



## Does Technology Investment Affect Student Achievement? Evidence from California's K-12 Technology Voucher Program

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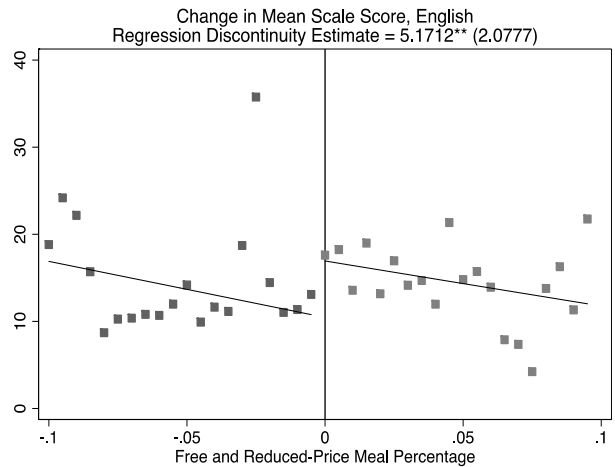
By the end of 2015, the US spent \$4.7 billion on instructional technology in K-12 schools, and while in office, President Obama called for nearly \$3 billion in commitments from the Federal Communications Commission and many private technology companies with an aim to “close the technology gap in our schools”. Many proponents of providing more technology to schools hope that additional access will help close some achievement gaps, while opponents argue that such improvements are overvalued because little evidence exists that technology improves teaching and learning.

Given the substantial spending on instructional technology and enhanced efforts by education officials in the US to integrate technology into K-12 public schools, more research on the casual effect of technology in schools on student achievement is needed. This study presents new evidence on the effect of technology in schools on student achievement using the California Education Technology K-12 Voucher Program. The voucher program provided eligible schools, in which at least 40% of students qualified for free or reduced-price meals, with general purpose and specific category software vouchers that were to be used to purchase qualifying hardware and software products.

### Key Findings:

- The technology voucher program had positive impacts on elementary and middle school mathematics and English student achievement, especially among low socio-economic students
- The positive impacts on student achievement are potentially driven by an increase in instructional time in computer education courses - an important mechanism through which technology can affect student achievement.
- Schools that did participate in the voucher program had significantly more computers per student and classrooms connected to the Internet at baseline than schools that did not participate, suggesting that participating schools may have been able to use the technology voucher more effectively

**Figure 1 – Change in English Performance**



### Implications for Policy

Technology has the potential to revolutionize the way students learn and the way teachers teach, but policymakers, teachers, and parents continue to debate its place in the classroom. The results of this study can be used to inform the ongoing debate between those who encourage educational technology in schools and those who argue there is not enough evidence to support the substantial spending on it.

This study suggests that technology investment can significantly improve elementary and middle school student achievement, especially among low socio-economic students. That said, the costs of such investments are likely lower than those associated with other interventions that produce comparable gains in student achievement, like reductions in class size. Moreover, the results of this study suggest that policymakers continue acknowledging technology investment as an effective intervention in closing some achievement gaps.

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