Broadband and Education: The Promises, the Challenges

This document is based on the webinar “Back-to-School with Broadband: How Internet Technology Is Transforming Education in America.” To view, visit www.internetinnovation.org/broadbandedu.

Broadband and next-generation, high-speed networks play a vital role in promoting and expanding access to education.

Supporting Education through Online and Blended Learning
Online and blended learning programs started 12-15 years ago and continue to grow at a fast pace around the country.

- Online learning (also known as e-learning): This learning experience utilizes rich digital content, delivered via a computer or other digital device and the Internet.
  - Students can take courses in a classroom setting, at home, or anywhere with high-speed Internet access (distance learning).
  - Broadband allows for new forms of individualized content and resources (digital resource repositories).
    - In the next 5-10 years, we will largely see the replacement of traditional textbooks by digital content.
  - High-speed Internet provides access to new, higher bandwidth online solutions (e.g., E-Rate upgrade).
- Blended learning: A combination of face-to-face and online learning (personalized for high student engagement)
  - E.g., Rotational Model
    - Virtual instruction: Each student has a laptop and accumulates real-time data through tasks completed online.
    - Teacher instruction: Trained professionals offer feedback and support for students based on data to extend learning and/or reteach, supplemented with discussion-based assessments.

Unlocking the Power of Data to Personalize Learning and Improve Decision-Making

- Broadband increases data availability and market transparency.
  - Electronic Education Records are able to be exchanged across schools and states, improving accountability and building understanding of how students and schools are performing.
  - More transparent commercial markets
- New online learning platforms are allowing for differentiated instruction styles and development to meet individual student needs.
- Broadband and high-speed, next-generation networks are enabling better communication between students, teachers and school administrators, as well as the management and monitoring of outcomes.
- Learning management systems house all online content and provide immediate access to educational content for students and student performance for teachers (critical students can be quickly identified).
- With online resources offered by schools, parents can monitor academic challenges being faced by their child and reach out to the teacher or administration for support.
Current Barriers to Taking Full Advantage of Broadband in Education

- Insufficient connectivity
  - Private sector investment to build and increase access to reliable and robust next-generation networks is critical to supporting and expanding educational opportunities.
  - School and classroom bandwidth demands for building out learning opportunities, resources, and management systems to rise dramatically over the next few years
  - Digital Divide: Reliable broadband access remains an issue across states and for many schools and districts across the country, particularly in rural areas.
  - 16% of public community college campuses have high speed broadband v. 91% of research universities

- Limitations on online learning systems and content
  - Regulations inhibit online learning.
    - Teachers often cannot teach across state lines.
    - Course accreditation is often based on “seat time” not outcomes, which limits opportunities to provide courses that make students college and career ready.
  - Lack of digital literacy skills among teachers and students

- Limited real-time data access and lack of transparency
  - Only 37% of teachers have electronic access to achievement data for their students.
  - Data integration is one of the most challenging problems facing schools.

How K-12 Education and Beyond Are Using Online Learning in the US (courtesy of iNACOL)

- 30 states have state virtual schools/initiatives
- 10 states have online learning initiatives
- 50 states have significant state policies
- 30 states and Washington, D.C. allow over 200 full-time virtual charter schools with over 250,000 students (CER 2010)
- 30% of all employers use e-learning for training; in 5 years, it will be 50%
- More than 70% of school districts in the United States offer online courses to students (QED, America’s Digital Schools, 2006)
- More universities are offering K-12 courses online
  - MIT open courseware for K-12 students
  - Stanford, Northwestern programs for gifted
- K-12 online learning enrollments growing 30% annually nationwide, with 50,000 in 2000 and over 2.5 million enrollments in 2010-2011

Investing in broadband – the invaluable backbone for expanded online learning opportunities for students and teachers – is crucial for improving the quality of education in America.

"Without sufficient broadband capacity and access, schools and students are out of luck.”
- David Teeter, director of policy, iNACOL

About The Internet Innovation Alliance (IIA)
The IIA is a broad-based coalition supporting broadband availability and access for all Americans including underserved and rural communities. It aims to ensure every American, regardless of race, income or geography, has access to this critical tool. The IIA seeks to promote public policies that leverage the power of entrepreneurs and the market to achieve universal broadband availability and adoption.