

Digital Reporter: Bradie Metheny

**RAPID EVOLUTION OF DIGITAL TECHNOLOGY IN EDUCATION
HAS BROUGHT ABOUT GREAT TEACHING AND LEARNING
OPPORTUNITIES . . . GREAT CHALLENGES**

The rapid evolution of digital education curriculum, the growth of 1-1 learning initiatives, and the wealth of educational tools available online, all create wonderful teaching opportunities for students and educators.

The digital education capability has brought about challenges from adopting and adapting new technology, and funding the expansion of digital services to both urban and rural schools and libraries.

The Federal Communications Commission (FCC) chairman, Tom Wheeler, in a recent address to the Ed Tech Summit told his audience that the FCC has taken on the challenge of modernizing the E-rate program.

He said, "The first step was taken in July when the commission approved the first major modification of E-rate (schools and libraries universal service) in 18 years. The rate has helped to ensure that almost every school and library in America has basic Internet connectivity. But in the 18 years since the rate was established, technology has changed, the needs of students and teachers has changed, and now, finally, E-rate has changed."

Wheeler said, "For the first time the commission set specific ambitious goals for the broadband capacity delivered to schools and libraries." He noted that the discussion has moved from one of "connectivity" to one of "capacity."

Second, he said, "We set a clear and certain course away from support for 20th century technologies, and we set an equally clear target of \$1 billion per year for Wi-Fi based in internal networks. Recognizing that we cannot afford to dither in making these technologies available to every student, every teacher, and every librarian, we acted with dispatch. We will begin to see the results in the next funding year, with expanded support for Wi-Fi, tens of millions of students and thousands of libraries."

Wheeler said, "The recent modernization necessarily placed an emphasis on Wi-Fi and a broadband width in schools and libraries, we know that we must still address the challenge of improving broadband infrastructure to the building for many schools and libraries particularly in rural America." He continued, "Shockingly, 75% of rural public schools today are unable to achieve high-speed connectivity goals that the FCC has set."

"So, we must tackle the rural fiber gap if we are to achieve our connectivity targets for all schools and libraries to have connectivity. The exploration whether more funding is necessary precisely to answer the question of how to meet the urban and rural needs equally and simultaneously," said Wheeler.

Wheeler's remarks were in keeping with the late September Office of Science and Technology Policy's (OSTP) release promoting open education to help teachers and students, not only in the United States, but, also, around the world in the New U.S. National Action Plan.

This was a major point in President Obama's speech before the United Nations at a meeting of the Open Government Partnership Around the Globe. Obama said, "An educated population is a global asset. Open education, which enables educators and students to freely and legally access, reuse, and adapt educational resources, is increasingly being used to help teachers and students in the United States and around the world."

The President said further that the United States is committed to open education and will:

- Raise open education awareness and identify new partnerships. The U.S. Department of State, U.S. Department of education and the OSTP will jointly host a workshop on challenges and opportunities in open education internationally with stakeholders from academia, industry, and government.
- Pilot new models for using open educational resources to support learning. The State Department will conduct three pilots overseas by December 2015 that use open educational resources (OER) to support learning in formal and informal learning contexts. The pilots' results, including best practices, will be made publicly available for interested educators. [In the United States and around the world.]
- Launched an online skills academy. The Department of Labor (DOL), with cooperation from the Department of Education, will award \$25 million through competitive grants to launch an online skills academy in 2015 that will offer open line courses of study, using technology to create high-quality, free, or low-cost pathways to degrees, certificates, and other employer-recognized credentials.

Building on the President's announcement about Open Government Partnerships, the White House later announced, further, that additional momentum of progress by federal agencies on open education had occurred including:

- Supporting the creation and curation of openly licensed content. The National Institutes of Health (NIH) anticipates spending \$10 million to fund open educational resources on BigData in Biomedicine.
- Creating platforms to facilitate use and sharing of open educational resources. The Department of Energy's National Training and Educational Resources (NTER) has created a portfolio of open-source, browser-based software tools that will be provided to any users free of charge. NTER will establish an open source governance community that will support continuous development and deployment of NTER, track and report deployment of NTER, and produce an analysis of the feasibility of a funding opportunity to transfer NTER to an open-source community outside of the federal government

The existing Second Open Government National Action Plan (SOGNAP) promotes open education and increase awareness and engagement.

Open education is the open sharing of digital learning materials, tools and practices that ensure free access to and legal adoption of learning resources. There is a growing body of evidence that the use of open education resources improves the quality of teaching and learning, including by accelerating student comprehension and by fostering more opportunities for affordable cross-border and cross-cultural educational experiences.

**TECHNOLOGY ALONE CANNOT CHANGE OUTCOME
OF STUDENTS AT RISK WITHOUT TEACHERS AND PLAN**

There has to be the right mix of teachers working with well selected technology in order to support at-risk student learning, according to a new report from the Alliance for Excellent Education (all4ed) and the Stanford Center for Opportunity Policy and Education (SCOPE).

"This report makes clear that districts must have a plan in place for how they would use technology before they make a purchase," said, Bob Wise, president of the Alliance for Excellent Education and former Governor of West Virginia.

Replacing teachers with technology is not a successful formula. The best gains in learning achievement occur by pairing technology with classroom teachers, who provide real-time support and encouragement to the underserved students, according to the report.

Wise said the report cautions that its recommendations must be accompanied by adequate professional learning opportunities for the teachers on how to use the technology and pedagogy's that are recommended, including technical assistance, to help educators manage the hardware, software, and connections to the internet.

"When given access to appropriate technology used in thoughtful ways, all students—regardless of their respective backgrounds—can make substantial gains in learning and technological readiness," said Linda Darling-Hammond, Stanford professor and SCOPE faculty director.

Darling-Hammond, Stanford professor Shelley Goldman, and doctoral student Molly B. Zieleski are the authors of the report. The report itself is based on a review of more than 70 recent research studies and provides concrete examples of classroom environment in which technology has made a positive difference in the learning outcome of students at risk of failing courses and dropping out.

Specifically the report identifies three important components to successfully use technology with at-risk students they include:

- Interactive learning.
- Use of technology to explore and create, rather than to "drill and kill;" and
- The right blends of teachers and technology.

Darling-Hammond and her co-writers caution in their report that its recommendations must be accompanied by adequate professional learning opportunities for teachers on how to use the technology and pedagogies that are recommended, including technical assistance to help educators manage the hardware, software, and connections to the Internet.

The writers also identify significant disparities in technology access and implementation between affluent and low-income schools. First, low-income teens and students of color are noticeably less likely to own computers and use the internet than their peers. Because of their students' lack of access, teachers in high poverty schools were more than twice as likely to say that their students' lack of access to technology was a challenge in their classrooms. More dramatically, only 3% of teachers in high poverty schools, said their students have the digital tools necessary to complete homework assignments, compared to 52% of teachers in more affluent schools.

Also pointed out in the report is that applications of technology in low-income schools typically involves computers taking over for teachers and presenting students with information they are expected to memorize before being tested with multiple-choice questions.

In more affluent schools, students tend to be immersed in more interactive environments in which material is customized based on students' learning needs and teachers supplement instructions with technology to explain concepts, coordinate student discussions, and stimulate high-level thinking.

The Alliance for Excellent Education and the Stanford Center for Opportunity Policy in Education make a number of recommendations in their report that could expand the use and positive impact of technology among at-risk high school youth. They include:

Technology access policies should aim for one-to-one computer access.

Technology access policies should ensure that speedy internet connections are available.

States, districts, and schools should favor technology designed to promote high levels of interactivity and engagement and make data available in multiple forms.

Curriculum and instruction plans should enable students to use technology to create content as well as learn material.

Policy makers and educators should plan for "blended" learning environments, characterized by significant levels of teacher support and opportunities for interaction among students as companions to technology use.

We welcome any comments, suggestions and/or criticism. E-mail me at B.metheny@comcast.net or phone me at 508.472.2529.