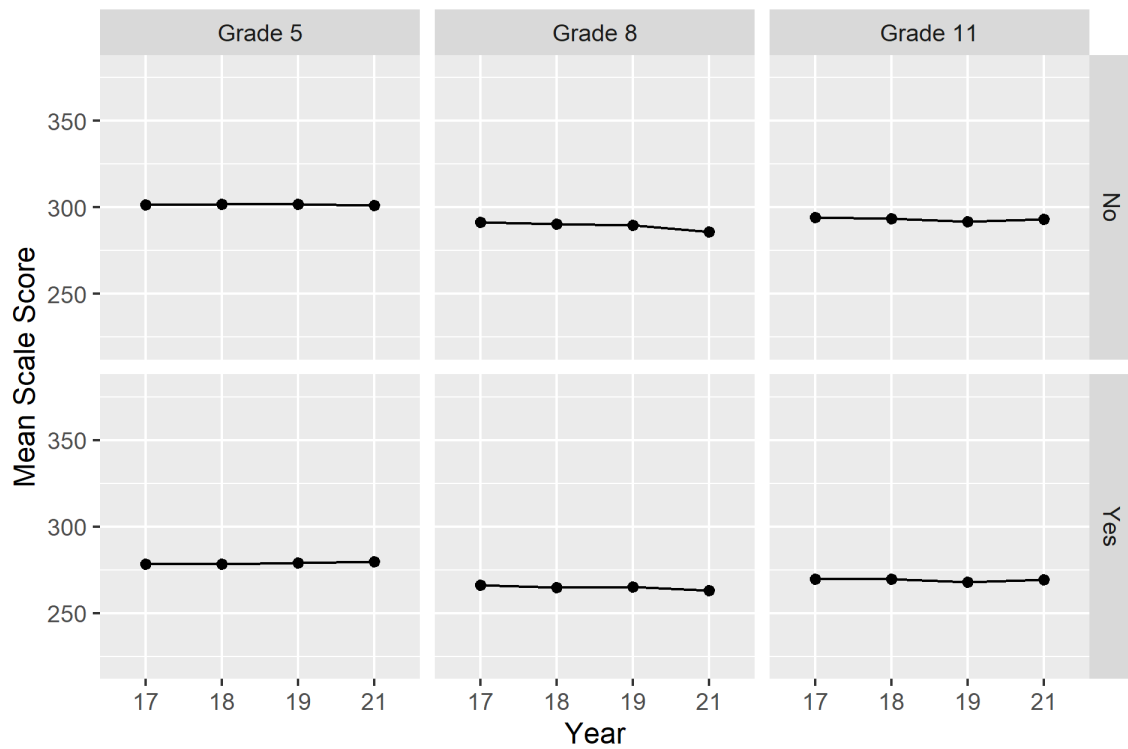


Figure I.16. English Language Arts Mean Scale Score From 2017 to 2021 by State Board of Education District and Grade

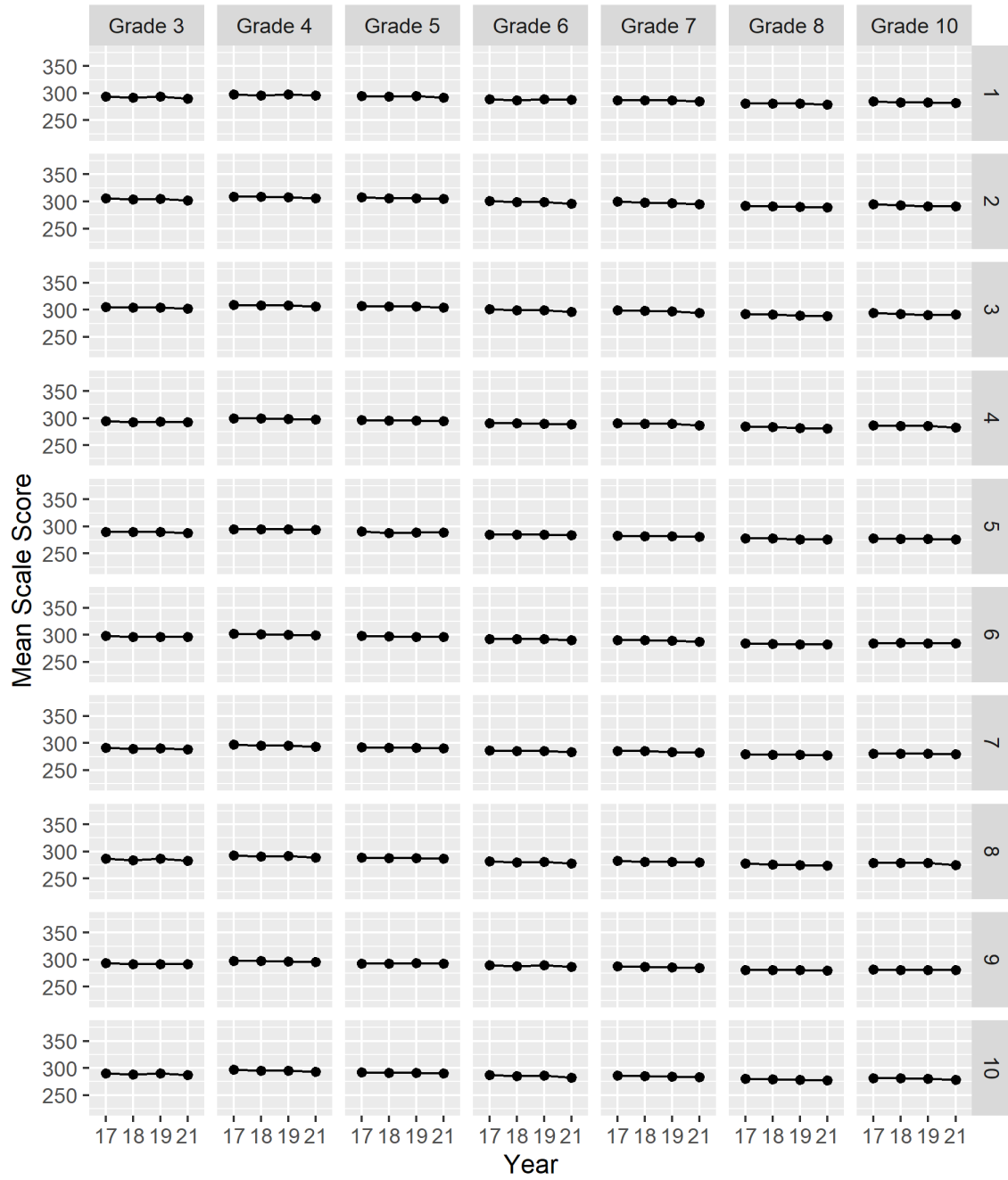


Figure I.17. Mathematics Mean Scale Score From 2017 to 2021 by State Board of Education District and Grade

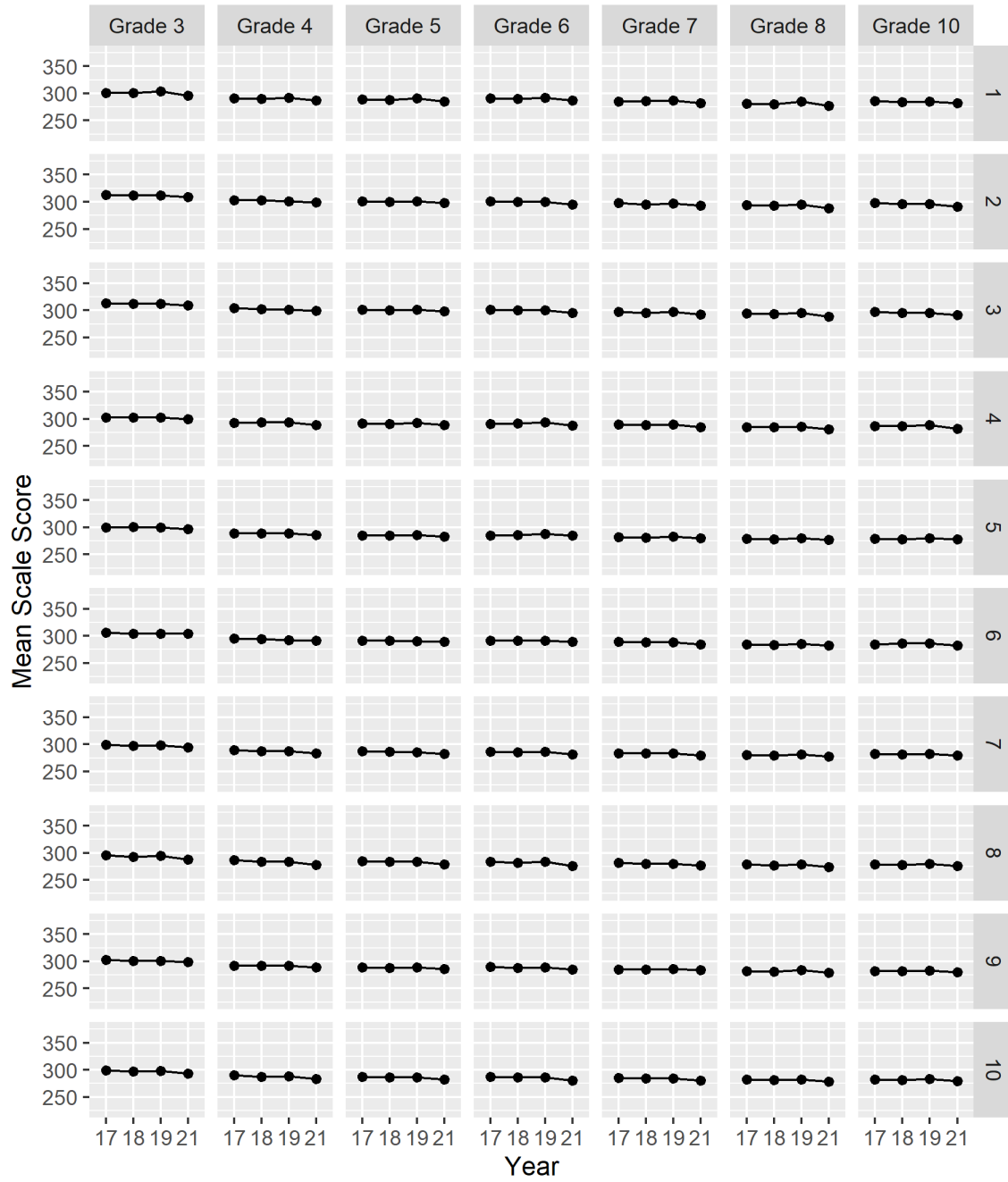
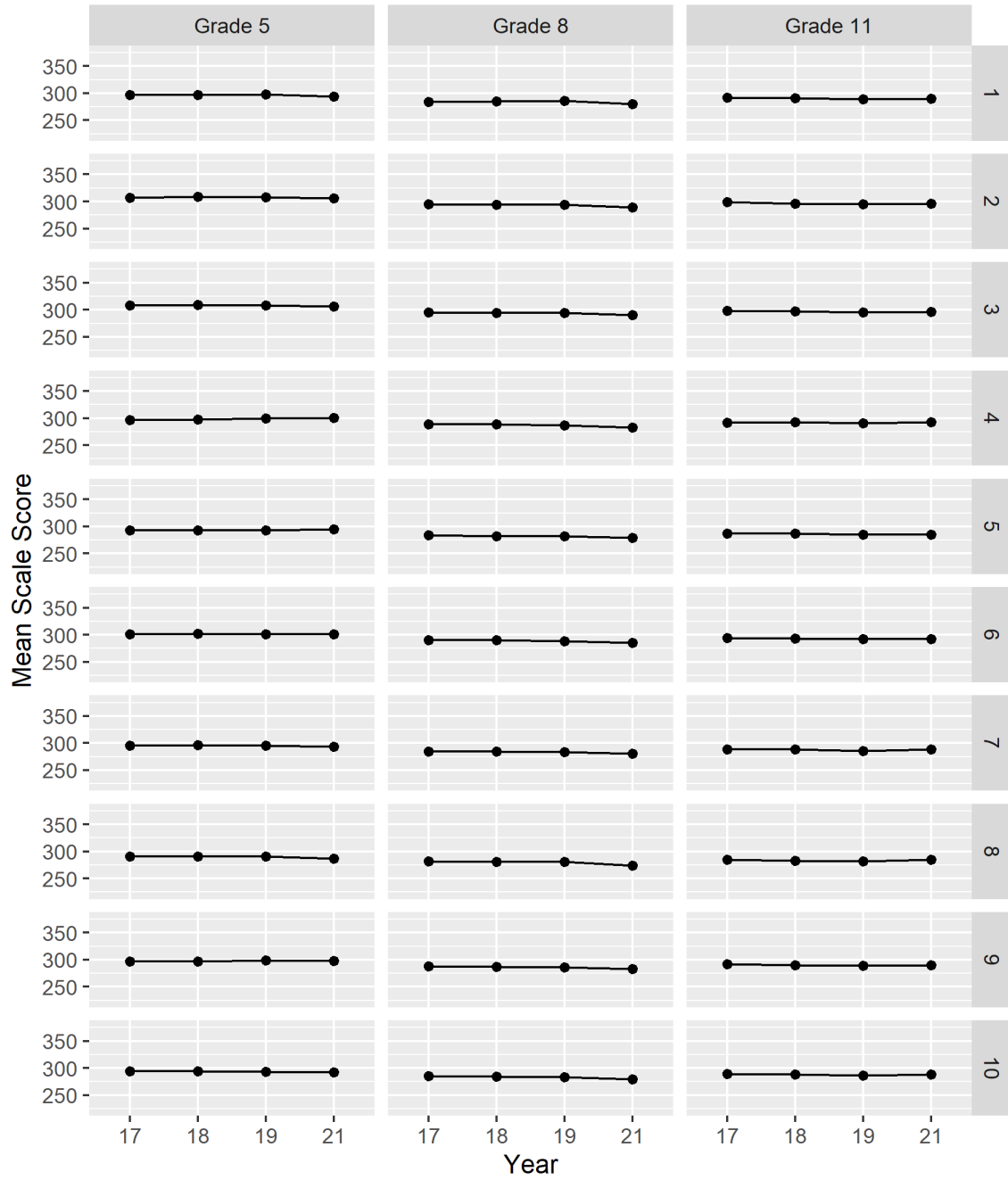


Figure I.18. Science Mean Scale Score From 2017 to 2021 by State Board of Education District and Grade



Appendix J: Regression Assumption Checking

Figure J.1. Scatter Plots Between 2017 and 2019 KAP Scale Scores by Subject and Grade

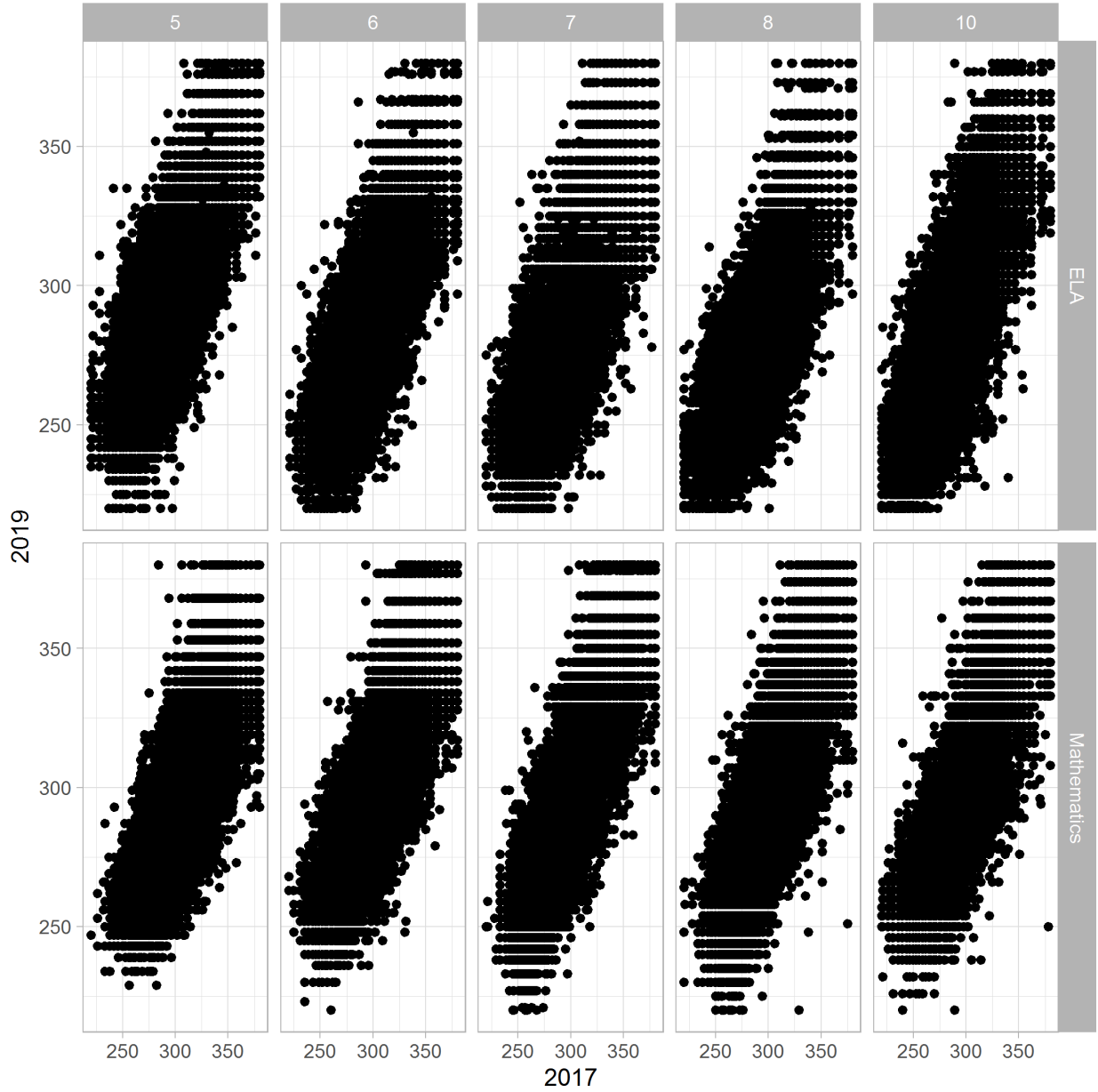
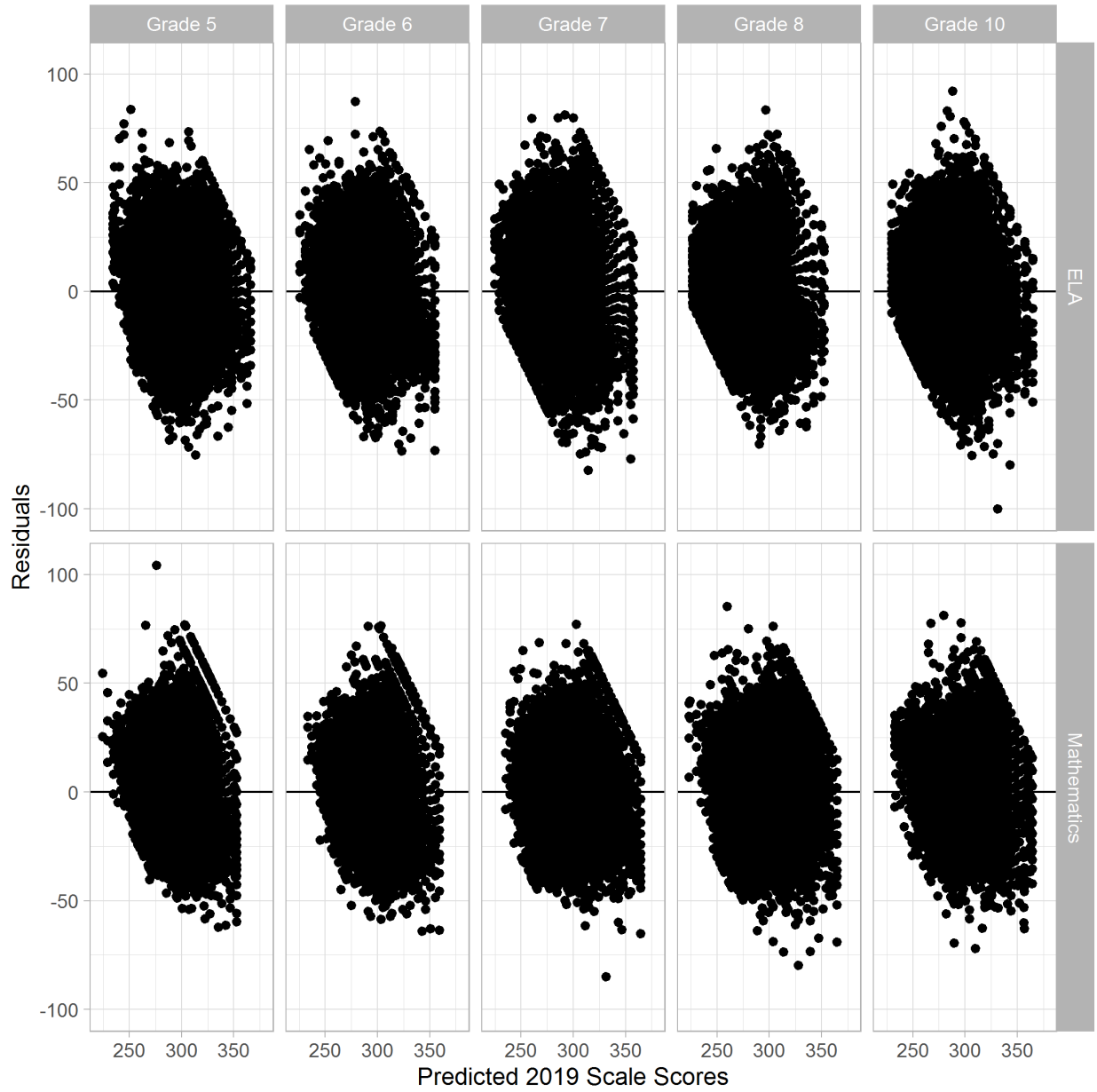


Table J.1. R² of Linear Regression and Second-Order Polynomial Regression

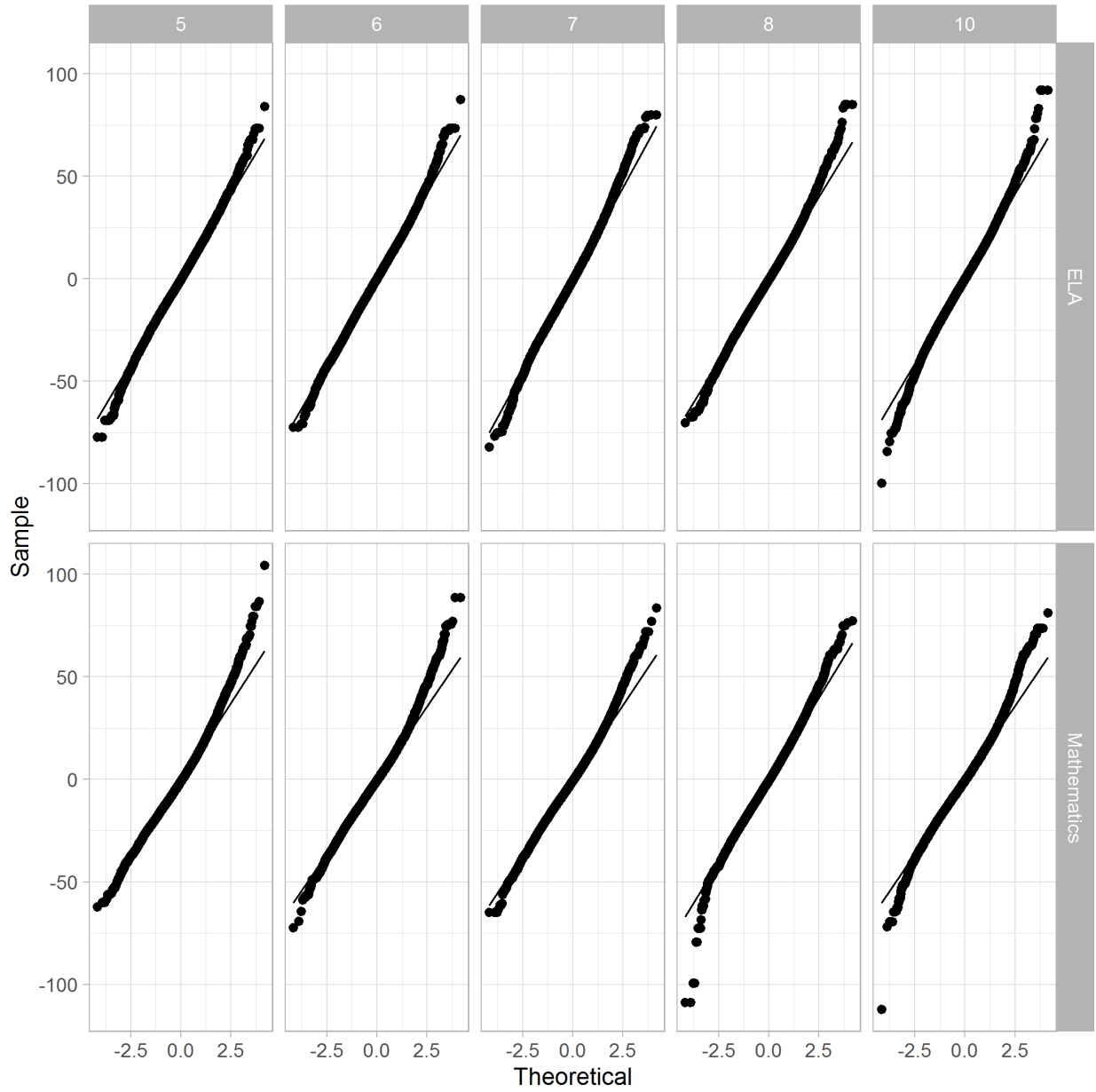
Subject	Grade	Linear regression	Second order polynomial regression
English language arts	5	.664	.665
	6	.639	.639
	7	.625	.626
	8	.645	.646
	10	.644	.645
Mathematics	5	.660	.667
	6	.681	.687
	7	.685	.687
	8	.666	.667
	10	.695	.703

Figure J.2. Residual Plot by Subject and Grade



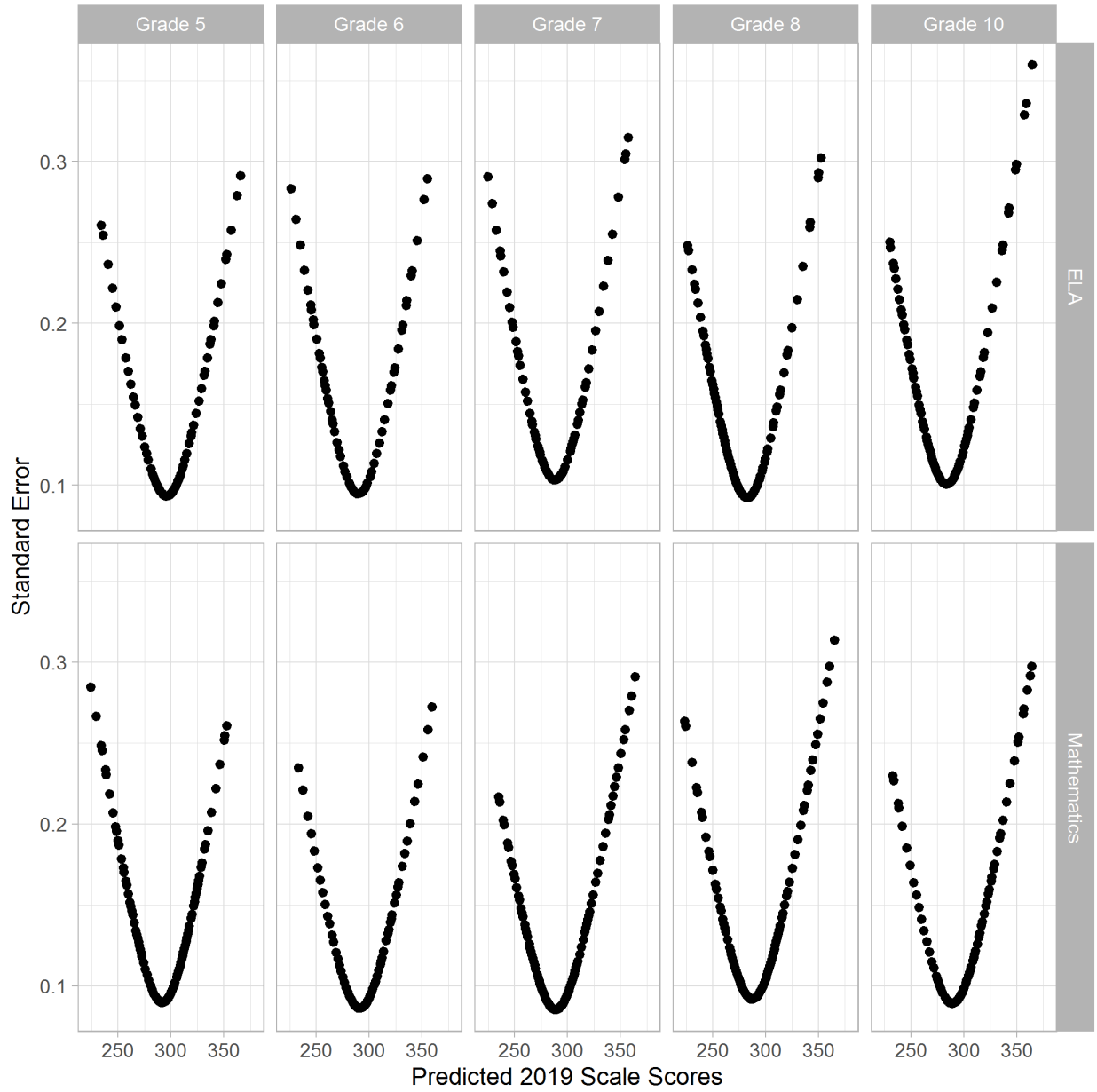
Note. ELA = English language arts.

Figure J.3. Residual QQ Plot by Subject and Grade



Note. ELA = English language arts.

Figure J.4. Standard Error of Prediction Plot by Subject and Grade



Note. ELA = English language arts.

Appendix K: Comparison of Fair-Trend Mean Scale Score for Different Student Groups and State Board of Education Districts

Table K.1. English Language Arts Fair-Trend Mean Scale Scores by Grade, Demographic Characteristic, and State Board of Education District

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
Gender										
Female	297.6	297.7	291.7	290.9	290.6	290.3	284.5	285.5	286.9	287.6
Male	293.7	292.5	287.9	286.6	285.4	284.6	280.3	278.7	280.2	279.1
Race										
Asian	301.0	305.6	298.2	300.2	297.6	299.4	291.4	295.5	293.1	296.1
Black	283.5	279.0	277.6	271.7	275.4	271.5	267.7	266.2	271.0	267.1
MR	292.6	291.1	287.1	284.7	285.9	284.6	279.5	279.4	281.6	281.1
NA	286.3	283.9	279.4	275.8	278.0	274.7	271.1	269.6	273.4	271.3
NHPI	288.1	284.7	280.0	278.7	283.5	283.1	275.2	274.7	278.6	276.1
White	296.9	296.6	290.9	290.4	289.1	288.8	283.7	283.3	284.6	284.7
Hispanic										
No	298.1	297.9	292.1	291.9	290.4	290.4	284.7	284.5	285.5	285.8
Yes	286.2	284.0	280.8	276.7	278.5	276.0	273.0	271.8	274.9	272.7
EL										
No	297.8	297.3	291.8	291.2	290.0	289.7	284.1	283.9	285.2	285.2
Yes	279.8	277.8	273.7	269.4	268.4	265.4	262.0	260.5	262.5	258.8
SWD										
No	298.9	298.9	293.0	292.5	291.3	291.2	285.3	285.3	286.4	286.5
Yes	276.8	272.9	269.6	265.2	265.2	261.9	260.8	257.2	260.2	257.3
District										
1	294.9	293.1	288.6	288.2	287.1	285.1	281.0	279.5	283.8	283.9
2	304.1	305.1	297.2	296.9	296.8	295.6	289.1	289.5	290.4	292.0
3	303.4	304.8	297.0	297.1	296.1	295.3	289.1	289.2	289.9	291.7
4	294.7	294.9	289.3	288.9	288.1	287.3	282.5	281.0	282.8	283.0
5	291.8	289.5	285.7	284.2	282.0	281.5	277.7	276.7	278.0	276.7
6	296.2	295.8	290.0	290.1	288.3	287.8	283.2	282.5	283.2	284.6

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
7	291.9	290.3	286.3	283.0	284.3	283.1	278.5	277.9	280.2	279.7
8	288.6	286.5	282.8	277.6	281.3	280.2	275.1	274.1	278.1	276.0
9	293.7	293.0	288.0	287.5	286.2	285.4	281.5	280.5	282.3	281.4
10	291.8	290.0	286.3	282.6	284.3	283.4	278.7	277.9	281.0	279.1

Note. MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Table K.2. Mathematics Fair-Trend Mean Scale Scores by Grade, Demographic Characteristic, and State Board of Education District

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
Gender										
Female	290.3	285.9	289.8	285.9	287.3	283.4	286.5	280.8	288.6	282.7
Male	292.5	290.3	293.3	288.8	290.4	286.6	287.9	282.5	288.8	283.7
Race										
Asian	301.0	301.6	303.6	301.9	302.6	300.7	302.2	300.3	304.5	303.8
Black	279.4	272.4	278.3	270.7	276.7	269.3	273.5	265.4	275.9	269.6
MR	287.6	282.6	287.9	282.3	286.0	280.9	284.0	278.3	285.8	279.2
NA	284.7	279.3	282.1	277.1	281.1	275.1	277.0	270.8	279.0	272.9
NHPI	286.8	281.4	284.2	278.0	283.9	279.5	281.9	278.1	282.9	276.6
White	292.5	289.6	292.8	288.9	289.8	286.3	288.3	282.8	289.7	284.2
Hispanic										
No	293.6	291.0	294.0	290.3	291.0	287.8	289.5	284.4	290.7	285.5
Yes	282.9	277.1	282.5	276.2	280.6	274.1	278.3	271.1	280.2	273.4
EL										
No	293.2	290.2	293.4	289.5	290.4	286.9	288.8	283.3	290.1	284.6
Yes	278.5	273.0	277.3	271.5	273.9	267.1	270.0	263.5	271.9	266.3
SWD										
No	294.4	291.1	294.5	290.2	291.6	288.0	289.8	284.4	291.2	285.4
Yes	274.6	271.3	273.8	269.7	270.0	264.2	267.9	261.5	268.3	265.2

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
District										
1	291.2	285.8	291.1	286.7	288.8	282.2	287.5	277.8	289.3	282.7
2	298.6	298.2	298.2	295.7	297.3	293.3	295.1	288.8	296.9	292.6
3	298.3	298.4	298.5	296.0	297.2	292.9	294.7	288.4	296.3	291.7
4	291.1	288.6	292.2	288.1	289.7	285.4	289.0	281.4	288.5	282.1
5	288.7	283.6	287.9	285.6	284.4	280.3	283.9	277.1	283.2	278.3
6	291.6	289.4	291.2	289.2	288.0	285.0	286.7	282.4	287.2	283.0
7	287.4	282.5	287.3	281.1	284.4	280.2	282.8	277.5	284.9	280.0
8	284.6	279.2	284.1	276.0	282.3	276.4	280.1	274.3	283.2	276.4
9	289.4	286.6	290.4	286.0	287.2	284.0	284.9	279.5	286.1	280.9
10	287.5	282.9	287.7	280.3	284.8	280.1	282.9	278.3	286.0	279.8

Note. MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Appendix L: Comparison of Equity-Check Mean Scale Scores for Different Student Groups and State Board of Education Districts

Table L.1. English Language Arts Equity-Check Mean Scale Scores by Grade, Demographic Characteristic, and State Board of Education District

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	NT	T	NT	T	NT	T	NT	T	NT	T
Gender										
Female	297.7	297.6	290.0	291.7	288.6	290.6	281.3	285.5	280.9	287.6
Male	292.3	293.7	285.3	287.9	282.6	285.4	276.2	278.7	273.0	279.1
Race										
Asian	306.3	301.0	296.6	298.2	296.0	297.6	289.8	295.5	287.9	296.1
Black	283.7	283.5	276.2	277.6	274.8	275.4	265.8	266.2	267.6	267.1
MR	291.7	292.6	286.7	287.1	282.5	285.9	277.3	279.4	274.5	281.1
NA	289.2	286.3	280.6	279.4	277.2	278.0	270.0	269.6	269.1	271.3
NHPI	296.7	288.1	277.0	280.0	273.7	283.5	269.8	274.7	268.8	276.1
White	296.9	296.9	289.8	290.9	288.0	289.1	281.2	283.3	278.7	284.7
Hispanic										
No	296.8	298.1	289.3	292.1	287.7	290.4	281.2	284.5	279.3	285.8
Yes	286.0	286.2	281.2	280.8	278.1	278.5	270.4	271.8	269.7	272.7
EL										
No	296.4	297.8	289.2	291.8	287.4	290.0	280.7	283.9	279.0	285.2
Yes	282.1	279.8	276.6	273.7	272.2	268.4	264.9	260.5	264.5	258.8
SWD										
No	297.9	298.9	290.3	293.0	288.8	291.3	281.8	285.3	280.3	286.5
Yes	277.5	276.8	271.2	269.6	266.9	265.2	260.0	257.2	256.9	257.3
District										
1	295.4	294.9	286.8	288.6	286.5	287.1	279.1	279.5	276.7	283.9
2	301.3	304.1	292.2	297.2	293.1	296.8	285.5	289.5	281.8	292.0
3	300.7	303.4	292.1	297.0	294.0	296.1	286.8	289.2	282.6	291.7
4	292.8	294.7	287.0	289.3	286.3	288.1	278.1	281.0	278.5	283.0
5	293.3	291.8	287.9	285.7	281.4	282.0	275.2	276.7	271.8	276.7
6	296.5	296.2	289.9	290.0	286.9	288.3	280.1	282.5	279.2	284.6

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	NT	T	NT	T	NT	T	NT	T	NT	T
7	292.5	291.9	285.0	286.3	282.1	284.3	275.8	277.9	273.6	279.7
8	288.4	288.6	282.8	282.8	279.3	281.3	272.6	274.1	271.3	276.0
9	290.7	293.7	285.3	288.0	284.2	286.2	277.9	280.5	274.4	281.4
10	291.0	291.8	284.9	286.3	281.5	284.3	276.1	277.9	273.4	279.1

Note. NT = not tested; T = tested; MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.

Table L.2. Mathematics Equity-Check Mean Scale Scores by Grade, Demographic Characteristic, and State Board of Education District

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	NT	T	NT	T	NT	T	NT	T	NT	T
Gender										
Female	288.4	290.3	286.2	289.8	284.5	287.3	282.8	286.5	281.3	288.6
Male	289.5	292.5	288.9	293.3	286.5	290.4	283.3	287.9	280.0	288.8
Race										
Asian	302.7	301.0	303.2	303.6	302.0	302.6	300.5	302.2	299.9	304.5
Black	278.8	279.4	275.4	278.3	275.6	276.7	270.8	273.5	271.9	275.9
MR	287.2	287.6	286.2	287.9	283.2	286.0	280.1	284.0	277.4	285.8
NA	281.5	284.7	280.5	282.1	279.1	281.1	274.7	277.0	272.8	279.0
NHPI	291.7	286.8	281.6	284.2	274.0	283.9	278.9	281.9	273.6	282.9
White	290.5	292.5	289.7	292.8	287.3	289.8	285.1	288.3	282.1	289.7
Hispanic										
No	290.7	293.6	289.1	294.0	287.2	291.0	285.1	289.5	282.6	290.7
Yes	281.5	282.9	281.8	282.5	279.5	280.6	276.1	278.3	274.8	280.2
EL										
No	290.1	293.2	288.7	293.4	286.6	290.4	284.4	288.8	282.1	290.1
Yes	280.2	278.5	280.5	277.3	278.1	273.9	273.7	270.0	272.4	271.9
SWD										
No	291.5	294.4	289.9	294.5	287.8	291.6	285.5	289.8	283.2	291.2
Yes	274.3	274.6	273.5	273.8	271.5	270.0	267.6	267.9	265.5	268.3

	Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	NT	T	NT	T	NT	T	NT	T	NT	T
District										
1	291.0	291.2	287.6	291.1	287.0	288.8	285.2	287.5	280.4	289.3
2	295.8	298.6	291.1	298.2	292.3	297.3	291.2	295.1	284.1	296.9
3	294.9	298.3	291.6	298.5	293.0	297.2	291.6	294.7	284.8	296.3
4	286.2	291.1	289.6	292.2	287.0	289.7	283.9	289.0	282.8	288.5
5	287.2	288.7	288.0	287.9	282.1	284.4	280.1	283.9	275.0	283.2
6	291.6	291.6	288.5	291.2	286.4	288.0	282.8	286.7	280.7	287.2
7	286.1	287.4	283.6	287.3	281.7	284.4	279.1	282.8	277.1	284.9
8	281.9	284.6	282.0	284.1	280.1	282.3	276.5	280.1	276.0	283.2
9	284.6	289.4	286.1	290.4	283.7	287.2	279.6	284.9	278.7	286.1
10	284.0	287.5	284.0	287.7	281.3	284.8	279.0	282.9	277.5	286.0

Note. NT = not tested; T = tested; MR = multiracial; NA = Native American; NHPI = Native Hawaiian and Pacific Islander; EL = English learner; SWD = students with disability.