Fact Sheet

Common Core
Technology Considerations

November 2013 csba

As boards consider what portion of Common Core funding should be invested in technology, it is important to be strategic to ensure these investments support both the ability for students to take the Smarter Balanced Assessment Consortium (SBAC) assessments and local plans for digital learning. Two of the most important considerations are bandwidth capacity and Internet connection speed.

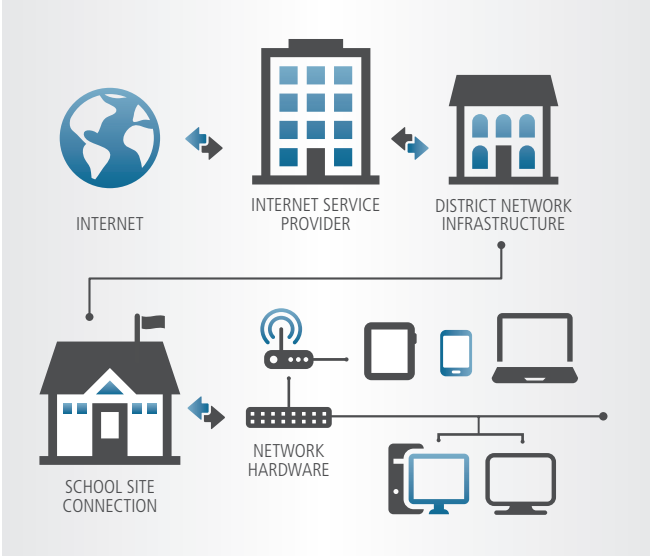
What are bandwidth and Internet connection speed and why are they important?

Bandwidth is the amount of information that can be accessed across the Internet connection. It is important because it regulates how many students can effectively access resources on the Internet at any given time.

Internet connection speed is how fast information can be retrieved and delivered across the Internet connection. It is important because it regulates how fast students can effectively use the bandwidth to access Internet resources.

Ensuring sufficient bandwidth and connection speed in classrooms requires both a robust Internet connection to the school door and a broad network (wired and wireless) inside the school to deliver that connectivity to each student's device. K-12 networks are complex and can suffer from a diverse set of bottlenecks that may prevent the successful use of digital learning and online assessment. Typical bottlenecks may include:

1. **Internet Service Provider (ISP)** – The district's ISP may not provide enough bandwidth or speed to meet local need.
2. **District Network Infrastructure**—The district's routers, firewalls, servers, and content filter may need upgrading.



3. **School site connection**—Connections from the school to the district office may need upgrading.
4. **Network hardware—**Network cabling or hardware at the school site may need upgrading.
5. **Wireless Access Points (WAPs)**—The number of WAPs may not be sufficient for the number of wireless devices. Take special care when examining WAPs as they introduce additional device connection limits and security needs.
6. **Device compatibility—**Computer hardware and processing components on both wired and wireless devices may not be able to make use of higher connection speeds and may need upgrading.

Connection Speed

Connection speed is how fast information can be retrieved across the Internet connection. It is important because it regulates how fast students can effectively use the bandwidth to access Internet resources.

Test your speed

To help plan for online assessment, SBAC has created a readiness calculator that estimates the number of days necessary to complete ELA and Math assessments based on four inputs:

1. Number of students being tested
2. Number of computers available
3. Computer hours available per day
4. Internet connection speed

The calculator is available at http://www3.cde.ca.gov/sbactechcalc

Access

A key concern for board members is equity – that all students have equitable access to technology for learning. Access is impacted by three variables: the number of computers, the location of those devices, and the schedule. The focus question for board may be: How many hours of access to technology do our students have?

Tech hours per student =

$$\frac{(\#\ \text{of devices}) \times (\#\ \text{of hours access})}{\#\ \text{of students}}$$

Boards will want to work with staff to determine the projected technology needs, the current state of local technology, the gap between projections and current status, and the best strategies to improve local technology capability over time.

Board Questions:

Student Access

- How are technology devices distributed?
- How much technology access do our students currently have?

Tech by the numbers

58% *of schools meet the minimum bandwidth requirements to administer the SBAC assessments.*

23% *of schools have sufficient bandwidth for digital learning.*

Source: Education Superhighway

Bandwidth

- How much bandwidth is currently available in each of our classrooms?
- What bottlenecks currently exist in our district and school networks? What upgrades are required to eliminate these bottlenecks?
- What is the gap between our available bandwidth and devices and what we need for digital learning and online assessments?

Technology Acquisition

- Are we using a competitive procurement process to purchase any necessary connectivity or equipment upgrades?
- What prices are other districts in our area paying for connectivity, network equipment, and devices? Have we explored the possibility of partnering with other districts or the county office of education to obtain lower prices with greater volume?
- Have we investigated the possibility of deploying our own fiber network to connect our schools to the district office in order to reduce our on-going network costs?
- What will be the increased cost of sustaining new technology and bandwidth?
- What is the projected replacement schedule for new technology?

Technology and Staffing

- Do we have the staff we need to design, implement, and monitor a mission critical network that will be needed to support digital learning?
- What training will be required for staff to support expanded technology use in the classroom?