

Revisiting Ethnic Differences in In-Person Learning During the 2021–22 School Year

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ABSTRACT

During the 2020–21 school year, Black students were less likely to learn in person than white students. We examine whether this difference persisted as the pandemic progressed. We find that the rate of in-person learning increased in 2021–22 but remained lower for Black students compared to white students. While several factors helped explain observed racial differences in learning modality in 2020–21, only modality offerings continued to be an important explanatory factor in 2021–22 and a Black-white in-person learning gap persisted after controlling for offerings and other factors. These findings suggest a mismatch between Black families' preferences and the options offered by their schools.

KEYWORDS

COVID-19; parental choice; racial gaps; schooling modality

Introduction

Throughout the COVID-19 pandemic, families and school districts had to make difficult decisions about how they would like education to be delivered to their students while facing challenges and uncertainties stemming from the pandemic. These decisions resulted in significant racial and ethnic gaps in in-person learning in the first pandemic school year, 2020–21 (Camp & Zamarro, 2021; Kurmann & Lalé, 2023; Singer, 2022) and a national decline in enrollment in the public school sector (Dee et al., 2022).

Entering the second pandemic school year (2021–22), access to remote instruction waned, and in-person instruction became the dominant instructional mode offered by school districts. However, despite a return to in-person learning, district enrollments did not fully recover during this second pandemic school year, while enrollments in private schools and homeschooling remained elevated as compared with pre-pandemic levels (Dee, 2023). This lack of an enrollment rebound for traditional public schools may be indicative of a shift in parental preferences for different educational arrangements such as a preference for different sectors (e.g., private and homeschooling) or modes of instruction. Black parents in particular expressed increased interest in schooling options other than

their residentially assigned school, such as charter schools, education savings accounts (ESAs), vouchers, and homeschooling following the COVID-19 pandemic (Mahnken, 2023). While changes in preferences for school choice programs have been documented following the pandemic, less is known about how racial and ethnic gaps in the preference for and use of in-person learning evolved as the pandemic progressed and the factors that could be behind these gaps.

If the racial and ethnic gaps in in-person learning observed during the 2020–21 school year did not persist and the factors behind them were no longer salient in a family's decision-making as the pandemic progressed, shifts in enrollment could similarly be transitory and schools may wish to simply focus on providing effective in-person instruction. Conversely, if racial and ethnic gaps and factors driving a preference for remote learning remained relevant to families' decisions as the pandemic faded, there may be longer-term shifts in public school enrollments and families' preferences for alternative educational arrangements. It would therefore be beneficial for both public schools and schools of choice to develop high-quality remote and hybrid learning programs allowing families to pursue an alternative to traditional public schools that they believe will better suit their student's needs.

In this paper, we examine how racial and ethnic gaps in the use of in-person learning evolved as the pandemic progressed during the 2021–22 school year and which factors potentially explain any observed racial and ethnic gaps. In particular, we address the following research questions:

- (1) What racial and ethnic gaps, if any, existed in schooling modality throughout the 2021-22 school year?
- (2) How did school modality offerings and school sector relate to racial and ethnic in-person learning gaps during the 2021-22 school year?
- (3) To what extent did factors separate from school district offerings, such as political leanings, trust in media, local COVID-19 spread, and COVID-19 health risks, remain relevant predictors during the 2021-22 school year and as compared to the 2020-21 school year?

To answer these questions, we analyze survey panel data from the Understanding Coronavirus in America Survey (UCA) whose respondents were recruited from the nationally representative Understanding America Study (UAS). The UCA has collected information on respondents' schooling experiences and choices throughout the pandemic. Specifically, we use survey waves¹ from summer 2021, fall 2021, and winter 2022 to examine both the families' intended and actual schooling modes across different moments in the 2021–22 school year. The summer 2021 data gives us information on families' stated learning mode preferences, which are likely less affected by the supply of options. The data from fall 2021 and winter 2022 allow us to study racial and

ethnic gaps in actual schooling mode used, which may have been influenced by both families' true preferences and the availability of remote options.

We find that the Black-white gap in the use of in-person learning persisted during the 2021–22 school year but was smaller than the gap reported in 2020–21. While political leanings and health risks helped explain observed differences in in-person learning early in the pandemic (2020–21), they no longer had explanatory power as the pandemic progressed in 2021–22. In contrast, the availability of different schooling modality options continued to be an important explanatory factor. Our results suggest a mismatch between Black families' preferences and the options offered by their schools, as Black families continued to have a higher preference for remote learning than white families during the pandemic, a preference that remained unexplained even after conditioning on school offerings and other individual factors. As a result, concerted efforts from traditional public schools may be needed to ensure a quality education for families from marginalized communities with a continued preference for remote learning.

Literature review

Following abrupt school closures in the spring of 2020, schools reopened for the 2020–21 academic year offering combinations of in-person, hybrid, and remote learning options. In most states, individual schools and districts were left to decide which options they would provide, and families were left to decide, based on the availability of offerings and other factors, how their student(s) would attend school during this first pandemic school year.

At this time, prolific literature has emerged documenting which factors were behind different reopening decisions during the first school year of the pandemic. Overall, this literature finds that a complex combination of factors affected reopening decisions during the 2020–21 school year.

Researchers described how different voices in the process (e.g. political leaders, teachers, and parents) called for different conceptions of justice and safety in these circumstances, which could have led to different reopening decisions depending on the strength and influence of different groups (Freidus & Turner, 2023; Kretchmar & Brewer, 2022). For instance, several researchers have documented how the strength of teachers' unions may have played a role in reopening decisions, with geographic areas with stronger unions being less likely to offer in-person learning (DeAngelis & Makridis, 2021; Grossmann et al., 2021; Harris & Oliver, 2021; Hartney & Finger, 2021; Houston & Steinberg, 2022; Marianno et al., 2022).

Although research has found that school leaders reported considering both public health guidance and political factors when making reopening decisions (Singer et al., 2023), a strong association between local political leanings and reopening decisions has consistently been found throughout different studies,

with more Democratic-leaning communities being less likely to offer instruction in person (Grossmann et al., 2021; Harris & Oliver, 2021; Hartney & Finger, 2021; Houston & Steinberg, 2022; Kurmann & Lalé, 2023; Marianno et al., 2022). In contrast, COVID-19 infections, hospitalizations, and death rates appear to have had a more limited association with school modality offerings and the salience of these factors appears to have decreased over the course of the 2020–21 school year (DeAngelis & Makridis, 2021, 2022; Grossmann et al., 2021; Harris & Oliver, 2021; Hartney & Finger, 2021; Marianno et al., 2022). The relatively weak association between measures of COVID-19 severity and/or spread and school modality offerings may be due to differences across different groups and communities in how they assessed the risks of the pandemic (Kretchmar & Brewer, 2022).

Beyond politics and public health factors, researchers have also studied how school reopening decisions related to local demographics, type of school, and different school characteristics (Kurmann & Lalé, 2023; Singer, 2022). Kurmann and Lalé (2023) use a measure of exposure to in-person instruction during the 2020–21 school year, constructed using information both on reported school learning modes (from surveys and official websites) as well as cell phone data, and find that in-person learning was substantially lower in traditional public schools than in private schools, with public charter schools ranking in between the two. In-person learning, for both traditional public and private schools, was also lower for more affluent and higher-educated localities. Importantly, the authors document how in-person learning was negatively associated with the share of nonwhite students in the school.

The available literature not only documents the offering of different school modalities but also the final uptake of these modalities by families. In these studies, similar to the results by Kurmann and Lalé (2023) described above, clear and important race and ethnicity gaps emerged, with white families being more likely to go back to school in person than Black or Hispanic families (Camp & Zamarro, 2021; Kurmann & Lalé, 2023). Although the availability of in-person learning options appeared to explain part of these observed racial and ethnic gaps (Calarco et al., 2021; Camp & Zamarro, 2021; Kogan, 2021; Kurmann & Lalé, 2023), it did not fully explain the gap, and other factors appeared to be relevant predictors of families' final school modality choices.

Again, political leanings appeared to be a factor strongly associated with families' school modality decisions, with families leaning Democratic being more likely to choose remote learning for their children (Camp & Zamarro, 2021; Collins, 2021; Grossmann et al., 2021; Haderlein et al., 2021; Henderson et al., 2021; Kogan, 2021). Similarly, Camp and Zamarro (2021) found that trust in public health and media outlets was associated with families' school modality choices for their children. These results could be due to the highly politicized nature of the response to the pandemic (Kretchmar & Brewer, 2022).

Despite the research described above that documented a weak association between COVID incidence and severity and school district reopening decisions, at the individual family level, the literature does show that perceived COVID-19 health risks and community spread of the disease were factors that families considered in their school modality decisions (Camp & Zamarro, 2021; Chua et al., 2021; Darling-Aduana et al., 2022; Harris & Oliver, 2021).

Different parental preferences and a mismatch between these preferences and public school district offerings could be important determinants of families' educational choices with potentially lasting consequences as parents might be motivated to change school sectors to better satisfy their preferences. Little is known, however, about this potential mismatch in the literature despite its importance. In this respect, Dee et al. (2022) document an enrollment decline of 1.1 million students nationally from the traditional public school sector and large increases in both homeschooling and private school enrollment during the 2020–21 school year. This enrollment decline was notably larger in communities where in-person learning was less likely to be offered and suggests a mismatch between schools' educational offerings and parents' preferences (Dee et al., 2022; Musaddiq et al., 2021). In contrast, survey data from January and February 2021 from the UAS shows that a majority of parents (74%), both among those preferring in-person learning as well as among those preferring remote learning for their children, reported they were able to access their preferred learning modality for their children (Barnum, 2021). These results also highlight how a significant percentage of families (42%) preferred a remote learning modality for their children at this time. Again, this appeared to be particularly true for low-income families and families of color (Calarco et al., 2021).

Entering the second pandemic school year (2021–22), access to remote instruction waned, and in-person instruction became the dominant instructional mode offered by school districts. While 67% of parents reported access to remote instruction in September 2020 (National Center for Education Statistics, 2021a), only 34% of schools offered a remote learning option in September 2021 (National Center for Education Statistics, 2021b). The National Center for Education Statistics (2021b) reports that by September 2021 in-person learning was the default mode of schooling, with nearly all schools participating in the survey offering full in-person learning.

Despite a return to in-person learning, district enrollments did not fully recover during this second pandemic school year while enrollments in private schools and homeschooling remained elevated as compared with pre-pandemic levels (Dee, 2023). The lack of an enrollment rebound for traditional public schools may be indicative of a shift in parental preferences for different educational arrangements. However, to our knowledge, no research has documented how families' preferences progressed during the pandemic. This is a gap in the literature that we aim to address in this paper.

While the full effects of the pandemic on students are still unknown, early research indicates that not only were racially minoritized students and students from high-poverty communities more likely to attend school remotely (Camp et al., 2022; Kurmann & Lalé, 2023; Parolin & Lee, 2021), but research also suggests that students in districts that offered more remote and hybrid instruction saw a greater decline in the rate at which students learned new material and increased Black-white and Hispanic-white achievement gaps (Goldhaber et al., 2022).

In addition to the need for providing support for students whose academic progress was hindered by the pandemic and facing changes in enrollment, many schools found themselves in a shifting policy environment. Following the disruptions caused by the pandemic, education reformers and legislatures have made substantial progress in advancing choice programs that expand the educational opportunities available to students (Greenblatt, 2021; State Policy Network, 2022). Parents – in particular Black parents – have expressed increased interest in schooling options other than their residentially assigned school, such as charter schools, education savings accounts (ESAs), vouchers, and homeschooling following the COVID-19 pandemic (Mahnken, 2023).

The need for academic remediation for students and the potential long-term changes across schooling sectors highlights the need to better understand families' schooling decision-making and preferences as the pandemic progressed. In particular, it is important to understand whether racial and ethnic gaps in preference for in-person learning persisted, which factors remained important in explaining families' preferences and student participation in in-person learning, and whether there is a potential mismatch between families' preferences and school districts' offerings. The answer to these questions would help schools understand the potential nature of the observed enrollment shifts during the pandemic and help inform their strategies moving forward. To our knowledge, this paper is the first to use data with respondents recruited from a nationally representative panel to examine whether the racial and ethnic gaps observed in the first pandemic school year persisted into the 2021–22 school year and explore what factors explained these gaps.

Data and descriptive statistics

Since March 2020, the Dornsife Center for Economic and Social Research at the University of Southern California has collected data about the impact of the COVID-19 pandemic on American households through the Understanding Coronavirus in America (UCA) tracking survey. Participants in the UCA were recruited from the nationally representative Understanding America Study² (UAS), a probability-based household internet panel with a nationally representative sample of approximately 9,000 U.S. respondents.³ To date, the UCA has collected longitudinal data about the pandemic at semi-

regular intervals over 34 waves with an average of 7,000 respondents⁴ per wave. Each wave includes respondents' demographics such as gender, race and ethnicity, education level, household income, and marital status, as well as information about respondents' experiences with the pandemic. Additionally, several waves collect information about the educational experiences of children in the respondent's household.⁵

We use three waves of the UCA collected during the summer of 2021, fall of 2021, and winter of 2022 in our analysis. These separate waves allow us to examine factors relating to respondents' intended and actual use of different schooling modalities. In each wave used for our study, respondents answered a series of questions about the educational experiences of a randomly selected school-aged child living in their household. We restrict our sample to UCA respondents with at least one school-aged child in the household who is not homeschooled. Additionally, the UAS was designed to capture information about American households and so may include multiple respondents per household. As a result, some households provide multiple responses per student. In these cases, we retain only one observation per student in a household by keeping the primary respondent's survey response.⁶ After these restrictions have been made, our analytic samples for the summer, fall, and winter waves include 1,225, 1,458, and 1,420 respondents, respectively.⁷

The summer survey asks respondents to indicate if their household plans on sending the selected child to school in person while the fall and winter surveys ask respondents if the selected child, at the time of the survey, was attending school in person only (fall 93%; winter 92%), remote only (fall three percent; winter two percent), or hybrid (fall four percent; winter five percent). Given the low incidence of remote and hybrid learning, we combine this information to create a learning modality indicator variable that takes value one if the respondent reported their child attending school in person only and value zero if they reported attending school remotely only or both in person and remotely (hybrid).⁸ Importantly, by classifying both remote and hybrid learning together we are likely limiting our ability to detect heterogeneity as the factors motivating a choice of either remote or hybrid learning may differ somewhat from each other. Indeed, in the results of our multinomial analysis (reported in [Appendix D](#)), we find evidence that there might be substantial differences between factors associated with each modality. Despite these findings, in our main analysis we prefer to consider remote and hybrid learning versus in-person learning as this avoids small cell sizes (e.g., fewer than 30 respondents) that the multinomial analysis suffers from and is, in some respects, a more direct comparison of pre-pandemic schooling norms and pandemic-era or post-pandemic alternative learning arrangements. We exclude those who reported "other" for their schooling modality from our analytic sample.

The UAS collects respondent race in six categories (white, Black, American Indian or Alaskan Native, Asian, Hawaiian or Pacific Islander, and mixed) as

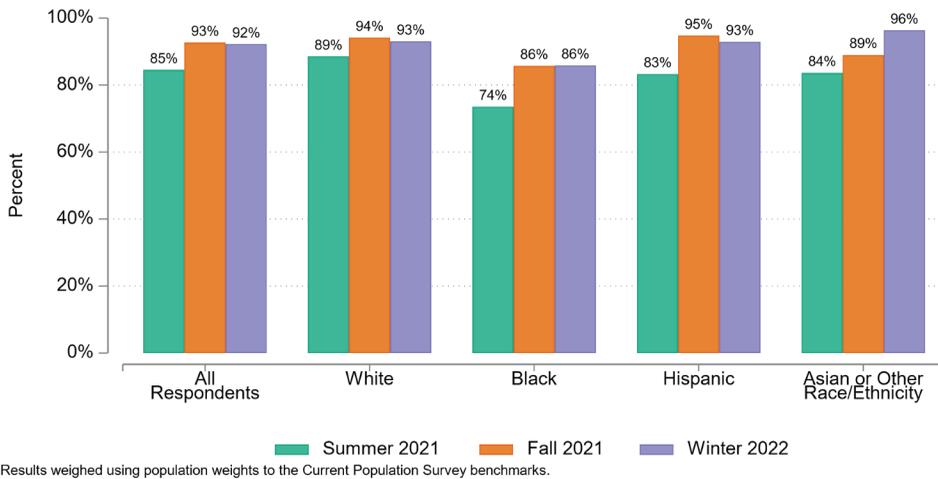


Figure 1. Percentage of respondents intending and sending their school-age children for in-person learning in summer 2021, fall 2021, and winter 2022. Note: Data from waves UAS348, UAS350, and UAS351 of the Understanding Coronavirus in America Tracking Survey. Results weighted using population weights to the Current Population Survey Benchmarks

well as an indicator for identifying as Hispanic or Latino. We use these variables to construct a single indicator for race and ethnicity with five discrete categories (Black, Hispanic or Latino, white, and other race and ethnicity).⁹

As shown in [Figure 1](#), 85% of respondents from the summer of 2021 reported that they planned on participating in in-person learning for the upcoming school year while during the fall and winter, approximately 93% of respondents reported currently participating in in-person learning. Across all races and ethnicities, a higher proportion of respondents reported participating in in-person learning than planning to participate in in-person learning. Still, clear racial and ethnic gaps exist in both intentions to participate in and actually participate in in-person learning. In line with prior research, we observe that, during the summer of 2021, Black respondents were 12% points less likely to report intending to participate in in-person learning compared to the all-respondent average and 15% points less likely compared to white respondents. While most racial and ethnic groups report similar levels of in-person learning use during the fall of 2021 (approximately 93% across other groups), only 86% of Black respondents report using in-person learning during this time. This gap in reported participation in in-person learning between Black and white respondents continues in the winter 2022 survey.

To capture some socio-economic circumstances of the household, we use other UAS and UCA information to construct variables representing respondents' levels of education (high school or lower education, some postsecondary with no earned degree, and postsecondary degree attained) and household incomes (less than \$40,000, \$40,000–\$100,000, and more than \$100,000 per year). Additionally, as supporting remote

learning for younger children may require adult supervision, we include controls for the selected child's school level (elementary, middle, or high school) and household composition (e.g., if the respondent is married or living with a partner).

Trust in institutions and political leanings were factors that partially explained decisions about learning modality during the 2020–21 school year. To capture these, we include several measures of trust constructed using principal components factor analysis¹⁰ from questions asked during the summer survey. We first construct a variable representing trust in public health institutions using respondents' assessments of the trustworthiness of the CDC, the US Department of Health and Human Services, and local public health officials. Next, we construct a measure of trust in mainstream media sources using assessments of the trustworthiness of CNN, MSNBC, NBC, CBS, ABC, and national newspapers. Finally, following the results of our exploratory factor analysis, we include a separate measure of trust in Fox News.¹¹ To capture political leanings, we categorize respondents as Biden, Trump, third-party, or undecided and nonvoters using UAS election polls and post-election surveys. Due to cell size concerns, we exclude the observations for nonvoters and third-party voters from our analyses.

Moreover, we construct measures of individual and household vulnerabilities to COVID-19 using respondents' reported health conditions which may be COVID-19 comorbidities,¹² respondent's vaccination status, and a binary variable indicating if everyone in the household was eligible for vaccination.¹³

Finally, we include a measure of urbanicity to proxy for different factors associated with geographies such as the availability of high-speed internet that could affect learning mode preferences. We construct county-level (summer and fall) or state-level (winter) COVID-19 incidence rates to capture the association between COVID-19 infections and families' decision-making.

To examine the relationship between instructional modality and school characteristics, we include controls for the type of school attended¹⁴ (traditional public, charter, or private) as well as the availability of remote learning options in our fall 2021 and winter 2022 analyses. We construct an indicator for the availability of remote learning based on a question asking respondents to estimate what percentage of students at a school are currently learning in person. If respondents indicate that any proportion of students in the child's school is attending remotely, we infer that a remote learning option must be available.

A full description of the variables can be found in the technical [Appendix A](#). We report descriptive statistics for our summer, fall, and winter analytic samples using sampling weights in [Tables 1, 2, and 3](#) below.

Table 1. Summer 2021 sample characteristics.

<i>Race/Ethnicity:</i>	All	White	Black	Hispanic	Other
	<i>N</i> =1225	<i>N</i> =708	<i>N</i> =135	<i>N</i> =263	<i>N</i> =119
<i>Student Characteristics</i>					
Elementary Student	0.456	0.473	0.390	0.449	0.501
Middle School Student	0.324	0.322	0.358	0.332	0.229
High School Student	0.220	0.205	0.252	0.219	0.269
<i>Urbanicity</i>					
Rural	0.221	0.280	0.208	0.113	0.070
Suburban/Mixed	0.520	0.562	0.419	0.468	0.561
Urban	0.259	0.158	0.373	0.419	0.369
<i>Political Leanings</i>					
Trump Voter	0.398	0.568	0.040	0.255	0.269
Biden Voter	0.602	0.432	0.960	0.745	0.731
<i>Institutional Trust</i>					
Public Health Trust	0.013	-0.117	0.030	0.232	0.245
Fox News Trust	1.563	1.472	1.741	1.642	1.568
National Media Trust	0.043	-0.168	0.351	0.203	0.407
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.002	0.002	0.002	0.002	0.003
COVID-19 Comorbidity	0.443	0.456	0.518	0.392	0.325
Fully Vaccinated	0.455	0.446	0.390	0.495	0.548
Household Vaccine Eligible	0.347	0.302	0.427	0.345	0.509
Plans on In-Person Learning	0.845	0.888	0.726	0.833	0.836

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table 2. Fall 2021 sample characteristics.

<i>Race/Ethnicity:</i>	All	White	Black	Hispanic	Other
	<i>N</i> =1458	<i>N</i> =877	<i>N</i> =143	<i>N</i> =315	<i>N</i> =123
<i>Student Characteristics</i>					
Elementary Student	0.386	0.413	0.401	0.317	0.374
Middle School Student	0.318	0.312	0.287	0.371	0.253
High School Student	0.296	0.275	0.312	0.313	0.373
Attends Charter School	0.056	0.040	0.056	0.088	0.079
Attends Private School	0.065	0.076	0.019	0.069	0.063
<i>Urbanicity</i>					
Rural	0.202	0.238	0.243	0.108	0.051
Suburban/Mixed	0.519	0.576	0.399	0.440	0.550
Urban	0.279	0.186	0.358	0.452	0.399
<i>Political Leanings</i>					
Trump Voter	0.385	0.539	0.092	0.247	0.160
Biden Voter	0.615	0.461	0.908	0.753	0.840
<i>Institutional Trust</i>					
Public Health Trust	0.049	-0.031	-0.011	0.186	0.334
Fox News Trust	1.569	1.506	1.724	1.615	1.594
National Media Trust	0.077	-0.116	0.437	0.194	0.462
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.030	0.030	0.037	0.027	0.029
COVID-19 Comorbidity	0.430	0.444	0.523	0.361	0.340
Fully Vaccinated	0.573	0.575	0.448	0.631	0.633
Household Vaccine Eligible	0.367	0.299	0.493	0.401	0.521
Remote Option Available	0.607	0.615	0.633	0.577	0.585
Attending In-Person	0.927	0.941	0.857	0.948	0.896

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table 3. Winter 2022 sample Characteristics.

<i>Race/Ethnicity:</i>	All	White	Black	Hispanic	Other
	<i>N</i> =1420	<i>N</i> =867	<i>N</i> =133	<i>N</i> =300	<i>N</i> =120
<i>Student Characteristics</i>					
Elementary Student	0.394	0.411	0.339	0.383	0.402
Middle School Student	0.308	0.325	0.275	0.311	0.221
High School Student	0.298	0.264	0.386	0.306	0.377
Attends Charter School	0.050	0.036	0.040	0.083	0.066
Attends Private School	0.066	0.073	0.036	.066	0.066
<i>Urbanicity</i>					
Rural	0.211	0.255	0.223	0.124	0.079
Suburban/Mixed	0.505	0.559	0.417	0.402	0.557
Urban	0.285	0.186	0.360	0.474	0.364
<i>Political Leanings</i>					
Trump Voter	0.397	0.545	0.063	0.277	0.171
Biden Voter	0.603	0.455	0.937	0.723	0.829
<i>Institutional Trust</i>					
Public Health Trust	0.024	-0.062	-0.066	0.194	0.275
Fox News Trust	1.537	1.492	1.736	1.517	1.576
National Media Trust	0.039	-0.135	0.418	0.126	0.395
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.098	0.100	0.093	0.097	0.098
COVID-19 Comorbidity	0.422	0.438	0.486	0.375	0.329
Fully Vaccinated	0.675	0.637	0.591	0.777	0.794
Household Vaccine Eligible	0.790	0.765	0.846	0.788	0.889
Remote Option Available	0.585	0.584	0.577	0.625	0.456
Attending In-Person	0.922	0.929	0.866	0.924	0.964

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Analytic strategy

We use logit models to predict the likelihood of a respondent reporting their student is planning to attend (summer 2021) or attending (fall 2021 and winter 2022) school fully in-person, controlling for sets of covariates. Our first model includes only race and ethnicity as the independent variable of interest and documents the initial racial and ethnic gap in the 2021–22 school year. The outcome (in-person learning) is a binary variable that takes on a value of one if the respondent *i* reports planning to send or sending their child to school fully in person in season *s* (i.e. summer 2021, fall 2021, or winter 2022), or zero if the respondent reports planning to send or sending their child to school remotely or using a hybrid model. The model for this logistic regression is as follows:

$$In\ Person_{is} = \Lambda(\beta_1 Race_i) \tag{1}$$

Where $\Lambda(\cdot)$ indicates the logistic cumulative function.

Following Camp and Zamarro (2021), we estimate additional models where we sequentially add controls to study which factors help explain the initial observed racial and ethnic gaps. In all these additional models (B-D/E), we add controls for respondents’ sociodemographic and family context, including the respondent’s reported household income, level of education, employment

status, and a variable indicating if respondents are married or live with their partner (represented in our model as X_i). Additionally, we include controls for grade level (high school and middle-school students, with elementary students as the reference category) and urbanicity in all additional model specifications B-D/E. Similarly, to capture differences stemming from school offerings, we include controls for the school sector (e.g., charter and private schools, with public schools as the reference category) in specifications B-D/E of the fall 2021 and winter 2022 analyses.¹⁵ In specification C of the fall 2021 and winter 2022 analyses, we add a variable capturing the reported availability of remote learning at the child's school. Bolded terms in the following model specifications refer to variables only available for the fall 2021 and winter 2022 analyses.

$$\begin{aligned} In\ Person_{is} = \Lambda & (\beta_1 Race_i + \beta_2 Student\ Grade_i + \beta_3 Charter_i + \beta_4 Private_i \\ & + \beta_5 Urbanicity_i + X_i) \end{aligned} \quad (2)$$

$$\begin{aligned} InPerson_{is} = \Lambda & (\beta_1 Race_i + \beta_2 Student\ Grade_i + \beta_3 Charter_i + \beta_4 Private_i \\ & + \beta_5 Urbanicity_i + \beta_6 Remote\ Option\ Available_i + X_i) \end{aligned} \quad (3)$$

For all survey waves, we next add variables indicating political leanings (Trump voter in the 2020 election), and our measures of trust in media public health institutions.

$$\begin{aligned} In\ Person_{is} = \Lambda & (\beta_1 Race_i + \beta_2 Student\ Grade_i + \beta_3 Charter_i + \beta_4 Private_i \\ & + \beta_5 Urbanicity_i + \beta_6 Remote\ Option\ Available_i + \beta_7 Vote2020_i \\ & + \beta_8 Public\ Health\ Trust_i + \beta_9 Media\ Trust_i + \beta_9 Fox\ News\ Trust_i + X_i) \end{aligned} \quad (4)$$

Our final model includes an indicator for respondent's COVID-19 comorbidities, full vaccination status, whether all members of the household are eligible for the vaccine, and local COVID-19 incidence rates:

$$\begin{aligned} In\ Person_{is} = \Lambda & (\beta_1 Race_i + \beta_2 Student\ Grade_i + \beta_3 Charter_i + \beta_4 Private_i \\ & + \beta_5 Urbanicity_i + \beta_6 Remote\ Option\ Available_i + \beta_7 Vote2020_i \\ & + \beta_8 Public\ Health\ Trust_i + \beta_9 Media\ Trust_i + \beta_9 Fox\ News\ Trust_i + X_i) \end{aligned} \quad (5)$$

Results

Tables 4, 5, and 6 show results for factors associated with the probability of planning to send the child to school fully in person in the 2021–22 school year as of summer 2021, the probability of the child attending fully in person in fall 2021, and the probability of the child attending fully in person in winter 2022, respectively. In the summer of 2021, we found that Black respondents were 16 percentage points less likely to report that they planned to send the child to school in person during the 2021–22 school year (Column A). This gap is two percentage points smaller than

Table 4. Factors associated with preference for in-person learning (Summer 2021).

	(A)	(B)	(C)	(D)
	N = 1225	N = 982	N = 939	N = 897
Black	-0.161*** (0.049)	-0.108** (0.055)	-0.083 (0.056)	-0.081 (0.055)
Hispanic	-0.055 (0.039)	-0.060 (0.044)	-0.046 (0.042)	-0.067 (0.043)
Other Race/Ethnicity	-0.051 (0.053)	-0.006 (0.049)	0.021 (0.045)	0.037 (0.039)
Middle School Student		0.006 (0.039)	0.014 (0.039)	0.016 (0.044)
High School Student		0.010 (0.035)	0.007 (0.035)	-0.013 (0.037)
Rural		-0.003 (0.042)	-0.002 (0.043)	0.024 (0.041)
Urban		-0.030 (0.034)	-0.037 (0.035)	-0.009 (0.037)
Trump Voter			-0.005 (0.040)	0.000 (0.039)
Public Health Trust Factor			0.062** (0.026)	0.063** (0.027)
Trust in Fox News			0.008 (0.023)	0.003 (0.024)
National Media Trust Factor			-0.087*** (0.026)	-0.090*** (0.026)
COVID-19 Comorbidity Risk				-0.012 (0.031)
Fully Vaccinated				0.050 (0.040)
Household Vaccine Eligible				-0.053 (0.042)
Incidence Rate				-0.998 (3.251)
Demographic Controls	No	Yes	Yes	Yes
Pseudo R ²	0.027	0.098	0.131	0.145

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

the 18 percentage point gap in in-person learning that Camp and Zamarro (2021) documented for fall 2020. In addition, we do not generally find statistically significant differences in the probability of planning for in-person learning in summer 2021 for respondents identifying as Hispanic or other race, as compared to white respondents. This contrasts with documented gaps of 15 to 16 percentage points, for respondents identifying as Hispanic and other race or ethnicity, in the probability of attending in-person learning in the Fall of 2020 (Camp & Zamarro, 2021).

The observed Black-white gap in the intentions of in-person learning in summer 2021 shrinks as we sequentially add controls and becomes statistically insignificant with a point estimate of eight percentage points when we control for political leanings and institutional trust (column C).

Interestingly, while prior research noted large differences in in-person learning between Trump and Biden voters in the fall of 2020 (Camp & Zamarro, 2021), it appears these differences diminished by the summer of 2021, as we find near-zero, statistically insignificant differences between Trump and Biden voters, as shown in Table 4.

In contrast, trust in media and public health institutions continued to be important factors underlying school modality intentions during the summer of 2021. We find that a one standard deviation increase in our public health institution trust factor is associated with an increase in a respondent's likelihood of planning to send their child to school in person of about six percentage points. We also find that a one standard deviation increase in trust in media sources is associated with an approximately nine percentage point decrease in a respondent's likelihood of planning to send their child to school in person.

Our estimates for fall 2021 and winter 2022 are presented in Tables 5 and 6 and represent the realized racial and ethnicity gaps in in-person schooling once the school's learning modality options were revealed and families' decisions were made. In this case, we find that the initial gap between Black and white respondents in in-person learning attendance decreased to about six to eight percentage points, with Black respondents still less likely to report their child attending school fully in person in the fall of 2021 and winter of 2022 (Column A). While the Hispanic-white gap remains small in size and statistically insignificant, we see that by the winter of 2022 respondents identifying as other race or ethnicity were four percentage points more likely to report in-person learning than white respondents.

Interestingly, the Black-white gap in in-person learning in the fall 2021 and winter 2022 analyses does not appear to change substantially when we add controls to our models. Black respondents remain between six and 10 percentage points less likely than white respondents to report their child was attending school in person both in the fall and winter. Similar to findings for the 2020–21 school year (Camp & Zamarro, 2021), during both the fall 2021 and winter 2022 surveys, high school students remained approximately five percentage points less likely to attend school in person than elementary school students. These differences were not observed when parents declared planning to send their child to school in person in the summer, suggesting that some of these differences could be driven by the different learning options offered to students in different grade levels.

Charter schools were more likely than traditional public or private schools to remain fully online earlier in the pandemic (Camp & Zamarro, 2021;

Cohodes & Pitts, 2022; Harris & Oliver, 2021; Singer, 2022). Our results show that those attending charter schools remained less likely to attend school in person during the fall semester of the second year of the pandemic, as compared to those attending public schools. All else equal, students attending charter schools were 15 to 16 percentage points less likely to attend school in person than public school students in the fall of 2021. However, by the winter

Table 5. Factors Associated with In-Person Learning (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1075	N=1074	N=773	N=679
Black	-0.084** (0.037)	-0.060 (0.038)	-0.077* (0.040)	-0.072 (0.053)	-0.094* (0.055)
Hispanic	0.006 (0.022)	0.011 (0.030)	0.006 (0.031)	0.009 (0.029)	-0.007 (0.036)
Other Race/Ethnicity	-0.052 (0.046)	-0.031 (0.046)	-0.027 (0.043)	-0.039 (0.045)	-0.051 (0.053)
Middle School Student		-0.016 (0.023)	-0.020 (0.021)	-0.006 (0.022)	0.016 (0.026)
High School Student		-0.051* (0.027)	-0.049* (0.028)	-0.044 (0.030)	-0.044 (0.032)
Charter School Student		-0.150** (0.068)	-0.156** (0.061)	-0.146** (0.068)	-0.108 (0.072)
Private School Student		0.016 (0.041)	-0.028 (0.058)	-0.019 (0.073)	
Rural		-0.111*** (0.039)	-0.119*** (0.039)	-0.096** (0.041)	-0.087** (0.041)
Urban		0.007 (0.019)	0.010 (0.018)	0.010 (0.020)	0.006 (0.023)
Remote Option Available			-0.087*** (0.018)	-0.093*** (0.019)	-0.094*** (0.020)
Trump Voter				0.048* (0.026)	0.045 (0.030)
Public Health Trust Factor				-0.002 (0.016)	-0.009 (0.017)
Trust in Fox News				0.022 (0.018)	0.033 (0.020)
National Media Trust Factor				0.016 (0.016)	0.019 (0.017)
COVID-19 Comorbidity Risk					0.005 (0.027)
Fully Vaccinated					0.048* (0.026)
Household Vaccine Eligible					-0.028 (0.036)
Incidence Rate					-0.515 (0.741)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.025	0.167	0.225	0.270	0.299

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table 6. Factors associated with in-person learning (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1420	N=1035	N=1032	N=745	N=661
Black	-0.063* (0.038)	-0.054 (0.045)	-0.063 (0.047)	-0.061 (0.067)	-0.093 (0.069)
Hispanic	-0.005 (0.026)	-0.004 (0.039)	-0.001 (0.035)	0.036 (0.036)	0.003 (0.038)
Other Race/Ethnicity	0.035* (0.020)	0.011 (0.032)	0.008 (0.032)	0.032 (0.039)	-0.007 (0.044)
Middle School Student		-0.055** (0.028)	-0.053** (0.026)	-0.060* (0.032)	-0.046* (0.024)
High School Student		-0.046* (0.027)	-0.045 (0.027)	-0.034 (0.029)	-0.068** (0.035)
Charter School Student		0.012 (0.032)	-0.012 (0.037)	-0.055 (0.053)	-0.031 (0.052)
Private School Student		0.010 (0.045)	-0.028 (0.066)	-0.040 (0.082)	
Rural		-0.021 (0.032)	-0.019 (0.031)	0.006 (0.031)	0.031 (0.026)
Urban		0.035 (0.025)	0.036 (0.026)	0.010 (0.034)	0.002 (0.038)
Remote Option Available			-0.087*** (0.021)	-0.090*** (0.024)	-0.097*** (0.023)
Trump Voter				0.051* (0.028)	0.070** (0.031)
Public Health Trust Factor				0.013 (0.018)	0.003 (0.018)
Trust in Fox News				0.006 (0.023)	0.008 (0.022)
National Media Trust Factor				-0.022* (0.011)	-0.019* (0.011)
COVID-19 Comorbidity Risk					0.015 (0.026)
Fully Vaccinated					0.088* (0.048)
Household Vaccine Eligible					-0.048* (0.027)
Incidence Rate					-2.879*** (0.909)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.013	0.081	0.136	0.176	0.278

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

of 2022, we no longer find a statistically significant difference between students in charter and traditional public schools. In contrast with earlier findings (Camp & Zamarro, 2021) that showed more in-person learning in private schools during the first pandemic year, we do not find a significant difference in the probabilities of attending school in person between private and public school students in either the fall of 2021 or winter of 2022.

While no statistically significant differences were found in intentions for in-person learning by urbanicity in our summer analysis, during the fall of 2021, respondents living in rural areas were between nine and 12 percentage points less likely than respondents in suburban areas to report their children were attending school in person. This result is in contrast to what was observed in the first year of the pandemic, where rural schools offered more in-person learning than urban areas (Camp & Zamarro, 2021). By the winter of 2022, we no longer observe statistically significant differences between in-person attendance by urbanity.

While we are unable to further explore the reasons for respondents in rural areas being less likely to report their child is attending in person in the fall of 2021 than in urban areas, research of school staff labor markets during the pandemic provides some potential explanations for this result. Goldhaber et al. (2022) analyze online job postings from Washington state and find that rural schools were more likely to report unfilled positions during the fall of 2021. Apparent shortages were particularly acute for transportation and facilities jobs. Similarly, Camp et al. (2022) document increased turnover for rural teachers entering the 2021–22 school year as compared to urban teachers in Arkansas. These results suggest that school labor shortages may be driving the negative correlation between rurality and in-person learning. However, by the winter of 2022, there no longer is a statistically significant difference in the probability of reporting in-person attendance between rural and suburban students.

As in the first year of the pandemic (Camp & Zamarro, 2021; Kurmann & Lalé, 2023), the supply of learning options appears to be a significant predictor of modality choice in the fall of 2021. All else equal, respondents reporting some access to remote learning in their child's school were nine to 10% points less likely to report their child was attending school fully in person than respondents without remote learning options. Importantly, this difference remains stable between the fall 2021 and winter 2022 waves, suggesting that there may have been a persistent preference for remote learning during the 2021–22 school year.

While we did not observe differences between Trump and Biden voters in their intentions to use in-person learning during the summer, in fall 2021 and winter 2022, we do observe that Trump voters were five to six percentage points more likely to report their children attended school fully in person. These differences in the estimated effects of political leanings between summer and the start of the 2021–22 school year may reflect differences in the supply of learning options available to families, which could be correlated to the political leanings of their communities (Grossmann et al., 2021; Hartney & Finger, 2021; Kurmann & Lalé, 2023). The observed difference is, however, about half the size of the difference that was observed between Trump and Biden voters during the first year of the pandemic (Camp & Zamarro, 2021), and only marginally significant in all but one specification.

Finally, we observe marginally statistically significant differences between vaccinated and unvaccinated respondents in both the fall of 2021 and the winter of 2022. Fully vaccinated respondents were five to nine percentage points more likely to report in-person learning in the fall of 2021 and winter 2022, respectively. These estimates are significant at the 90% confidence level. The large point estimate in the winter 2022 survey could reflect the increased availability of children's COVID-19 vaccinations starting in November 2021.

In fall 2021, COVID-19 incidence rates were not significantly associated with a reduced probability of attending school in person. However, by winter 2022, we observe that a 10 percentage point increase in the statewide incidence rate is associated with a 2.9 percentage point decrease in the probability of a respondent reporting in-person learning, all else equal. This estimate is significant at the 99% confidence level and might reflect more school interruptions (e.g., temporary closures) in areas with a high number of COVID-19 cases due to the Omicron wave.

Overall, it is important to note how Black families had a lower preference for in-person learning during the summer of 2021 and a marginally statistically significant Black-white gap in in-person learning attendance remained in the Fall of 2021, even after controlling for a complete set of potential factors explaining the gap. A similar size gap was observed in the winter of 2022, but we lost statistical significance in this case. We believe these results support the idea that there might be a mismatch between Black families' preferences and the options that were offered by their schools.

Sensitivity of racial and ethnic groups to remote learning availability

We explore the sensitivity of various racial and ethnic groups to remote availability in [Appendix E](#) by estimating models in which indicator variables for each race and ethnic group are interacted with the indicator variable for remote learning availability during the fall of 2021 and winter of 2022, as described above. Due to issues related to the interpretation of interaction terms in non-linear models (Ai & Norton, 2003), we estimate these interactions using linear probability models. We find evidence that Black respondents were most receptive to remote availability. Together with the significantly lower reported intentions of Black families to send their children to school in person in 2021–22, as of the summer of 2021, and the fact that this higher initial preference remained unexplained even after conditioning on school offerings and other individual factors, this result further suggests that Black families may have had unmet preferences for remote learning during the second year in the pandemic.

Similarly, we explore the association between intending to use in-person learning during the summer of 2021 and actually using in-person learning during the fall of 2021 and winter of 2022 in [Appendix G](#).

Discussion

Camp and Zamarro (2021) documented Black-white gaps in observed preference for in-person learning of about 18% points during the fall of the first pandemic school year. They also documented Hispanic-white and Asian or other race-white gaps between 15 and 16 percentage points in the probability of attending in-person learning in the fall of 2020. A combination of factors, including the offering of in-person learning options, political views, COVID-19 health risks, and local COVID-19 activity were significant predictors and helped explain these observed gaps in the fall of 2020.

This follow-up analysis examines summer 2021, fall 2021, and winter 2022. Our results suggest that racial in-person gaps decreased during the second pandemic school year, but Black respondents were 16 percentage points less likely to plan to send their children to school in person in the 2021–22 school year, as of summer 2021. Once school offerings were revealed in the fall of 2021, the observed Black-white gaps in choosing in-person learning decreased, but remained statistically significant at the 90% confidence level and at nearly nine percentage points. This gap persisted at the same level into the winter of 2022, although estimated differences lost statistically significant in this case. In contrast to the reported Hispanic-white gaps and other race and ethnicity gaps in the fall of 2020, we only observed small and statistically insignificant Hispanic-white during the second pandemic school year in both intentions to use and actual use of in-person learning during the summer, fall, and winter of the 2021–22 school year.

Respondents who reported that remote options were available to them were about nine percentage points less likely to report their child is attending fully in person than respondents who did not report any access to remote options. This estimated difference persists in all specifications, indicating that some families maintained a preference for remote or hybrid learning during the 2021–22 school year. However, controlling for the availability of remote options does not reduce the observed Black-white gap in in-person attendance during the fall of 2021. Taken together, our estimated Black-white gaps in in-person attendance during the summer, fall, and winter of the 2021–22 school year may indicate a mismatch between the preferences that Black families have and what they are being offered. Indeed, this mismatch has been documented in popular reporting (Samuels, 2022). Black parents have also expressed increased interest in school choice programs, and homeschooling following the pandemic (Mahnken, 2023) which could be due in part to their preferences for remote learning not being fully met.

Political leanings appear to have lost explanatory power in observed in-person learning gaps during the fall of 2021, especially the observed differences between Trump and Biden voters. However, these relationships regained statistical significance in the winter of 2022, coinciding with the Omicron wave of the COVID-19 pandemic. This may indicate that an association

between in-person learning and political ideology ebbs and flows, depending on contemporaneous events. Importantly, however, even when this association is statistically significant it is only half as strong as reported in prior studies (Camp & Zamarro, 2021).

While we do not observe that having been vaccinated or living in a household where all members are vaccinated were meaningfully associated with in-person learning during the summer and fall of 2021, we do find a marginally significant and positive relationship estimated for the winter of 2022. This different result could be due to the availability of COVID-19 vaccines for children starting in November 2021.

Another interesting finding from our fall 2021 analysis is that rural respondents were seven to 12 percentage points less likely to report in-person learning, in contrast with what was observed earlier in the pandemic. Several possible explanations include staffing difficulties that were especially acute in rural schools (Goldhaber & Gratz, 2022) and higher than average turnover in rural schools (Camp et al., 2022).

Although our results indicate that the Black-white gap in observed preference for in-person learning was smaller than the gaps reported in 2020–21, to some degree it persisted during the 2021–22 school year. Our results also suggest a potential mismatch between Black families' preferences and what they are being offered. Given the documented widening academic achievement gaps between Black and white students and the documented decline in enrollments in public schools, as public policy focus moves from COVID mitigation and prevention toward academic recovery, understanding why some families continued to prefer remote learning is especially important. Concerted efforts may also be needed to ensure a quality education for those families from marginalized communities with a lasting preference for remote learning.

Notes

1. The summer 2021 survey (UAS 348) was fielded from June 9th to July 21st, the fall 2021 survey (UAS 350) was fielded from September 23rd to October 31st, and the winter 2022 survey (UAS 351) was fielded from February 1st to March 30th.
2. <https://uasdata.usc.edu/index.php>
3. Importantly, the UAS research team provides internet access and hardware (e.g., tablets) to respondents who do not have computer hardware or internet access so all households in the panel may participate. Respondents receive compensation for their time spent answering questions at a rate of \$20 per 30 minutes of interview time. The surveys are conducted both in English and Spanish.
4. While the UCA averages 7,000 respondents per survey wave, we limit our analysis to those respondents with school-aged children in the household with resulting sample sizes between 1,225 and 1,458 individual respondents. This proportion is comparable with the number of American households with school-aged children (<https://www.census.gov/data/tables/2020/demo/families/cps-2020.html>)

5. Our sample includes any adult living in a household with a child in K-12 schooling which may include extended family members or adult siblings. As a robustness check, we repeat our analyses for summer and fall samples restricted to parents of K-12 students as identified from the separate “My Household” survey in [Appendix B](#).
6. For a small number of households (15) across all waves, there were multiple responses but no primary respondent. For these cases, we randomly select only one response per student in each household and wave and exclude the others from our analytic sample.
7. Throughout our analysis our sample size changes due to some missingness in survey responses. In [Appendix C](#), we show that our findings are robust to these changes in sample composition by performing our analysis with each specification limited to the most restricted analytic sample. In additional analyses, available upon request from the authors, we find evidence that within-wave sample attrition between model specifications is largely uncorrelated with respondent race or ethnicity indicating that the key relationships we study here are likely unaffected by this attrition.
8. While we combine remote and hybrid learning for fall of 2021 into a single variable, we explore these as separate outcomes using a multinomial logit model following the logit specification described in the next section. Full results for this multinomial analysis are presented as average marginal effects in [Appendix D](#).
9. Due to sample size limitations, we include non-Hispanic AIAN, Hawaiian or Pacific Islander, and mixed-race individuals in this other race category.
10. Detailed results from these factor analyses can be found in the technical [Appendix A](#).
11. As this is constructed from one question, we are unable to build the measure using factor analysis. Instead, we include this as a continuous variable with lower values indicating lower levels of trust.
12. Comorbidities in the UCA survey include diabetes, cancer, heart disease, high blood pressure, asthma or a chronic lung disease, kidney disease, autoimmune disorders, and obesity.
13. When both surveys were fielded, individuals aged 12 and up were eligible for vaccination.
14. 45 respondents in the fall 2021 sample and 55 respondents in the winter 2022 sample indicated that their child attended a “virtual school” but did not differentiate between virtual schools operated by a public school district or charters. We exclude these individuals from our analysis.
15. We are unable to include these controls for the summer 2021 analysis.
16. <https://uasdata.usc.edu/index.php>
17. Note that weights aligned to the characteristics of U.S households with K-12 or higher education students are not provided in the UAS. Provided sample weights bring the sample in line with the U.S. adult population.
18. The summer survey did not ask respondents about their preference for remote or hybrid learning separately.
19. We performed similar robustness checks by interacting race and ethnicity indicators with our measures of public health trust, media trust, and COVID-19 related comorbidities but did not find meaningful patterns.
20. Full results are available upon request from the authors.

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Data availability statement

The data that support the findings of this study are available with registration from the Understanding America Study at <https://uasdata.usc.edu/>.

References

- Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models. *Economics Letters*, 80(1), 123–129. [https://doi.org/10.1016/S0165-1765\(03\)00032-6](https://doi.org/10.1016/S0165-1765(03)00032-6)
- Barnum, M. (2021). Polls show most—though not all—parents are getting the type of instruction they want for their kids. *Chalkbeat*. <https://www.chalkbeat.org/2021/2/18/22289735/parents-polls-schools-opening-remote>.
- Calarco, J. M., Coleman, M., & Halpern-Manners, A. (2021). Mechanisms of stratification in in-person instruction in the wake of COVID-19. *SocArXiv*. <https://doi.org/10.31235/osf.io/2czkx>
- Camp, A., & Zamarro, G. (2021). Determinants of ethnic differences in school modality choices during the COVID-19 crisis. *Educational Researcher*, 51(1), 6–16. <https://doi.org/10.3102/0013189X2111057562>
- Camp, A. M., Zamarro, G., & McGee, J. B. (2022). *Changes in teachers' mobility and attrition in Arkansas during the first two years of the COVID-19 pandemic* (EdWorkingPaper No. 21-448). <https://www.edworkingpapers.com/ai22-589>
- Chua, K.-P., DeJonckheere, M., Reeves, S. L., Tribble, A. C., & Prosser, L. A. (2021). Factors associated with school attendance plans and support for COVID-19 risk mitigation measures among parents and guardians. *Academic Pediatrics*, 21(4), 684–693. <https://doi.org/10.1016/j.acap.2020.11.017>
- Cohodes, S., & Pitts, C. (2022). A new COVID-19 data source for answering emerging pandemic questions (*The Evidence Project*). Center on Reinventing Public Education. <https://crpe.org/wp-content/uploads/final-COVID-school-data-hub-blog.pdf>
- Collins, J. E. (2021). *Who wants to reopen schools in a pandemic? Explaining public preferences reopening schools and public compliance with reopening orders during the COVID-19*

- pandemic* (EdWorkingPaper No. 21-448). Annenberg Institute for School Reform at Brown University. <https://www.edworkingpapers.com/ai21-448>
- Darling-Aduana, J., Woodyard, H. T., Sass, T. R., & Barry, S. S. (2022). *Learning-mode choice, student engagement, and achievement growth during the COVID-19 pandemic*. (CALDER Working Paper No. 260-0122). National Center for Analysis of Longitudinal Data in Education Research. <https://files.eric.ed.gov/fulltext/ED618467.pdf>
- DeAngelis, C. A., & Makridis, C. (2021). Are school reopening decisions related to union influence? *Social Science Quarterly*, 102(5), 2266–2284. <https://doi.org/10.1111/ssqu.12955>
- DeAngelis, C. A., & Makridis, C. A. (2022). Are school reopening decisions related to funding? Evidence from over 12,000 districts during the COVID-19 pandemic. *Journal of School Choice*, 16(3), 454–476. <https://doi.org/10.1080/15582159.2022.2077164>
- Dee, T. S. (2023). *Where the kids went: Nonpublic schooling and demographic change during the pandemic exodus from public schools*. The Urban Institute. <https://www.urban.org/research/publication/where-kids-went-nonpublic-schooling-and-demographic-change-during-pandemic>
- Dee, T. S., Huffaker, E., Phillips, C., & Sagara, E. (2022). The revealed preferences for school reopening: Evidence from public-school disenrollment. *American Educational Research Journal*. <https://doi.org/10.3102/00028312221140029>
- Freidus, A., & Turner, E. O. (2023). Contested justice: Rethinking educational equity through New York City’s COVID-19 school reopening debates. *Educational Evaluation and Policy Analysis*, 45(3), 437–463. <https://doi.org/10.3102/01623737221121802>
- Goldhaber, D., & Gratz, T. (2022). *School district staffing challenges in a rapidly recovering economy* (CALDER Flash Brief No. 29-0122). National Center for Analysis of Longitudinal Data in Education Research. <https://caldercenter.org/publications/school-district-staffing-challenges-rapidly-recovering-economy>
- Goldhaber, D., Kane, T., McEachin, A., Morton, E., Patterson, T., & Staiger, D. (2022). *The consequences of remote and hybrid instruction during the pandemic* (NBER Working Paper No. 30010). National Bureau of Economic Research. <https://doi.org/10.3386/w30010>
- Greenblatt, A. (2021, August 3). School Choice Advances in the States. *Education Next*. <https://www.educationnext.org/school-choice-advances-in-states-advocates-describe-breakthrough-year/>
- Grossmann, M., Reckhow, S., Strunk, K. O., & Turner, M. (2021). All states close but red districts reopen: The Politics of in-person schooling during the COVID-19 pandemic. *Educational Researcher*, 50(9), 637–648. <https://doi.org/10.3102/0013189X211048840>
- Haderlein, S. K., Saavedra, A. R., Polikoff, M. S., Silver, D., Rapaport, A., & Garland, M. (2021). Disparities in educational access in the time of COVID: Evidence from a nationally representative panel of American families. *AERA Open*, 7. <https://journals.sagepub.com/doi/full/10.1177/23328584211041350>
- Harris, D. N., & Oliver, D. M. (2021). *Why did so many public schools stay remote during the COVID crisis?* [Policy Brief]. National Center for Research on Education Access and Choice. <https://reachcentered.org/publications/why-did-so-many-public-schools-stay-remote-during-the-covid-crisis#:~:text=Political%20factors%20were%20also%20important,stay%20remote%20in%20the%20fall>
- Hartney, M. T., & Finger, L. K. (2021). Politics, markets, and pandemics: Public education’s response to COVID-19. *Perspectives on Politics*, 20(2), 457–473. <https://doi.org/10.1017/S1537592721000955>
- Henderson, M. B., Houston, D., Peterson, P. E., & West, M. (2021). Parent poll reveals support for school Covid-safety measures despite vaccine hesitancy, partisan polarization. *Education Next*, 22(1). <https://www.educationnext.org/parent-poll-reveals-supportschool-covid-safety-measures-despite-vaccine-hesitancy-partisan-polarization/>

- Houston, D. M., & Steinberg, M. P. (2022). *Public support for educators and in-person instruction during the COVID-19 pandemic* (EdWorkingPaper No. 22-575). Annenberg Institute for School Reform at Brown University. <https://eric.ed.gov/?id=ED625923>
- Kogan, V. (2021). *What's behind racial differences in attitudes toward school reopening (and what to do about them)*. American Enterprise Institute. <https://www.aei.org/researchproducts/report/whats-behind-racial-differences-in-attitudes-toward-school-reopeningand-what-to-do-about-them/>
- Kretchmar, K., & Brewer, T. J. (2022). Neoliberalism, COVID, anti-science, and the politics of school reopening. *Education Policy Analysis Archives*, 30(42). <https://doi.org/10.14507/epaa.30.6959>
- Kurmann, A., & Lalé, E. (2023). School closures and effective in-person learning during COVID-19. *Economics of Education Review*, 95, 102422–102422. <https://doi.org/10.1016/j.econedurev.2023.102422>
- Mahnken, K. (2023, April 17). Black parents open to new forms of schooling, polling suggests. *The 74 Million*. <https://www.the74million.org/article/black-parents-open-to-new-forms-of-schooling-polling-suggests/>
- Mariano, B., Hemphill, A. A., Loures-Elias, A. P. S., Garcia, L., Cooper, D., & Coombes, E. (2022). Power in a pandemic: Teachers unions and their responses to school reopening. *AERA Open*, 8. <https://journals.sagepub.com/doi/10.1177/23328584221074337>
- Musaddiq, T., Stange, K. M., Bacher-Hicks, A., & Goodman, J. (2021). *The pandemic's effect on demand for public schools, homeschooling, and private schools* [NBER Working Paper No. 29262]. National Bureau of Economic Research. <http://www.nber.org/papers/w29262>
- National Center for Education Statistics. (2021a). *Impact of the Coronavirus pandemic on the elementary and secondary education system*. U.S. Department of Education, Institute of Education Sciences. <https://nces.ed.gov/programs/coe/indicator/tcb>
- National Center for Education Statistics. (2021b, September). *September 2021 school pulse panel*. IES School Pulse Panel. <https://ies.ed.gov/schoolsurvey/2021SeptemberSPP/>
- Parolin, Z., & Lee, E. K. (2021). Large socio-economic, geographic and demographic disparities exist in exposure to school closures. *Nature Human Behaviour*, 5(4), 522–528. <https://doi.org/10.1038/s41562-021-01087-8>
- Samuels, C. A. (2022, March 19). Districts face difficulty luring covid-cautious parents back to school. *The Washington Post*. <https://hechingerreport.org/luring-covid-cautious-parents-back-to-school/>
- Singer, J. (2022). *School reopening decisions during the COVID-19 pandemic: What can we learn from the emerging literature?* (EdWorkingPaper No. 22-617). Annenberg Institute for School Reform at Brown University. <https://doi.org/10.26300/Z9W0-9Q22>
- Singer, J., Marsh, J. A., Menefee-Libey, D., Alonso, J., Bradley, D., & Tracy, H. (2023). The politics of school reopening during COVID-19: A multiple case study of five urban districts in the 2020–21 school year. *Educational Administration Quarterly*, 59(3), 542–593. <https://doi.org/10.1177/0013161X231168397>
- State Policy Network. (2022, June 9). *What States Passed School Choice Policies in 2022?* <https://spn.org/articles/what-states-passed-school-choice-policies-in-2022/>

Appendix A: Data and Variable Construction

We use three waves of UAS¹⁶ survey data from summer 2021 (UAS 348; June and July), fall 2021 (UAS 350; September and October), and winter 2022 (UAS 351; February and March). The UAS panel consists of a national sample of American households using an address-based sample frame. The UAS team recruits participants through several sample batches and uses an adaptative sampling design where addresses from zip codes across the US are randomly selected for recruitment. Each sample batch, however, is adjusted to account for differential nonresponse in prior waves, and zip codes with higher proportions of non-respondents are sampled more heavily than those with proportions similar to or greater than population proportions. The UAS also includes separate oversamples for Native American respondents, respondents from Los Angeles County, and California populations. For each completed survey in the UAS, the UAS team provides wave-specific sample weights. We use sample weights in our analysis and descriptive statistics that keep the representativeness of the sample to the U.S. population aged 18 and older concerning gender, race and ethnicity, education, and geographical location.¹⁷

In-Person learning

In our summer analysis, we use an indicator of whether the parent answers “yes” to the question “*Are you planning to send (selected child) to school in person at the beginning of the 2021–22 school year?*” If the respondent answers “no” or “unsure,” we code them as a zero. In the fall, we use an indicator of whether the parent selects “in-person only” in response to the question “*How is (selected child) currently attending school?*” If the respondent selects “remote only,” “both in-person and remote (hybrid),” or “other, please specify,” we code them as a zero.

Demographics

In our primary analysis, we control for the self-reported race or ethnicity of the respondents by using three binary variables: Black, Hispanic, and other race or ethnicity. In [Appendix F](#), we provide results with the Hispanic category disaggregated by geographic origin and Asian respondents separated from the “other race or ethnicity” category. In all analyses, self-identified white respondents are our reference category. We also control for gender using a binary variable for self-reported gender (male or female). As household composition may affect the ability of families to facilitate remote learning, we use a binary variable that indicates whether respondents report being married or living with their partner.

Education

We control for the self-reported education level of the respondent with two binary variables: “no college” and “some college” (with “college” as the omitted category). If the respondent reports having a high school degree or less, with no post-secondary education, we categorize them as “no college.” If the respondent reports having some postsecondary experience but does not have a bachelor’s degree, we categorize them as “some college.” If the respondent reports having a bachelor’s degree or higher, we categorize them as “college.” We select these thresholds to ensure adequate cell sizes for all categories and to construct three categories with proportions of UCA respondents in each that approximately correspond (to the extent

possible) with the distribution of educational experience among American adults according to the 2021 American Community Survey.

Household income

Our analysis also includes controls for household income with two binary variables: low-income and mid-income. We define low-income respondents as those who report a household income of under \$40,000 per year, mid-income respondents as those who report a household income of \$40,000 to \$100,000 per year, and high-income respondents, the reference category, as those who report a household income of over \$100,000 per year. As with the thresholds for education, we select these thresholds to ensure that income bins hold a similar number of respondents across survey waves, avoid small cell size issues, and are approximately in line with the income distribution reported in the 2021 American Community Survey.

Political leanings

We control for political leanings using two binary variables (Trump or Biden voter) built from election data from the UAS 2020 Presidential Election surveys. We merge in data from the post-election survey, which indicates whether respondents voted for Biden, Trump, a third-party candidate, or were nonvoters. Among our summer 2021 sample, 213 respondents did not answer the post-election survey. Among our fall 2021 sample, there were 154. Among our winter 2022 sample, there were 117. For these missing respondents, we impute data from pre-election polling surveys, which indicates which candidate respondents planned to vote for in October or November of 2020, or if they were undecided or nonvoters. In total, we impute 213 values for specification C in our summer 2021 analysis, 154 values for specification D in our fall 2021 analysis, and 117 values for specification D in our winter 2022 analysis. Due to cell size concerns, we exclude indicator variables for nonvoters and third-party voters from our analyses.

Public health and media trust

The summer survey (UAS 348) asked respondents to rate their trustworthiness of public health institutions and mainstream news sources on a scale of one (do not trust) to four (fully trust). We develop an index of trust in public health institutions by conducting a factor analysis of three variables: trust in the Center for Disease Control and Prevention (CDC), in the Department of Health and Human Services (HHS), and in local public health officials. The results of the factor analysis are shown below.

Factor Analysis for Public Health Trust		
Variable	Factor 1	Uniqueness
Local Public Health	0.891	0.207
HHS	0.931	0.134
CDC	0.923	0.149

In contrast to similar analysis results by Camp and Zamarro (2021), we find that a unique factor was retained including similar weight for all media sources but Fox News, which was weighted far lower than other factors and appeared to capture a different construct. Therefore, we use two media trust variables. Firstly, we construct a media trust factor that combines trust

in CNN, MSNBC, NBC, ABC, CBS, and national newspapers using an orthogonal rotation of the factor analysis results. Secondly, we include a separate variable indicating the respondent's trust in Fox News on a four-point scale from one (do not trust) to four (fully trust). We report the results of our factor analyses for trust in national media below.

Variable	Factor 1	Uniqueness
CNN	0.939	0.119
MSNBC	0.950	0.098
NBC	0.951	0.095
CBS	0.953	0.093
ABC	0.938	0.120
National Newspapers	0.908	0.176

COVID-19 comorbidities

In both the summer and fall surveys, respondents indicate whether they have a significant COVID-19 health risk due to diabetes, high blood pressure, kidney disease, autoimmune disease, lung diseases such as COPD, or obesity. We build a binary variable to indicate if the respondent reports having been diagnosed with any of these conditions.

Fully vaccinated

In both the summer and the fall, the UAS asks whether the survey respondents are vaccinated, how many doses they have received, and which vaccine they received (Pfizer, Moderna, Johnson & Johnson, or other). If the respondent answered these questions in a previous survey, the survey asks them to confirm the information they previously provided. As of summer and fall 2021, to be fully vaccinated with the Johnson & Johnson vaccine, only one dose was necessary, and boosters were unavailable. Some respondents may therefore have only received one Johnson & Johnson COVID-19 vaccine dose yet be fully vaccinated according to FDA standards. We code respondents with a one for fully vaccinated if the respondent indicated receiving at least two doses of the Pfizer or Moderna COVID-19 vaccines or one dose of the Johnson & Johnson COVID-19 vaccine.

Household vaccine eligibility

A household's decisions about in-person learning may involve weighing risks to other family members, particularly those under the age of 12 who were ineligible for any COVID vaccine at the time of the survey. To better capture these dynamics, we include an indicator variable that takes a value of 1 if all members of the household are older than 12 years old at the beginning of the 2021–22 school year in our final specification. The ages of household members are captured using quarterly surveys administered by the UAS and so, there may be some measurement error if a respondent's child has turned 12 between the completion of the quarterly survey and the survey used for analysis, but we believe this error will affect only a very limited number of cases. As vaccine eligibility expanded to include children as young as 5 years old in November of 2021, we perform a robustness check for our winter 2022 analysis where this indicator takes value 1 if everyone in the household is over the age of 4. Results of this analysis, available upon request from the authors, are not meaningfully different from results reported in the paper.

Local COVID-19 activity

We merge our survey data with information on county-level COVID-19 incidence collected by the New York Times and use population information from the U.S. Census Bureau to construct local COVID-19 incidence rates. Due to constraints stemming from maintaining identifiability, these incidence rates represent the proportion of a county's residents that have been confirmed to have been infected with COVID-19 between the first day of each consecutive survey wave. Values for the summer 2021 survey thus represent the proportion of respondents' home county residents infected between May 12th and Invalid Date NaN, NaN. Values for the fall 2021 survey similarly represent the proportion of respondents' home county residents infected between June 9th and Invalid Date NaN, NaN. For analyses using the winter 2022 survey data, we are unable to match county-level incidence rates to individual respondents. Instead, we construct a variable like the county-level measure described above using state-level data. Values for the winter 2022 survey then represent the proportion of the respondent's state population infected between Invalid Date NaN, NaN, and Invalid Date NaN, NaN.

Urbanicity

We include a measure of urbanicity to proxy for different factors associated with geographies such as the availability of high-speed internet and alternative schooling options. Our measure is constructed from UAS data which categorizes respondents based on the share of residents in a respondent's zip code tabulation area (ZCTA) that live in census-designated urbanized areas. If all individuals within a ZCTA reside in an urbanized area, the respondent is considered an urban respondent whereas if no individuals within a ZCTA reside in an urbanized area they are rural respondents. Those respondents who live within a ZCTA which has a mixture of individuals residing in urbanized and non-urbanized areas are considered mixed or suburban respondents.

Remote learning available

We control for the availability of remote learning using self-reported data from parents. The fall 2021 survey asks respondents to estimate what percentage of the students in their child's K-12 school were currently attending school in person at that time. We infer that parents who report less than 100% of students in their school attend in-person likely are aware that remote or hybrid learning are available options in their school. We use this data to create a binary variable for the availability of remote options that takes the value of zero if respondents report 100% of students in their child's school attending in-person and one if respondents report any other percentage.

Type of school attended

Prior research has found that students attending charter schools were less likely to attend school in-person than public school students in the 2020–21 school year while students attending private schools were more likely to attend in person than public school students (Camp & Zamarro, 2021; Cohodes & Pitts, 2022; Harris & Oliver, 2021; Singer, 2022). The fall 2021 and winter 2022 surveys ask respondents to indicate if their child attends either a public school, charter school, private school, or virtual school. As virtual schools may be public, charter, or private schools, we exclude respondents who select this answer ($N = 45$ in fall 2021 and $N = 55$ in winter 2022) from our analysis.

We then construct indicator variables indicating the sector (public, charter, or private) of each student's school and include these binary indicators in specifications B, C, and D of our analysis for fall 2021 and winter 2022. We exclude the indicator for private school students in specification E as the reduced sample size results in the variable perfectly predicting in-person learning (e.g., all private school students attend in-person) in that specification.

Grade level

In both survey waves, respondents are asked to identify which grade the randomly selected child they are asked about is in. The options range from kindergarten to twelfth grade. We construct a categorical variable with three levels. Children in fourth grade and lower are categorized as attending elementary school. Middle school children are defined as being in fifth through eighth grades. High school children are defined as being in ninth through twelfth grades.

Appendix B: Summary statistics and results restricting sample to parents

As the Understanding America Study (UAS) is a household survey eligible to anyone aged 18 or over who resides in the household, respondents may not necessarily be the parent of the child questions are being asked about. In our primary analysis, we do not limit our analytic sample to parents (i.e., biological, adoptive, or stepparent) because all respondents in a household may contribute to care responsibilities and might be aware of the child's learning modality, as they are living with the child. As a robustness check, we repeat our analysis described in the analytic strategy section with a sample limited to parents of a school-aged child living in the household.

While the UAS waves of data we use in the analysis do not ask respondents if they are the parent of the randomly selected child whom questions are asked of, the UAS does collect household information via a quarterly "My Household" survey. This survey asks each respondent to list the age of each member of the household along with their relation to that household member. We define parents as anyone who indicates that a household member is a "child (including step/adopted)" aged five through 18. We additionally include households where the respondent is a grandparent with a grandchild aged five through 18, but no child, living in the household. This sample restriction would thus exclude responses from older siblings, extended family, and unmarried partners who do not claim the child as their own. Descriptive statistics and results can be found below.

Table B1. Summer 2021 sample characteristics.

	All	White	Black	Hispanic	Other
	N=869	N=551	N=78	N=164	N=14
<i>Student Characteristics</i>					
Elementary Student	0.451	0.457	0.321	0.517	0.451
Middle School Student	0.327	0.328	0.418	0.288	0.238
High School Student	0.223	0.215	0.261	0.195	0.310
<i>Urbanicity</i>					
Rural	0.214	0.253	0.195	0.131	0.098
Suburban/Mixed	0.573	0.596	0.493	0.562	0.531
Urban	0.213	0.152	0.312	0.308	0.371
<i>Political Leanings</i>					
Trump Voter	0.431	0.564	0.042	0.291	0.318
Biden Voter	0.569	0.436	0.958	0.709	0.682
<i>Institutional Trust</i>					
Public Health Trust	-0.081	-0.127	-0.124	-0.058	0.432
Fox News Trust	1.512	1.467	1.717	1.498	1.547
National Media Trust	-0.056	-0.206	0.254	0.006	0.548
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.002	0.002	0.002	0.002	0.004
COVID-19 Comorbidity	0.421	0.428	0.501	0.386	0.276
Fully Vaccinated	0.448	0.458	0.342	0.485	0.453
Household Vaccine Eligible	0.217	0.205	0.246	0.199	0.345
Plans on In-Person Learning	0.888	0.913	0.767	0.872	0.968

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table B2. Fall 2021 sample characteristics.

	All	White	Black	Hispanic	Other
	N=1108	N=720	N=86	N=215	N=15
<i>Student Characteristics</i>					
Elementary Student	0.389	0.404	0.292	0.405	0.369
Middle School Student	0.308	0.319	0.321	0.307	0.181
High School Student	0.303	0.277	0.386	0.288	0.450
Attends Charter School	0.055	0.044	0.021	0.088	0.115
Attends Private School	0.072	0.088	0.012	0.068	0.044
<i>Urbanicity</i>					
Rural	0.209	0.235	0.259	0.130	0.069
Suburban/Mixed	0.540	0.568	0.451	0.503	0.523
Urban	0.252	0.197	0.291	0.367	0.408
<i>Political Leanings</i>					
Trump Voter	0.419	0.543	0.070	0.294	0.205
Biden Voter	0.581	0.457	0.930	0.706	0.795
<i>Institutional Trust</i>					
Public Health Trust	0.005	-0.032	-0.072	0.015	0.453
Fox News Trust	1.538	1.489	1.767	1.534	1.592
National Media Trust	0.032	-0.132	0.400	0.121	0.608
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.030	0.031	0.037	0.026	0.027
COVID-19 Comorbidity	0.425	0.433	0.532	0.368	0.345
Fully Vaccinated	0.578	0.578	0.434	0.645	0.597
Household Vaccine Eligible	0.252	0.225	0.298	0.260	0.401
Remote Option Available	0.589	0.605	0.583	0.567	0.521
Attending In-Person	0.937	0.948	0.888	0.943	0.897

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table B3. Winter 2022 sample characteristics.

	All	White	Black	Hispanic	Other
	N=1108	N=720	N=86	N=215	N=15
<i>Student Characteristics</i>					
Elementary Student	0.416	0.419	0.309	0.464	0.386
Middle School Student	0.300	0.323	0.305	0.259	0.210
High School Student	0.284	0.257	0.387	0.277	0.404
Attends Charter School	0.054	0.041	0.034	0.089	0.088
Attends Private School	0.069	0.083	0.009	0.073	0.029
<i>Urbanicity</i>					
Rural	0.212	0.241	0.229	0.145	0.110
Suburban/Mixed	0.535	0.572	0.434	0.472	0.555
Urban	0.253	0.187	0.336	0.383	0.334
<i>Political Leanings</i>					
Trump Voter	0.425	0.548	0.064	0.312	0.207
Biden Voter	0.575	0.452	0.936	0.688	0.793
<i>Institutional Trust</i>					
Public Health Trust	0.003	-0.034	-0.071	0.043	0.378
Fox News Trust	1.541	1.503	1.754	1.532	1.516
National Media Trust	0.007	-0.145	0.396	0.068	0.501
<i>COVID-19 Risk</i>					
COVID-19 Incidence Rate	0.099	0.100	0.091	0.098	0.098
COVID-19 Comorbidity	0.417	0.425	0.517	0.374	0.328
Fully Vaccinated	0.670	0.638	0.578	0.773	0.765
Household Vaccine Eligible	0.750	0.743	0.818	0.713	0.855
Remote Option Available	0.579	0.572	0.568	0.655	0.335
Attending In-Person	0.926	0.940	0.846	0.913	0.981

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table B4. Factors associated with preference for in-person learning (Summer 2021).

	(A)	(B)	(C)	(D)
	N=869	N=719	N=685	N=652
Black	-0.164*** (0.061)	-0.185** (0.085)	-0.141* (0.076)	-0.162** (0.079)
Hispanic	-0.043 (0.041)	-0.027 (0.041)	-0.012 (0.043)	-0.030 (0.042)
Other Race/Ethnicity	0.052** (0.023)	0.033 (0.036)	0.034 (0.040)	0.061** (0.026)
Middle School Student		-0.008 (0.043)	0.014 (0.044)	-0.006 (0.065)
High School Student		-0.002 (0.038)	0.012 (0.037)	-0.003 (0.038)
Rural		0.031 (0.044)	0.022 (0.045)	0.043 (0.041)
Urban		0.030 (0.036)	0.024 (0.036)	0.054 (0.034)
Trump Voter			0.031 (0.044)	0.014 (0.044)
Public Health Trust Factor			0.078** (0.031)	0.074** (0.029)
Trust in Fox News			0.006 (0.027)	0.012 (0.029)
National Media Trust Factor			-0.068** (0.030)	-0.077** (0.032)
COVID-19 Comorbidity Risk				-0.005 (0.032)
Fully Vaccinated				0.067 (0.042)
Household Vaccine Eligible				-0.015 (0.061)
Incidence Rate				0.829 (3.377)
Demographic Controls	No	Yes	Yes	Yes
Pseudo R ²	0.043	0.127	0.160	0.193

Note: .01 - ***; .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table B5. Factors Associated with In-Person Learning (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1108	N=838	N=838	N=609	N=531
Black	-0.060 (0.044)	-0.046 (0.042)	-0.068 (0.044)	-0.057 (0.045)	-0.089 (0.056)
Hispanic	-0.005 (0.026)	-0.011 (0.036)	-0.019 (0.038)	-0.019 (0.039)	-0.032 (0.045)
Asian	-0.051 (0.058)	-0.018 (0.045)	-0.009 (0.040)	-0.029 (0.038)	-0.046 (0.046)
Other Race/Ethnicity		-0.021 (0.023)	-0.026 (0.019)	-0.023 (0.018)	-0.017 (0.024)
Middle School Student		-0.070** (0.030)	-0.080*** (0.030)	-0.065** (0.026)	-0.058** (0.028)
High School Student		-0.144* (0.078)	-0.162** (0.069)	-0.269*** (0.068)	-0.232*** (0.073)
Charter School Student		0.019 (0.044)	-0.049 (0.078)	-0.075 (0.112)	
Private School Student		-0.128*** (0.042)	-0.140*** (0.041)	-0.118** (0.048)	-0.131** (0.056)
Rural		-0.008 (0.020)	-0.005 (0.019)	-0.005 (0.020)	-0.008 (0.019)
Urban			-0.085*** (0.018)	-0.095*** (0.020)	-0.100*** (0.020)
Remote Option Available				0.043* (0.026)	0.045* (0.027)
Trump Voter				-0.016 (0.014)	-0.020 (0.016)
Public Health Trust Factor				0.016 (0.019)	0.019 (0.020)
Trust in Fox News				0.012 (0.014)	0.015 (0.015)
National Media Trust Factor					-0.011 (0.022)
COVID-19 Comorbidity Risk					0.016 (0.023)
Fully Vaccinated					0.017 (0.022)
Household Vaccine Eligible					0.532 (0.626)
Incidence Rate					-0.588 (0.805)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.014	0.230	0.302	0.408	0.430

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table B6. Factors Associated with In-Person Learning (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1102	N=816	N=816	N=588	N=518
Black	-0.081* (0.049)	-0.090* (0.065)	-0.099* (0.067)	-0.092 (0.094)	-0.123** (0.088)
Hispanic	-0.026 (0.030)	-0.010 (0.037)	-0.004 (0.033)	0.044* (0.022)	0.011 (0.027)
Other Race/Ethnicity	0.042 (0.016)	0.022 (0.022)	0.019* (0.025)	0.008 (0.037)	0.016*** (0.026)
Middle School Student		-0.027 (0.027)	-0.029 (0.025)	-0.035 (0.031)	-0.020 (0.020)
High School Student		-0.032 (0.030)	-0.035 (0.030)	-0.033 (0.032)	-0.048 (0.031)
Charter School Student		0.014 (0.033)	-0.010 (0.042)	-0.088 (0.092)	0.020 (0.053)
Private School Student		-0.035 (0.066)	-0.090 (0.095)	-0.148 (0.097)	
Rural		-0.046 (0.034)	-0.044 (0.034)	-0.052* (0.031)	-0.023 (0.023)
Urban		0.030 (0.022)	0.032 (0.024)	0.023 (0.028)	0.017 (0.025)
Remote Option Available			-0.062*** (0.023)	-0.061*** (0.023)	-0.049*** (0.022)
Trump Voter				0.061* (0.032)	0.068*** (0.033)
Public Health Trust Factor				0.037* (0.021)	0.039* (0.022)
Trust in Fox News				-0.023 (0.021)	-0.003 (0.018)
National Media Trust Factor				-0.025 (0.016)	-0.030 (0.017)
COVID-19 Comorbidity Risk					0.047 (0.034)
Fully Vaccinated					0.090*** (0.042)
Household Vaccine Eligible					-0.019 (0.024)
Incidence Rate					-1.656* (0.880)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.021	0.129	0.163	0.254	0.384

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Appendix C: Sensitivity to Changes in Sample Composition

Our analyses draw from multiple data sources and Understanding America Study surveys to construct a comprehensive set of covariates and plausibly explanatory factors. However, because we draw from several data sources the size and composition of our analytic sample change somewhat in each specification. Tables C.1, C.2, and C.3, below, repeat the same analysis we use in our primary results; however, each table is limited to the final analytic sample for summer 2021, fall 2021, and winter 2022, respectively. These robustness checks allow us to compare how stable our estimates are and what proportion may be attributable to changes in the sample.

Overall, the results presented below are quite similar to those we select as our main results, indicating that the relationships we find between specifications are not caused by changes in sample composition. To the extent that the results reported below and results in our main

specification differ in sign, these changes are concentrated in specifications and variables with near-zero point estimates and large standard errors. These spurious fluctuations would be expected given that the estimates were imprecise in both our main results and these alternatives. As a robustness check of this supplemental analyses, we conduct a series of z-tests (available upon request from the authors) and find that there are no significant differences between estimates in our main results and results from this alternative specification and the 90 percent confidence level or greater.

Table C1. Factors Associated with Preference for In-Person Learning (Summer 2021).

	(A)	(B)	(C)	(D)
	N=897	N=897	N=897	N=897
Black	-0.151*** (0.055)	-0.114** (0.057)	-0.088 (0.057)	-0.081 (0.055)
Hispanic	-0.104** (0.052)	-0.087* (0.048)	-0.066 (0.043)	-0.067 (0.043)
Other Race/Ethnicity	0.017 (0.038)	0.012 (0.045)	0.028 (0.042)	0.037 (0.039)
Middle School Student		-0.020 (0.042)	-0.009 (0.040)	0.016 (0.044)
High School Student		-0.012 (0.037)	-0.015 (0.035)	-0.013 (0.037)
Rural		0.015 (0.044)	0.019 (0.042)	0.024 (0.041)
Urban		-0.015 (0.037)	-0.022 (0.036)	-0.009 (0.037)
Trump Voter			-0.012 (0.040)	0.000 (0.039)
Public Health Trust Factor			0.070** (0.028)	0.063** (0.027)
Trust in Fox News			-0.004 (0.022)	0.003 (0.024)
National Media Trust Factor			-0.091*** (0.027)	-0.090*** (0.026)
COVID-19 Comorbidity Risk				-0.012 (0.031)
Fully Vaccinated				0.050 (0.040)
Household Vaccine Eligible				-0.053 (0.042)
Incidence Rate				-0.998 (3.251)
Demographic Controls	No	Yes	Yes	Yes
Pseudo R ²	0.038	0.094	0.136	0.145

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table C2. Factors Associated with In-Person Learning (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=679	N=679	N=679	N=679	N=679
Black	-0.106** (0.053)	-0.060** (0.030)	-0.076** (0.032)	-0.080** (0.038)	-0.094* (0.055)
Hispanic	0.005 (0.033)	-0.007 (0.047)	-0.004 (0.042)	0.001 (0.042)	-0.007 (0.036)
Other Race/Ethnicity	-0.041 (0.065)	-0.049 (0.036)	-0.052 (0.034)	-0.055 (0.038)	-0.051 (0.053)
Middle School Student		0.010 (0.033)	0.008 (0.029)	0.013 (0.026)	0.016 (0.026)
High School Student		-0.047* (0.026)	-0.045* (0.027)	-0.037 (0.028)	-0.044 (0.032)
Charter School Student		-0.086** (0.038)	-0.090** (0.037)	-0.084** (0.035)	-0.108 (0.072)
Private School Student					
Rural		-0.071** (0.032)	-0.066** (0.030)	-0.077** (0.030)	-0.087** (0.041)
Urban		0.008 (0.031)	0.008 (0.029)	0.005 (0.028)	0.006 (0.023)
Remote Option Available			-0.131** (0.051)	-0.145*** (0.044)	-0.094*** (0.020)
Trump Voter				0.046 (0.036)	0.045 (0.030)
Public Health Trust Factor				-0.005 (0.016)	-0.009 (0.017)
Trust in Fox News				0.034 (0.021)	0.033 (0.020)
National Media Trust Factor				0.021 (0.018)	0.019 (0.017)
COVID-19 Comorbidity Risk					0.005 (0.027)
Fully Vaccinated					0.048* (0.026)
Household Vaccine Eligible					-0.028 (0.036)
Incidence Rate					-0.515 (0.741)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.040	0.169	0.244	0.277	0.299

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table C3. Factors Associated with In-Person Learning (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=661	N=661	N=661	N=661	N=661
Black	-0.148** (0.063)	-0.081** (0.041)	-0.084** (0.042)	-0.060 (0.048)	-0.093 (0.069)
Hispanic	0.009 (0.035)	0.019 (0.060)	0.022 (0.055)	0.037 (0.054)	0.003 (0.038)
Other Race/Ethnicity	0.005 (0.036)	0.008 (0.052)	-0.012 (0.047)	0.004 (0.047)	-0.007 (0.044)
Middle School Student		-0.057 (0.038)	-0.059* (0.035)	-0.062* (0.033)	-0.046* (0.024)
High School Student		-0.052 (0.038)	-0.056 (0.038)	-0.055 (0.036)	-0.068** (0.035)
Charter School Student		0.022 (0.043)	-0.003 (0.038)	-0.024 (0.036)	-0.031 (0.052)
Private School Student					
Rural		0.019 (0.032)	0.020 (0.031)	0.005 (0.032)	0.031 (0.026)
Urban		-0.002 (0.036)	-0.006 (0.036)	-0.006 (0.034)	0.002 (0.038)
Remote Option Available			-0.118*** (0.045)	-0.120*** (0.045)	-0.097*** (0.023)
Trump Voter				0.063 (0.044)	0.070** (0.031)
Public Health Trust Factor				0.014 (0.019)	0.003 (0.018)
Trust in Fox News				0.016 (0.024)	0.008 (0.022)
National Media Trust Factor				-0.023* (0.012)	-0.019* (0.011)
COVID-19 Comorbidity Risk					0.015 (0.026)
Fully Vaccinated					0.088* (0.048)
Household Vaccine Eligible					-0.048* (0.027)
Incidence Rate					-2.879*** (0.909)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.062	0.101	0.170	0.204	0.278

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Appendix D: Multinomial Logit Estimates for Fall 2021 and Winter 2022

Our primary analysis focuses on factors associated with in-person learning during the 2021-22 school year. However, factors included in our primary analysis may also explain the choice of remote and hybrid learning options differently. To explore how factors included in our binary logit analysis for fall 2021 and winter 2022¹⁸ relate to different modalities, we code the learning modality (e.g., remote, hybrid, or in-person) reported by each respondent as a single categorical outcome and use a series of multinomial logit models following the models presented in Tables 5 and 6. We then estimate the average marginal effects for these models and report the association between each factor and the probability of selecting in-person, remote, and hybrid modalities in tables D.1-D.6, below.

Table D1. Factors Predictive of In-Person Learning – Average Marginal Effects (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1075	N=1074	N=773	N=679
Black	-0.084** (0.037)	-0.068* (0.040)	-0.084** (0.042)	-0.099 (0.064)	-0.135** (0.063)
Hispanic	0.006 (0.022)	0.007 (0.031)	0.003 (0.033)	0.014 (0.022)	0.011 (0.021)
Other Race/Ethnicity	-0.052 (0.046)	-0.008 (0.041)	-0.005 (0.039)	0.009 (0.029)	-0.003 (0.029)
Middle School Student		-0.016 (0.023)	-0.020 (0.021)	-0.016 (0.023)	0.006 (0.025)
High School Student		-0.046* (0.027)	-0.045* (0.028)	-0.041 (0.028)	-0.048* (0.027)
Charter School Student		-0.106* (0.058)	-0.113** (0.055)	-0.112* (0.060)	-0.103 (0.066)
Private School Student		0.013 (0.043)	-0.034 (0.063)	-0.042 (0.080)	
Rural		-0.104*** (0.039)	-0.110*** (0.040)	-0.072** (0.032)	-0.054* (0.032)
Urban		0.007 (0.018)	0.009 (0.017)	0.012 (0.019)	0.021 (0.021)
Remote Option Available			-0.087*** (0.019)	-0.097*** (0.019)	-0.109*** (0.019)
Trump Voter				0.056** (0.028)	0.057 (0.038)
Public Health Trust Factor				0.003 (0.015)	0.005 (0.017)
Trust in Fox News				0.023 (0.018)	0.031 (0.020)
National Media Trust Factor				0.016 (0.015)	0.011 (0.021)
COVID-19 Comorbidity Risk					-0.002 (0.028)
Fully Vaccinated					0.037 (0.026)
Household Vaccine Eligible					-0.019 (0.037)
Incidence Rate					-0.186 (0.859)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.031	0.202	0.250	0.357	0.421

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table D2. Factors Predictive of Remote Learning – Average Marginal Effects (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1075	N=1074	N=773	N=679
Black	0.032 (0.020)	0.003 (0.013)	0.007 (0.013)	-0.004 (0.011)	-0.007 (0.015)
Hispanic	0.016 (0.015)	0.007 (0.019)	0.009 (0.019)	0.015 (0.019)	0.010 (0.018)
Other Race/Ethnicity	0.049 (0.033)	0.019 (0.029)	0.017 (0.029)	0.024 (0.027)	0.029 (0.027)
Middle School Student		-0.000 (0.014)	0.002 (0.012)	0.008 (0.012)	0.005 (0.018)
High School Student		0.000 (0.012)	-0.003 (0.011)	0.007 (0.014)	0.006 (0.015)
Charter School Student		0.115** (0.055)	0.116** (0.054)	0.126** (0.057)	0.119** (0.057)
Private School Student		-0.022*** (0.006)	-0.020*** (0.007)	-0.027*** (0.006)	
Rural		0.008 (0.019)	0.009 (0.017)	0.007 (0.016)	0.007 (0.015)
Urban		-0.000 (0.011)	0.002 (0.011)	0.005 (0.011)	0.005 (0.013)
Remote Option Available			0.031*** (0.010)	0.040*** (0.010)	0.046*** (0.011)
Trump Voter				-0.028*** (0.010)	-0.028** (0.011)
Public Health Trust Factor				-0.015* (0.009)	-0.015 (0.009)
Trust in Fox News				0.003 (0.007)	0.004 (0.008)
National Media Trust Factor				0.012* (0.007)	0.013* (0.007)
COVID-19 Comorbidity Risk					0.002 (0.013)
Fully Vaccinated					0.021 (0.014)
Household Vaccine Eligible					-0.005 (0.016)
Incidence Rate					-0.321 (0.453)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.031	0.202	0.250	0.357	0.421

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table D3. Factors Predictive of Hybrid Learning – Average Marginal Effects (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1075	N=1074	N=773	N=679
Black	0.053 (0.032)	0.064* (0.037)	0.077* (0.039)	0.103 (0.063)	0.142** (0.062)
Hispanic	-0.022 (0.017)	-0.014 (0.025)	-0.012 (0.028)	-0.030*** (0.011)	-0.021* (0.011)
Other Race/Ethnicity	0.003 (0.034)	-0.011 (0.030)	-0.012 (0.027)	-0.033*** (0.010)	-0.026*** (0.010)
Middle School Student		0.016 (0.019)	0.019 (0.018)	0.008 (0.020)	-0.011 (0.017)
High School Student		0.046* (0.024)	0.048* (0.025)	0.034 (0.024)	0.042* (0.022)
Charter School Student		-0.009 (0.029)	-0.003 (0.031)	-0.014 (0.029)	-0.016 (0.039)
Private School Student		0.009 (0.043)	0.054 (0.063)	0.069 (0.080)	
Rural		0.097*** (0.035)	0.101*** (0.038)	0.065** (0.029)	0.047* (0.028)
Urban		-0.007 (0.015)	-0.010 (0.013)	-0.018 (0.015)	-0.026 (0.017)
Remote Option Available			0.055*** (0.016)	0.057*** (0.017)	0.063*** (0.015)
Trump Voter				-0.028 (0.026)	-0.029 (0.036)
Public Health Trust Factor				0.011 (0.013)	0.010 (0.015)
Trust in Fox News				-0.025 (0.017)	-0.035* (0.018)
National Media Trust Factor				-0.028** (0.013)	-0.024 (0.020)
COVID-19 Comorbidity Risk					0.000 (0.026)
Fully Vaccinated					-0.057*** (0.022)
Household Vaccine Eligible					0.023 (0.034)
Incidence Rate					0.507 (0.748)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.031	0.202	0.250	0.357	0.421

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table D4. Factors Predictive of In-Person Learning – Average Marginal Effects (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1420	N=1035	N=1032	N=745	N=661
Black	-0.064* (0.038)	-0.057 (0.046)	-0.066 (0.048)	-0.070 (0.075)	-0.095 (0.079)
Hispanic	-0.006 (0.026)	-0.005 (0.040)	-0.002 (0.035)	0.034 (0.035)	0.001 (0.037)
Other Race/Ethnicity	0.034* (0.020)	0.020 (0.025)	0.019 (0.027)	0.006 (0.039)	-0.001 (0.030)
Middle School Student		-0.053* (0.028)	-0.052* (0.027)	-0.062* (0.033)	-0.049** (0.023)
High School Student		-0.047* (0.027)	-0.044 (0.027)	-0.030 (0.028)	-0.062* (0.033)
Charter School Student		0.024 (0.029)	0.007 (0.035)	-0.044 (0.049)	-0.043 (0.049)
Private School Student		0.010 (0.045)	-0.025 (0.065)	-0.050 (0.084)	
Rural		-0.024 (0.033)	-0.023 (0.031)	0.001 (0.030)	0.025 (0.023)
Urban		0.033 (0.025)	0.033 (0.025)	0.003 (0.033)	0.002 (0.033)
Remote Option Available			-0.086*** (0.021)	-0.094*** (0.024)	-0.096*** (0.021)
Trump Voter				0.052* (0.029)	0.071** (0.033)
Public Health Trust Factor				0.010 (0.018)	0.002 (0.016)
Trust in Fox News				0.004 (0.024)	0.006 (0.023)
National Media Trust Factor				-0.018 (0.012)	-0.017 (0.011)
COVID-19 Comorbidity Risk					0.017 (0.027)
Fully Vaccinated					0.105** (0.050)
Household Vaccine Eligible					-0.037 (0.030)
Incidence Rate					-2.762*** (0.878)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.017	0.119	0.172	0.222	0.352

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table D5. Factors Predictive of Remote Learning – Average Marginal Effects (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1420	N=1035	N=1032	N=745	N=661
Black	0.019 (0.018)	0.002 (0.012)	0.003 (0.013)	-0.018** (0.009)	-0.017* (0.010)
Hispanic	0.011 (0.010)	-0.003 (0.012)	-0.002 (0.010)	-0.018** (0.008)	-0.021** (0.009)
Other Race/Ethnicity	0.011 (0.015)	0.007 (0.019)	0.007 (0.020)	0.035 (0.031)	0.019 (0.023)
Middle School Student		-0.000 (0.008)	-0.000 (0.008)	0.004 (0.010)	0.002 (0.010)
High School Student		0.013 (0.013)	0.010 (0.012)	0.008 (0.009)	0.005 (0.010)
Charter School Student		0.005 (0.014)	0.007 (0.019)	0.036 (0.033)	0.042 (0.034)
Private School Student		-0.014*** (0.004)	-0.014*** (0.004)	-0.016*** (0.004)	
Rural		-0.024*** (0.009)	-0.023*** (0.009)	-0.014*** (0.005)	-0.017*** (0.006)
Urban		-0.015 (0.012)	-0.013 (0.012)	0.006 (0.012)	-0.002 (0.007)
Remote Option Available			0.021*** (0.006)	0.026*** (0.009)	0.026*** (0.008)
Trump Voter				-0.009 (0.007)	-0.013 (0.009)
Public Health Trust Factor				-0.009* (0.005)	-0.012** (0.005)
Trust in Fox News				-0.002 (0.006)	0.004 (0.008)
National Media Trust Factor				0.014*** (0.005)	0.015*** (0.005)
COVID-19 Comorbidity Risk					-0.014 (0.010)
Fully Vaccinated					0.015** (0.007)
Household Vaccine Eligible					0.011* (0.007)
Incidence Rate					0.547* (0.326)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.017	0.119	0.172	0.222	0.352

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table D6. Factors Predictive of Hybrid Learning – Average Marginal Effects (Winter 2022)

	(A)	(B)	(C)	(D)	(E)
	N=1420	N=1035	N=1032	N=745	N=661
Black	0.045 (0.034)	0.055 (0.044)	0.063 (0.047)	0.088 (0.075)	0.112 (0.079)
Hispanic	-0.005 (0.024)	0.008 (0.038)	0.004 (0.034)	-0.016 (0.035)	0.020 (0.036)
Other Race/Ethnicity	-0.045*** (0.013)	-0.027 (0.018)	-0.026 (0.019)	-0.041* (0.023)	-0.018 (0.019)
Middle School Student		0.053** (0.027)	0.052** (0.025)	0.057* (0.031)	0.047** (0.021)
High School Student		0.034 (0.024)	0.034 (0.024)	0.022 (0.026)	0.057* (0.032)
Charter School Student		-0.029 (0.025)	-0.014 (0.030)	0.007 (0.041)	0.001 (0.045)
Private School Student		0.004 (0.045)	0.039 (0.065)	0.066 (0.084)	
Rural		0.048 (0.031)	0.046 (0.030)	0.013 (0.029)	-0.008 (0.023)
Urban		-0.018 (0.022)	-0.020 (0.023)	-0.009 (0.032)	-0.000 (0.033)
Remote Option Available			0.065*** (0.020)	0.067*** (0.023)	0.070*** (0.019)
Trump Voter				-0.044 (0.029)	-0.058* (0.033)
Public Health Trust Factor				-0.001 (0.017)	0.011 (0.015)
Trust in Fox News				-0.002 (0.024)	-0.010 (0.022)
National Media Trust Factor				0.004 (0.010)	0.002 (0.009)
COVID-19 Comorbidity Risk					-0.003 (0.025)
Fully Vaccinated					-0.120** (0.050)
Household Vaccine Eligible					0.026 (0.030)
Incidence Rate					2.215*** (0.819)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.017	0.119	0.172	0.222	0.352

Note: .01 - ***, .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Appendix E: Sensitivity of Racial and Ethnic Groups to Remote Availability

To explore the responsiveness of different racial and ethnic groups to the availability of remote learning options,¹⁹ we estimate a series of models in which indicator variables for each race and ethnic group are interacted with the indicator for remote learning availability for the fall and winter surveys. Due to issues related to the interpretation of interaction terms in non-linear (e.g., logit and probit) models (Ai & Norton, 2003), we use linear probability models estimated via ordinary least squares for these analyses. In appendix tables E.1 and E.2 each column corresponds to a column in Tables 5 and 6 and indicates how the relationship between race or ethnicity and remote availability changes with the inclusion of different covariates. For clarity, we report only coefficients of interest in this supplementary analysis, although estimates for other covariates are not qualitatively different than those reported in Table 4.²⁰

In our primary analysis, we found that modest to large estimated differences existed between Black and white and other race or ethnicity and white respondents across all model specifications, although these estimates were only marginally significant at the 90 percent confidence level for Black respondents and imprecisely estimated for other race or ethnicity respondents. However, with the inclusion of an interaction term, estimates for all race and ethnicity indicator variables in our fall 2022 analysis approach zero as coefficients are added. Instead, we now find large and sometimes significant point estimates for the interactions of both Black and remote learning availability. This indicates that Black respondents were most responsive to remote availability and, so, may have unmet preferences for different learning modalities. Conversely, in our winter 2022 analysis we find less evidence of heterogeneity in responsiveness to the availability of remote learning options.

Table E1. Interactions Between Race and Remote Learning Availability (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1075	N=1074	N=773	N=679
Black	-0.086** (0.037)	-0.079* (0.045)	0.013 (0.040)	0.000 (0.054)	-0.006 (0.052)
Hispanic	0.005 (0.022)	0.011 (0.030)	-0.028 (0.041)	0.013 (0.022)	-0.005 (0.025)
Other Race/Ethnicity	-0.053 (0.046)	-0.037 (0.043)	-0.003 (0.019)	-0.003 (0.025)	-0.005 (0.028)
Remote Option Available			-0.062*** (0.020)	-0.064*** (0.022)	-0.059** (0.023)
Black X Remote			-0.163** (0.077)	-0.119 (0.089)	-0.132 (0.090)
Hispanic X Remote			0.060 (0.049)	-0.002 (0.052)	0.004 (0.060)
Oth. Race/Eth. X Remote			-0.052 (0.071)	-0.061 (0.079)	-0.082 (0.096)
Demographic Controls	No	Yes	Yes	Yes	Yes
Adjusted R ²	0.014	0.090	0.124	0.114	0.120

Note: .01 - ***; .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table E2. Interactions Between Race and Remote Learning Availability (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1420	N=1035	N=1032	N=745	N=661
Black	-0.072* (0.038)	-0.081 (0.053)	-0.047 (0.065)	-0.087 (0.103)	-0.110 (0.106)
Hispanic	-0.002 (0.025)	-0.002 (0.036)	0.016 (0.020)	0.026 (0.026)	0.002 (0.028)
Other Race/Ethnicity	0.032 (0.020)	0.012 (0.029)	-0.004 (0.021)	0.002 (0.029)	-0.006 (0.033)
Remote Option Available			-0.071*** (0.023)	-0.087*** (0.024)	-0.082*** (0.023)
Black X Remote			-0.067 (0.094)	-0.038 (0.128)	-0.052 (0.123)
Hispanic X Remote			-0.027 (0.045)	0.013 (0.057)	0.002 (0.058)
Oth. Race/Eth. X Remote			0.016 (0.063)	0.038 (0.079)	0.004 (0.094)
Demographic Controls	No	Yes	Yes	Yes	Yes
Adjusted R ²	0.008	0.033	0.056	0.065	0.101

Note: .01 - ***; .05 - **, .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Appendix F: Summary Statistics and Results with Hispanic or Latino Disaggregated

In social science research, it is common to report results for Hispanic and Latin American groups aggregated into a single category. However, this aggregation may hide substantial variation between groups with different countries of origin or lived experiences. The Understanding America Study (UAS) asks Hispanic respondents if they identify as one of several subgroups (Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish). In this appendix, we present our analysis described in the analytic strategy section with these Hispanic or Latin American groups disaggregated into three subgroups based on respondents' self-reported membership in various Hispanic groups. Due to sample size constraints, we combine Puerto Rican, Cuban, and other Spanish respondents into a single other Hispanic or Spanish group. Additionally, while we combine "Asian" and "Other Race/Ethnicity" in our main results due to cell size concerns, we separate these groups in the following analysis. Descriptive statistics and results for this alternative specification can be found below.

Table F1. Summer 2021 Sample Characteristics.

	All	White	Black	Mexican	Central/SA	Other Hisp.	Asian	Other
	N=1225	N=709	N=134	N=195	N=39	N=29	N=96	N=23
<i>Student Characteristics</i>								
Elementary Student	0.456	0.473	0.390	0.463	0.748	0.449	0.561	0.384
Middle School Student	0.324	0.322	0.358	0.229	0.232	0.349	0.208	0.358
High School Student	0.220	0.205	0.252	0.308	0.020	0.202	0.231	0.257
<i>Urbanicity</i>								
Rural	0.221	0.280	0.208	0.070	0.069	0.117	0.248	0.000
Suburban/Mixed	0.520	0.562	0.419	0.506	0.851	0.549	0.350	0.251
Urban	0.259	0.158	0.373	0.425	0.080	0.334	0.402	0.749
<i>Political Leanings</i>								
Trump Voter	0.398	0.568	0.040	0.224	0.512	0.236	0.444	0.198
Biden Voter	0.602	0.432	0.960	0.776	0.488	0.764	0.556	0.802
<i>Institutional Trust</i>								
Public Health Trust	0.013	-0.116	0.030	0.318	-0.221	0.124	0.058	0.602
Fox News Trust	1.563	1.472	1.741	1.582	1.480	1.580	1.844	1.684
National Media Trust	0.043	-0.168	0.351	0.522	-0.328	0.085	0.431	0.369
<i>COVID-19 Risk</i>								
COVID-19 Incidence Rate	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.002
COVID-19 Comorbidity	0.443	0.456	0.518	0.298	0.486	0.426	0.173	0.445
Fully Vaccinated	0.455	0.446	0.390	0.594	0.250	0.464	0.402	0.639
Household Vaccine Eligible	0.347	0.302	0.427	0.567	0.135	0.332	0.286	0.424
Plans on In-Person Learning	0.845	0.888	0.726	0.837	0.832	0.879	0.707	0.789

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table F2. Fall 2021 Sample Characteristics.

	All	White	Black	Mexican	Central/SA	Other Hisp.	Asian	Other
	N=1458	N=877	N=143	N=241	N=41	N=33	N=101	N=22
<i>Student Characteristics</i>								
Elementary Student	0.386	0.412	0.401	0.379	0.368	0.335	0.514	0.166
Middle School Student	0.319	0.314	0.287	0.228	0.504	0.366	0.131	0.494
High School Student	0.295	0.274	0.312	0.393	0.128	0.299	0.355	0.340
Attends Charter School	0.056	0.040	0.056	0.086	0.000	0.067	0.109	0.152
Attends Private School	0.066	0.078	0.019	0.067	0.081	0.050	0.124	0.109
<i>Urbanicity</i>								
Rural	0.201	0.238	0.243	0.031	0.201	0.084	0.180	0.175
Suburban/Mixed	0.518	0.573	0.399	0.537	0.684	0.523	0.226	0.197
Urban	0.281	0.189	0.358	0.433	0.115	0.393	0.594	0.629
<i>Political Leanings</i>								
Trump Voter	0.386	0.540	0.092	0.148	0.239	0.246	0.422	0.168
Biden Voter	0.614	0.460	0.908	0.852	0.761	0.754	0.578	0.832
<i>Institutional Trust</i>								
Public Health Trust	0.049	-0.032	-0.011	0.387	-0.308	0.033	-0.159	0.744
Fox News Trust	1.567	1.502	1.724	1.569	1.932	1.523	2.050	1.633
National Media Trust	0.075	-0.120	0.437	0.483	0.229	0.073	0.431	0.388
<i>COVID-19 Risk</i>								
COVID-19 Incidence Rate	0.030	0.030	0.037	0.029	0.032	0.027	0.031	0.024
COVID-19 Comorbidity	0.429	0.444	0.523	0.341	0.302	0.391	0.132	0.362
Fully Vaccinated	0.572	0.574	0.448	0.647	0.504	0.602	0.595	0.749
Household Vaccine Eligible	0.366	0.298	0.493	0.536	0.315	0.407	0.272	0.441
Remote Option Available	0.606	0.614	0.633	0.586	0.598	0.615	0.603	0.434
Attending In-Person	0.927	0.942	0.857	0.902	0.762	0.990	0.880	0.831

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table F3. Winter 2022 Sample Characteristics.

	All	White	Black	Mexican	Central/SA	Other Hisp.	Asian	Other
	N=1419	N=866	N=134	N=238	N=30	N=31	N=98	N=22
<i>Student Characteristics</i>								
Elementary Student	0.394	0.411	0.339	0.396	0.421	0.412	0.477	0.254
Middle School Student	0.307	0.324	0.275	0.207	0.372	0.277	0.114	0.499
High School Student	0.299	0.265	0.386	0.397	0.207	0.311	0.408	0.248
Attends Charter School	0.050	0.036	0.040	0.073	0.000	0.057	0.138	0.145
Attends Private School	0.066	0.073	0.036	0.058	0.081	0.052	0.119	0.091
<i>Urbanicity</i>								
Rural	0.212	0.255	0.223	0.067	0.179	0.106	0.184	0.175
Suburban/Mixed	0.504	0.557	0.417	0.535	0.805	0.473	0.229	0.175
Urban	0.285	0.187	0.360	0.398	0.015	0.421	0.587	0.651
<i>Political Leanings</i>								
Trump Voter	0.397	0.544	0.063	0.167	0.246	0.253	0.645	0.238
Biden Voter	0.603	0.456	0.937	0.833	0.754	0.747	0.355	0.762
<i>Institutional Trust</i>								
Public Health Trust	0.026	-0.058	-0.066	0.355	-0.516	0-031	0.075	0.844
Fox News Trust	1.536	1.492	1.736	1.563	1.708	1.419	1.954	1.515
National Media Trust	0.038	-0.138	0.418	0.447	0.007	0-058	0.638	0.312
<i>COVID-19 Risk</i>								
COVID-19 Incidence Rate	0.098	0.100	0.093	0.098	0.100	0.096	0.099	0.103
COVID-19 Comorbidity	0.422	0.438	0.486	0.329	0.414	.406	0.109	0.395
Fully Vaccinated	0.673	0.634	0.591	0.830	0.430	0.750	0.737	0.883
Household Vaccine Eligible	0.789	0.764	0.846	0.886	0.911	0.783	0.847	0.775
Remote Option Available	0.585	0.581	0.577	0.425	0.868	0.604	0.640	0.697
Attending In-Person	0.921	0.929	0.866	0.980	0.810	0.956	0.895	0.831

Sampling weights used. Sample restricted to respondent in households with school-aged children enrolled in a public, private, or charter school.

Table F4. Factors Associated with Preference for In-Person Learning (Summer 2021).

	(A)	(B)	(C)	(D)
	N=1225	N=982	N=939	N=897
Black	-0.151*** (0.048)	-0.089* (0.053)	-0.060 (0.054)	-0.058 (0.052)
Mexican	-0.047 (0.058)	0.001 (0.054)	0.037 (0.048)	0.045 (0.044)
Central/South American	-0.054 (0.111)	-0.011 (0.102)	-0.008 (0.105)	0.032 (0.077)
Other Hispanic/Spanish	-0.007 (0.037)	-0.012 (0.044)	0.005 (0.043)	-0.017 (0.046)
Asian	-0.179 (0.120)	-0.271* (0.139)	-0.226* (0.119)	-0.236** (0.115)
Other Race/Ethnicity	-0.096 (0.090)	-0.088 (0.106)	-0.102 (0.106)	-0.112 (0.100)
Middle School Student		0.006 (0.039)	0.011 (0.038)	0.014 (0.044)
High School Student		0.010 (0.035)	0.007 (0.035)	-0.011 (0.036)
Rural		0.006 (0.042)	0.008 (0.042)	0.032 (0.041)
Urban		-0.027 (0.035)	-0.033 (0.036)	-0.007 (0.038)
Trump Voter			0.005 (0.038)	0.008 (0.037)
Public Health Trust Factor			0.059** (0.026)	0.060** (0.027)
Trust in Fox News			0.007 (0.023)	0.003 (0.024)
National Media Trust Factor			-0.084*** (0.024)	-0.087*** (0.026)
COVID-19 Comorbidity Risk				-0.020 (0.031)
Fully Vaccinated				0.052 (0.040)
Household Vaccine Eligible				-0.048 (0.042)
Incidence Rate				-1.382 (3.169)
Demographic Controls	No	Yes	Yes	Yes
Pseudo R ²	0.031	0.109	0.141	0.154

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table F5. Factors Associated with In-Person Learning (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=1073	N=1072	N=774	N=679
Black	-0.086** (0.037)	-0.056 (0.036)	-0.073* (0.039)	-0.076 (0.053)	-0.105* (0.054)
Mexican	-0.041 (0.048)	-0.005 (0.046)	-0.001 (0.042)	-0.024 (0.043)	-0.025 (0.042)
Central/South American	-0.111 (0.137)	-0.084 (0.110)	-0.083 (0.110)	-0.133 (0.140)	-0.207 (0.187)
Other Hispanic/Spanish	0.047*** (0.012)	0.053*** (0.014)	0.050*** (0.014)	0.046*** (0.015)	0.043*** (0.015)
Asian	-0.063 (0.096)	-0.127 (0.121)	-0.076 (0.091)	-0.113 (0.099)	-0.205 (0.130)
Other Race/Ethnicity	-0.112 (0.078)	-0.085 (0.099)	-0.157 (0.115)	-0.068 (0.094)	-0.118 (0.130)
Middle School Student		-0.017 (0.023)	-0.018 (0.022)	-0.008 (0.021)	0.018 (0.026)
High School Student		-0.051** (0.026)	-0.046* (0.025)	-0.049* (0.029)	-0.053 (0.033)
Charter School Student		-0.126* (0.069)	-0.137** (0.062)	-0.148** (0.070)	-0.117 (0.073)
Private School Student		0.037 (0.036)	-0.004 (0.059)	-0.022 (0.074)	
Rural		-0.094*** (0.032)	-0.105*** (0.032)	-0.091** (0.037)	-0.085** (0.035)
Urban		0.004 (0.020)	0.007 (0.018)	0.010 (0.021)	0.010 (0.025)
Remote Option Available			-0.089*** (0.017)	-0.093*** (0.019)	-0.096*** (0.019)
Trump Voter				0.049* (0.027)	0.050 (0.033)
Public Health Trust Factor				-0.003 (0.017)	-0.008 (0.018)
Trust in Fox News				0.030 (0.019)	0.041** (0.021)
National Media Trust Factor				0.016 (0.017)	0.018 (0.018)
COVID-19 Comorbidity Risk					-0.007 (0.026)
Fully Vaccinated					0.057** (0.025)
Household Vaccine Eligible					-0.037 (0.037)
Incidence Rate					-0.559 (0.742)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.062	0.203	0.266	0.302	0.353

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Table F6. Factors Associated with In-Person Learning (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1419	N=1015	N=1012	N=728	N=646
Black	-0.073* (0.038)	-0.061 (0.045)	-0.069 (0.046)	-0.063 (0.062)	-0.096 (0.063)
Mexican	0.048*** (0.015)	0.036* (0.021)	0.032 (0.023)	0.052* (0.028)	0.025 (0.026)
Central/South American	-0.136 (0.148)	-0.092 (0.102)	-0.067 (0.090)	-0.083 (0.110)	-0.102 (0.122)
Other Hispanic/Spanish	0.025 (0.019)	0.024 (0.025)	0.024 (0.024)	0.053** (0.024)	0.029 (0.026)
Asian	-0.036 (0.099)				
Other Race/Ethnicity	-0.100 (0.081)	-0.192 (0.150)	-0.175 (0.118)	-0.131 (0.161)	-0.180 (0.159)
Middle School Student		-0.051* (0.028)	-0.051* (0.026)	-0.062** (0.031)	-0.046** (0.023)
High School Student		-0.037 (0.026)	-0.033 (0.027)	-0.028 (0.030)	-0.066* (0.034)
Charter School Student		0.024 (0.038)	-0.015 (0.045)	-0.082 (0.062)	-0.045 (0.059)
Private School Student		0.002 (0.051)	-0.033 (0.072)	-0.034 (0.086)	
Rural		-0.009 (0.028)	-0.008 (0.027)	0.004 (0.031)	0.025 (0.022)
Urban		0.041 (0.028)	0.039 (0.027)	0.012 (0.034)	-0.007 (0.035)
Remote Option Available			-0.088*** (0.020)	-0.088*** (0.022)	-0.092*** (0.021)
Trump Voter				0.051* (0.029)	0.067** (0.032)
Public Health Trust Factor				0.021 (0.015)	0.014 (0.016)
Trust in Fox News				-0.001 (0.021)	0.002 (0.022)
National Media Trust Factor				-0.025** (0.013)	-0.020* (0.012)
COVID-19 Comorbidity Risk					0.028 (0.027)
Fully Vaccinated					0.071* (0.041)
Household Vaccine Eligible					-0.040 (0.029)
Incidence Rate					-2.914*** (0.811)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.035	0.111	0.167	0.209	0.318

Note: .01 - ***, .05 - **, .1 - *, Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

Appendix G: Relationship Between Planning to Use and Actual Use of In-Person Learning

An additional question that may be of interest to policymakers and educational leaders is the relationship between intentions to use and actual use of in-person learning. In this supplemental analysis, we reproduce our results for Tables 5 and 6 with the inclusion of a binary indicator for intending to use in-person learning in the summer of 2021. As our data is a longitudinal panel survey with attrition between waves, any respondents from the fall or winter survey who did not respond to the summer survey are excluded in these analyses. Unfortunately, this does result in a reduction in sample size. Overall, our results in these supplemental analyses are quite similar to the main results in Tables 5 and 6.

Table G1 Factors Associated with In-Person Learning (Fall 2021).

	(A)	(B)	(C)	(D)	(E)
	N=1458	N=749	N=749	N=713	N=627
Black	-0.084** (0.037)	-0.035 (0.038)	-0.056 (0.045)	-0.063 (0.050)	-0.096* (0.057)
Hispanic	0.006 (0.022)	0.003 (0.036)	0.004 (0.033)	-0.001 (0.034)	-0.025 (0.041)
Other Race/Ethnicity	-0.046 (0.046)	-0.054 (0.047)	-0.054 (0.041)	-0.058 (0.046)	-0.079 (0.055)
Plans on In-Person		0.043 (0.027)	0.046 (0.030)	0.057** (0.027)	0.074** (0.029)
Middle School Student		-0.011 (0.026)	-0.012 (0.024)	-0.009 (0.023)	0.012 (0.025)
High School Student		-0.039 (0.026)	-0.045 (0.028)	-0.045 (0.029)	-0.045 (0.031)
Charter School Student		-0.188*** (0.072)	-0.193*** (0.068)	-0.158** (0.067)	-0.147** (0.068)
Private School Student		0.001 (0.061)	-0.036 (0.083)	-0.036 (0.084)	
Rural		-0.110*** (0.042)	-0.105** (0.042)	-0.129*** (0.045)	-0.141*** (0.050)
Urban		0.011 (0.020)	0.012 (0.020)	0.015 (0.018)	0.012 (0.020)
Remote Option Available			-0.080*** (0.019)	-0.088*** (0.019)	-0.096*** (0.019)
Trump Voter				0.065*** (0.024)	0.070** (0.029)
Public Health Trust Factor				-0.010 (0.016)	-0.012 (0.018)
Trust in Fox News				0.021 (0.019)	0.034 (0.021)
National Media Trust Factor				0.028* (0.015)	0.033* (0.017)
COVID-19 Comorbidity Risk					0.003 (0.024)
Fully Vaccinated					0.027 (0.026)
Household Vaccine Eligible					-0.016 (0.032)
Incidence Rate					-0.054 (0.707)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.025	0.215	0.276	0.321	0.361

Note: .01 - ***; .05 - **; .1 - *; Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.

In the fall, as compared with our main analysis, we find fewer signs of significant differences by grade level and more stability in estimated coefficients for charter school student, private school student, and rural respondents. Interestingly, the estimated association between the availability of remote learning and use of in-person learning is essentially unchanged. This may imply that exposure to remote learning as an option during the school year changed respondent's preferences for in-person learning. As would be expected, planning to use in-person learning was a predictor of reported use of in-person learning and was statistically significant at the 95 percent confidence level in specifications D and E with estimated average marginal effects of 5.7 and 7.4 percentage points, respectively. In the winter we find fewer differences between our main result and these alternative analyses. Planning to use in-person learning is no longer a predictor of reporting actual use of in-person learning.

Table G2. Factors Associated with In-Person Learning (Winter 2022).

	(A)	(B)	(C)	(D)	(E)
	N=1418	N=714	N=711	N=678	N=603
Black	-0.064* (0.038)	-0.128* (0.071)	-0.130* (0.072)	-0.073 (0.075)	-0.106 (0.079)
Hispanic	-0.001 (0.025)	0.023 (0.038)	0.025 (0.035)	0.036 (0.039)	-0.001 (0.043)
Other Race/Ethnicity	0.034* (0.020)	0.009 (0.036)	0.012 (0.038)	0.033 (0.038)	-0.007 (0.044)
Plans on In-Person		0.014 (0.038)	0.018 (0.035)	0.013 (0.034)	0.027 (0.040)
Middle School Student		-0.056 (0.035)	-0.055 (0.034)	-0.060* (0.034)	-0.049* (0.027)
High School Student		-0.039 (0.030)	-0.043 (0.031)	-0.038 (0.030)	-0.073** (0.036)
Charter School Student		0.025 (0.035)	-0.006 (0.045)	-0.025 (0.050)	-0.022 (0.055)
Private School Student		-0.021 (0.066)	-0.043 (0.078)	-0.049 (0.086)	
Rural		0.021 (0.029)	0.023 (0.028)	0.009 (0.031)	0.029 (0.025)
Urban		0.013 (0.036)	0.012 (0.038)	0.010 (0.036)	0.002 (0.040)
Remote Option Available			-0.092*** (0.026)	-0.090*** (0.025)	-0.099*** (0.023)
Trump Voter				0.050* (0.030)	0.071** (0.034)
Public Health Trust Factor				0.018 (0.021)	0.009 (0.020)
Trust in Fox News				0.009 (0.025)	0.013 (0.025)
National Media Trust Factor				-0.025** (0.012)	-0.022** (0.011)
COVID-19 Comorbidity Risk					0.014 (0.028)
Fully Vaccinated					0.094* (0.053)
Household Vaccine Eligible					-0.048 (0.031)
Incidence Rate					-3.021*** (0.984)
Demographic Controls	No	Yes	Yes	Yes	Yes
Pseudo R ²	0.014	0.112	0.174	0.179	0.295

Note: .01 - ***, .05 - **, .1 - *, Sampling weights used. Demographic controls include respondent employment status, married or living with partner, household income, and respondents' education.