EDUCATION COMMISSION OF THE STATES
Your education policy team.

Response to information request

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Your Question:

You asked whether any states have conducted studies on the return-on-investment of digital learning.

Our Response:

While we were unable to locate any state-specific studies describing the return-on-investment of digital learning, we have gathered some research below that we hope is helpful to you. Several states have convened task forces, interim committees, and advisory councils to address digital and online learning issues; we have included a selection of final reports from those groups. If the information below spurs any further questions, please feel free to contact us.

State Task Force, Interim Committee, and Advisory Council Reports

- The Georgia Digital Learning Task Force was convened in 2012-2013 to examine the state of digital learning in Georgia and to develop recommendations. Find their final report here.
- The Texas Senate Committee on Education was charged with studying digital learning opportunities and examining existing barriers to the provision of digital education in 2016. Find their final report here.
- The Minnesota Online and Digital Learning Advisory Council (expiring in 2016) has released several reports on various issues related to digital learning. Find their final report here.

Digital Learning Research

A 2015 EdWeek article outlines the Seven Studies You Need to Know on blended learning. We have pulled the following summaries from that article:

- Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies, conducted by SRI International for the U.S. Department of Education in 2010. This is the granddaddy of blended learning studies and the one most commonly cited when it comes to such programs. This analysis looks at studies of blended learning from 1996 through 2006 and ultimately finds that students in blended learning classes outperformed those in fully online or fully in-person classes. However, most of the studies examined involve college students or adult professional students, not K-12 learners.
- Mean What You Say: Defining and Integrating Personalized, Blended and Competency Education, from the International Association for K-12 Online Learning, or iNACOL, in 2013. This study provides an overview of the literature on blended learning for the previous few years, looking at definitions of the term, models and strategies, tools for personalization, designs of blended learning systems, and standards for competency education.
- Blended Learning Report, from the Michael & Susan Dell Foundation, conducted by SRI International and released in 2014. The report looks at 13 low-income charter schools using a rotation model of blended learning. Researchers found consistency among how the schools implemented the model. The report examined teacher satisfaction, student productivity, and the use of data to inform instruction.
- Personalized Instruction: New Interest, Old Rhetoric, limited results and the need for a new direction for computer-mediated learning, from the National Education Policy Center, released in 2013. This critical look at various studies declares personalized instruction to yield modest educational improvements at best, and

in some cases none at all. It includes strategies for effective personalized learning and says a combination of tech-based and person-to-person instruction shows the greatest potential academic benefits.

- **Does an Algebra Course with Tutoring Software Improve Student Learning?** by the RAND Corp., funded by the U.S. Department of Education and released in 2013. Researchers looked at whether popular algebra blended-learning program Cognitive Tutor Algebra I improved math performance. The two-year study found no significant results in the first year, but in the second year high school students using the program **improved their performance by 8 percentile points**, which researchers equated to a doubling of the amount of math learning a student achieves during a year of high school.
- **Evaluation of the MIND Research Institute's Spatial-Temporal Math (ST Math) Program in California,** done by WestEd in 2014. The report looked at the game-based, blended learning math instruction program being used in California elementary schools and **concluded that it improved students' math scores significantly**—when fully implemented—on state tests, compared with students not using the program.
- **Supporting Student Success Through Time and Technology,** from the National Center on Time & Learning, released in earlier this year. This guide for educators and districts **highlights six schools pairing blended learning and extended learning**, meaning a longer school day for students. Case studies highlight the technology used in the schools, the instructional models in place, and the software that's been effective.

We have collected some additional studies for your review below:

Summary of Research on Online and Blended Learning Programs that Offer Differentiated Learning Options
(2017) *Regional Educational Laboratory-Central*
From Abstract: This report summarizes the methodology, measures, and findings of research on the influence on student achievement outcomes of K–12 online and blended face-to-face and online learning programs that offer differentiated learning options. The report also describes the characteristics of the learning programs.

State Digital Learning Exemplars: Highlights from States Leading Change through Policies and Funding
(2015) *State Educational Technology Directors Association*
From Abstract: States are striving to support the expansion of technology tools and resources in K-12 education through state policies, programs, and funding in order to provide digital learning opportunities for all students. This paper highlights examples of states with policies in support of five key areas: (1) innovative funding streams and policy; (2) digital content; (3) human capacity; (4) network infrastructure; and (5) data management and privacy.

A Better Blend: A Vision for Boosting Student Outcomes with Digital Learning
(2013) *Public Impact*
From Executive Summary: This brief explains how schools can use blended learning to encourage improvements in digital instruction, transform teaching into a highly paid, opportunity-rich career that extends the reach of excellent teachers to all students and teaching peers, and improve student learning at large scale.

Keeping Pace with K-12 Digital Learning: An Annual Review of Policy and Practice
(2014) *Evergreen Education Group*
From Abstract: The report provides an overview of the latest policies, practices, and trends affecting online learning programs across all 50 states. It summarizes the following two points (1) More students have access to more types of digital learning than ever before. Digital learning options are available to many students in a rapidly expanding range of forms, including online courses from multiple sources, dedicated schools built around aggressive digital instruction models, and many digital learning opportunities in traditional school settings; and (2) Wide gaps remain in the availability of digital learning. There are still vast differences among schools in the availability of technology, data communications capabilities, and digital content and tools.

Teaching in a Digital Age: How Educators Use Technology to Improve Student Learning

(2016) *Journal of Research on Technology in Education*
From Abstract: The purpose of our multisite case study was to document digital instructional strategies teachers use to enhance and transform student learning, and align that use with learning research. We conducted focus groups and interviews, and observed classrooms in seven exemplary schools across the United States. We surveyed teachers' familiarity, use, and comfort with technology as well. We document six common strategies used across the seven sites and identify five roles that technology plays in enhancing teaching and learning, and discuss how these strategies benefit teachers and learners.