

## THE ROLE OF DIGITAL TECHNOLOGIES IN DEEPER LEARNING

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Students  
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JOBS FOR THE FUTURE



If the nation's schools are truly to prepare students for the 21st century and beyond, they will require a new technology infrastructure. This includes tools and instruction that invite students to collaborate, investigate, engage with complex ideas, and confront open-ended, real-world problems. Our current teaching and staffing model is becoming outdated and inefficient, and creates a disconnect between the way information is presented in school and the way that students engage with technology and media for learning during personal use. While it is possible to teach for deeper learning without digital technology, bringing this complex kind of instruction to scale across the country will be challenging without support from digital tools and media.

Policy can play a key role in helping to ensure that the developing field of digital tools and media strengthens and scales deeper learning instruction. Supportive policies can also help facilitate environments that support teachers in utilizing high-quality digital technology to integrate knowledge, personalize instruction, and promote collaborative learning.

Federal and State Policy Recommendations:

### 1. Stay Focused on Reducing Achievement Gaps

This paper highlights the need for effective digital learning tools and media that promote deeper learning instruction. While this is important for all students, the focus must

remain on closing achievement gaps that have persisted for decades.

- Federal and state policy across agencies and programs can include legislative and regulatory language to ensure that the closure of achievement gaps is a main focus of research and evaluations on digital tools and other federal and state education technology efforts.
- Federal and state K-12 policy can also spur the development and study of teaching and learning digital resources with Universal Design for Learning as core to their design. These multiple, flexible formats will reduce achievement gaps by enabling students to learn information, express themselves, and engage with content.

## 2. Build Professional Capacity to use Digital Tools

Digital tools are only as effective as teachers' and leaders' ability to leverage them to promote critical thinking, effective communication, and other deeper learning skills. Policies can help ensure that educators and school leaders are prepared to use technology skillfully before they reach a classroom and as technology continues to evolve throughout their careers.

- State funding for educator and leader preparation programs and for professional development can explicitly emphasize preparation in evidence-based or proven digital teaching platforms to encourage the use of tools with strong research behind them.
- Similarly, Title II of the Elementary and Secondary Education Act and the Higher Education Act can further emphasize the use of evidence-based teaching platforms through program requirements and specific allowable uses, and through the Title II technical assistance provided to states and districts.
- Federal and state policy can also encourage teacher residencies and other intensive in-classroom experiences for teachers and teacher candidates to include direct, guided experience with evidence-based digital tools for deeper learning
- The federal government can help ensure that national K-12 comprehensive centers—both regional and content centers—continue to ramp up their efforts to support

states, districts, and schools in selecting high-quality digital tools and preparing teachers to integrate those tools into learning.

## 3. Invest in Research and Development

The U.S. Department of Education's National Education Technology Plan (2010) identified some tools as particularly promising, such as the **digital teaching platforms** and **immersive authentic simulations** described in this paper. But more research is needed to develop and identify effective tools—particularly those that help close achievement gaps for low-income and underprepared students.

- Federal legislation and regulatory activity can help establish priorities that promote the invention of and further investigation into high-quality, evidence-based digital tools that are practical, scalable, and truly promote deeper learning skills (collaboration, investigation, engaging with complex ideas, and confronting open-ended, real-world problems).
  - » For example, federal agencies including the Department of Education, the Department of Labor, the National Science Foundation, and the White House Office of Science and Technology Policy can establish these research and development priorities in existing programs—such as the Department of Education's Investing in Innovation (i3) fund—or newly authorized innovation streams in K-12, Career and Technical Education, and Science and Technology laws.
  - » Such research and innovation priorities should emphasize closing achievement gaps as an outcome.
- The federal government and outside researchers can also continue to study the results of the Enhancing Education through Technology State Grants (EETT), and federal and state K-12 policy can encourage sustaining any gains and effective partnerships made through these grants. These grants aim to help states, districts, and schools expand access to technology and adopt research-based approaches to using technology for learning and improvement.
  - » While federal EETT grants ended in 2010, more could be learned from the work during the grant periods and continued thereafter (for example, from

states' program evaluations) and could inform future federal investments in education technology access and integration.

- › Public investments in longer term, high-quality research and development are important to ensure that digital tools have been iterated and vetted thoroughly so that they truly serve teachers and leaders well and promote deeper learning among all students.

#### **4. Invest in Expanded Broadband Access and Increased Bandwidth to Improve Equitable Access to Good Teaching and Learning and 21st-Century Tools/Media Regardless of a Student's Zip Code or Socioeconomic Background**

- › The Federal Communications Commission's December 2014 vote would increase E-Rate funding by \$1.5 billion per year, a strong step toward more equitable access across geographic and socioeconomic regions.

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