

# New study finds lower math scores in high schools that switched to 4-day school week

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A recent Oregon State University study analyzing the impact of a shorter school week for high schools found that 11th-grade students participating in a four-day week performed worse on standardized math

tests than students who remained on five-day schedules.

The effect was amplified among [students](#) in non-rural schools and was limited to math; no significant gap appeared in reading achievement across different school-week schedules.

K-12 schools nationwide are increasingly moving to a four-day week as a way to provide non-monetary incentives for teachers, adjust for students' extracurricular schedules or to cut district costs. As of the 2018-19 school year, 1,607 schools nationwide—1.2% of all K-12 schools—had shifted to a four-day week. The loss of instruction time due to COVID-related closures has prompted more to consider how the school week can best accommodate both students and teachers.

But the shift must be made thoughtfully to be effective, researchers say.

"These bigger cuts seem to be happening in non-rural areas that haven't thought through all the details of implementation—they may be moving to four-day school for short-term reasons, like cost savings," said Paul Thompson, lead author on the study and a professor in OSU'S College of Liberal Arts. "That's different from what we're seeing in rural areas, where it's really a lifestyle choice for these schools, and they've thought a lot about how they should structure their schedule."

Oregon has the fourth-highest number of schools on a four-day week in the country, with 137 schools across 80 districts opting for the shorter school week, or roughly 11% of the more than 1,200 K-12 schools in the state. The majority of these schools are in rural areas, particularly in Eastern Oregon.

Thompson's previous research has looked at the effects of the four-day week on elementary and middle school students as well as districts as a whole, but this is the first time he has focused solely on high school

students.

Using data on 341,390 high schoolers from 2005-2019, the current study found 11th-grade math achievement scores among four-day school week students to be slightly lower than the overall average. Furthermore, among only four-day students, those in non-rural areas performed slightly worse than those in rural areas. The study controlled for non-schedule factors that influence school achievement scores to more closely gauge the impact of the four-day week.

In high school, especially high school math, Thompson theorized that the more rigorous material means it's harder for parents to make up for lost classroom instruction time at home than it was in elementary or middle school.

"It's much easier to help with addition and subtraction than to help with algebra and calculus," he said.

In rural school districts that have moved to the four-day week, Thompson's research has found that schools are more likely to make the schedule switch to minimize absenteeism caused by students traveling for sports or other activities, rather than as a cost-saving measure. School days run a bit longer, from 7:45 or 8 a.m. to 4 p.m., and on the non-school weekday, schools are more likely to offer enrichment activities that help supplement lost instruction time.

Conversely, schools switching to a four-day week to save money don't typically extend the school day or offer enrichment on the non-school day because that does not result in cost savings or reduce teacher stress, so there is no mechanism to make up for lost instructional time.

"The school districts driving these achievement differences are the ones that have really low levels of instructional time," Thompson said. "That's

something schools have to reckon with in the pandemic, as well: How can we maintain instructional time in the absence of in-person learning?"

He hopes that some of the technology-driven flexibility that has come from the pandemic may be employed to boost instruction time in schools that move to four-day weeks without any enhanced enrichment opportunities.

"With technological advancements, asynchronous teaching could be a substitute for in-seat time. It may be an imperfect substitute, but it would be better than nothing else," he said.

The study also looked at absenteeism, often cited by schools as a reason to move to a four-day week. But the results show that chronic absenteeism rates actually increased in many four-day week schools, especially in non-rural districts. This is partly because the shortened school year means it takes fewer absences to meet the "chronic" baseline of 10% absenteeism, but also may be due to students using the non-school weekday for jobs or college courses that end up taking them away from regular [school](#) days, as well, the authors hypothesized.

**More information:** Paul N. Thompson et al, Impacts of the four-day school week on high school achievement and educational engagement, *Education Economics* (2021). [DOI: 10.1080/09645292.2021.2006610](https://doi.org/10.1080/09645292.2021.2006610)

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