Students Attending School Remotely Suffer Socially, Emotionally, and Academically

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Author note

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Abstract

What is the social, emotional, and academic impact of attending school remotely rather than in person? We address this urgent policy issue using survey data collected from N = 6,576 high school students in a large, demographically diverse school district that allowed families to choose either format in fall 2020. Controlling for baseline measures of well-being collected one month before the onset of the COVID-19 pandemic, as well as student demographics and other administrative data from official school records, students who attended school remotely reported lower levels of social, emotional, and academic well-being (ES = 0.10, 0.08, and 0.07 standard deviations, respectively) than classmates who attended school in person—differences that were consistent across gender, race and ethnicity, and socioeconomic status subgroups but significantly wider for older compared to younger students.

Keywords: COVID-19, adolescents, lockdown, remote schooling, mental health

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How does attending school remotely influence the well-being of high school students? In early spring 2020, the COVID-19 pandemic forced almost every school district in the United States to disrupt regular instruction. As the pandemic continues, many districts continue to confront difficult policy decisions about whether and how to offer instruction in person or remotely.

The projected impact of these structural changes on objective measures of academic progress, such as standardized achievement tests, particularly for students from lower socioeconomic status households, is nothing short of catastrophic (Kuhfeld et al., 2020). However, very little is known about the impact of taking classes remotely (i.e., in physical isolation from teachers and peers) on the *subjective experience* of students—and in particular the quality of their social relationships, their positive and negative emotions, and aspects of academic engagement.

This issue is especially urgent in light of significant increases in anxiety and depression in recent years among U.S. adolescents even prior to the pandemic (Substance Abuse and Mental Health Services Administration, 2018). Moreover, between April and October 2020, mental health-related emergency room visits by 12- to 17-year-olds increased by 31% compared to this same period in 2019 (Leeb et al., 2020), likely due to increases in anxiety, compulsive internet use, and social isolation, as well as diminished access to school-based mental health services, all of which are likely to be exacerbated by remote learning (Singh et al., 2020).

In this investigation, we capitalized on longitudinal survey data collected in a large and demographically diverse school district about one month before the pandemic and again in fall 2020, when families in this district were offered the choice of remote versus in-person options.

Although this was not a random-assignment experiment, we were able to compare students who attended school remotely versus in person while controlling for pre-pandemic measures of well-being as well as a rich set of demographic and performance covariates from official school records.

The school district in which these data were collected was part of the Character Lab Research Network (CLRN), a national consortium of school partners committed to advancing scientific insights that help children thrive. The analytic sample included N = 6,576 students who completed the Character Lab Thriving Index (TI), a self-report questionnaire assessing various aspects of well-being and daily routines, via school-owned computers during class time at two time points: pre-pandemic data (Time 1) were collected between February 3 and February 21, 2020, and mid-pandemic (Time 2) data were collected between October 12 and 28, 2020. At Time 2, n = 4,202 attended school remotely while n = 2,374 students attended school in person. See Supporting Online Material for details.

We estimated ordinary least squares models that regressed the social, emotional, and academic well-being outcomes at Time 2 on the corresponding survey data collected at Time 1, as well as covariates including gender, race/ethnicity, grade level, free and reduced-price lunch status, English language learner status, special education status, overall grade point average, grade point average in core classes, home language, and school. To increase reliability, we aggregated individual survey items into composite scores assessing social, emotional, and academic well-being, respectively. See Supporting Online Material for details, including reliability statistics, item-level comparisons, models including interaction terms, details on nonresponse weights, and robustness tests.

As shown in **Figure 1**, the magnitude of the remote versus in-person thriving gap was ES = 0.10 ($p < .001$), 0.08 ($p < .001$), and 0.07 ($p < .05$) standard deviations for social, emotional, and academic well-being, respectively. In other words, students who attended school remotely experienced significantly lower levels of well-being whether indexed socially (e.g., feeling like they fit in, having positive relationships with adults in their school community), emotionally (e.g., feeling good about life overall, feeling relaxed and happy versus feeling sad), or academically (e.g., finding classes interesting and believing they could succeed in their classes). Differences in well-being were comparable across gender, race/ethnicity, and socioeconomic status.

The most consistent moderator of the thriving gap was age. Observed differences were driven primarily by students in grades 10 to 12; for ninth grade students, differences in well-being were smaller and failed to reach statistical significance.[1] The need to maintain intimate relationships with peers increases in late adolescence (Poulin & Chan, 2010), so perhaps older students are more vulnerable to social isolation. Alternatively, it may be that ninth grade students, because they have never experienced high school in person, are less prone to missing their classmates and teachers.

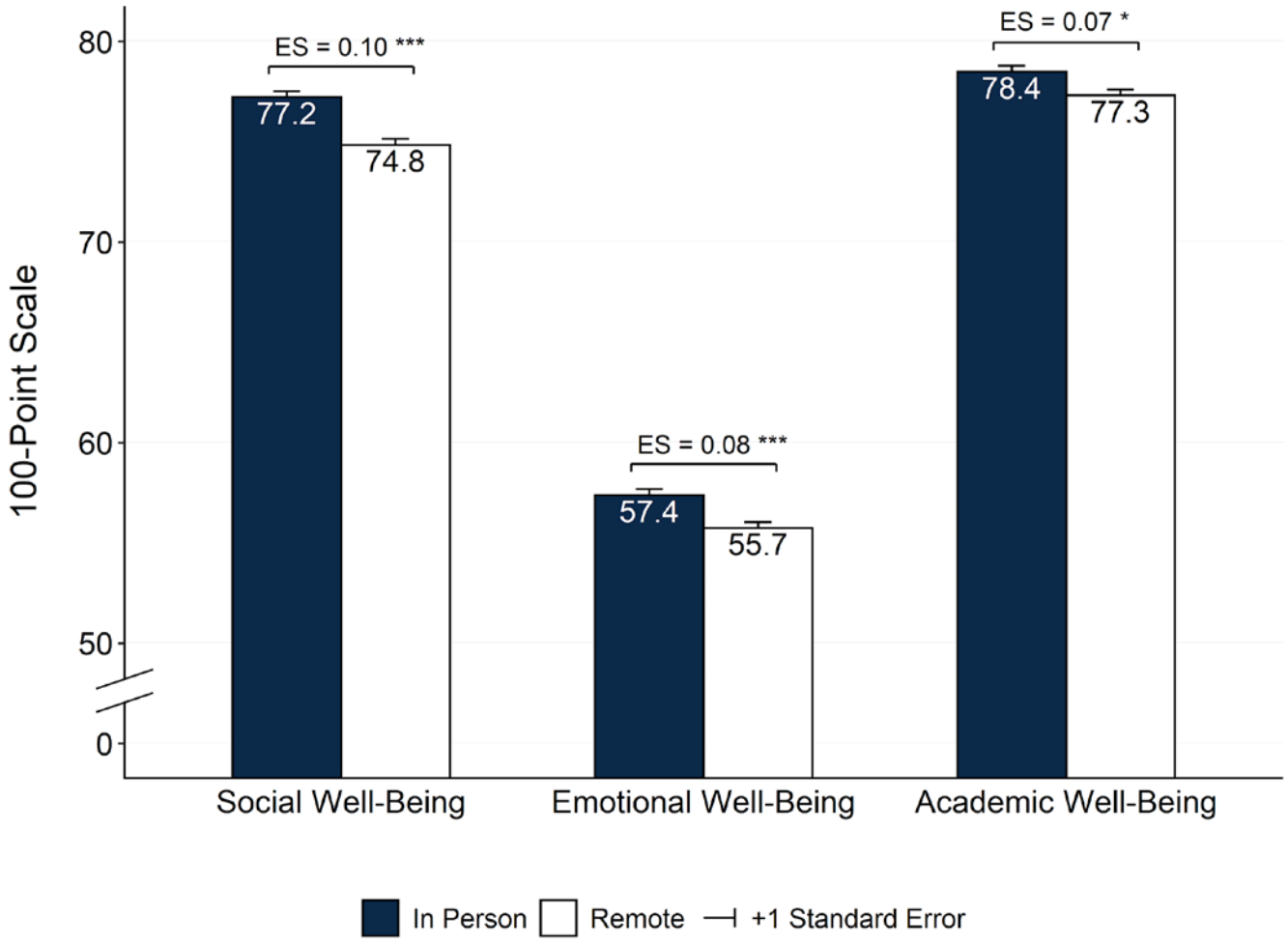
Because of the non-experimental nature of this investigation, the possibility of unobserved confounds distinguishing students whose families opted for remote schooling, and the brief and limited nature of our measures of well-being, it is difficult to estimate the true magnitude of the thriving gap. Future research should include more detailed and thorough measures of students' mental health, including self-reports of specific symptoms, parents' appraisals of their teenagers' well-being, and objective measures of psychological functioning.

[1] We combined grades 10 to 12 because the sample sizes are smaller for these grades and the estimated thriving gaps for these grades were not statistically significantly different from each other at the 5% level using a two-tailed test.

Assuming that the estimated differences are reasonable, however, our findings indicate that when students learn remotely rather than in person, they pay a substantial social, emotional, and academic toll.

Figure 1

Social, Emotional, and Academic Well-Being Is Higher for Students Attending School in Person Versus Remotely



Note. * two-tailed $p < .05$. ** two-tailed $p < .01$. *** two-tailed $p < .001$.

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