Are California’s Schools Ready for Online Testing and Learning?

Niu Gao

This research was supported with funding from the Evelyn and Walter Haas, Jr. Fund
Online testing raises concerns about schools’ technology capacity

- Schools are implementing Common Core–aligned testing right now
- Concerns persist about school technology infrastructure, particularly bandwidth
- Virtually all schools will need technology upgrades to adopt and benefit from digital learning
Outline

- Assessing K–12 technology readiness
  - Are districts investing in technology upgrades?
  - Factors affecting district readiness
  - Preparing for digital learning
  - Policy implications
Comprehensive data on school technology is limited

- The state collects data that do not reflect readiness
- Our data is drawn from a 2014 Field Survey by the California Educational Technology Professionals Association (CETPA)
- As a data source, the survey has weaknesses and strengths
  - Weakness: 35% of districts responded
  - Strength: Designed by and for technology officers
Software and staffing are insufficient in many districts ...

- **Hardware**: 73% Sufficient, 27% Insufficient
- **Network**: 76% Sufficient, 24% Insufficient
- **Software**: 51% Sufficient, 49% Insufficient
- **Staffing**: 68% Sufficient, 32% Insufficient
... even in districts with sufficient resources in other areas

- Among districts with sufficient hardware, only 38% have sufficient staffing.
- All districts, regardless of their readiness in other domains, need to invest more in staffing.
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Funding has been limited so far

- District technology spending is low
- Onetime Common Core implementation funding was allocated in 2013–14
  - $1.3 billion
  - Could be used for instructional materials, teacher training, or technology upgrades
- Governor Brown’s 2014–15 budget included onetime funding for broadband ($27 million)
Few districts spent most or all of their Common Core funding on technology

% of CCSS funding spent on technology

- 0-25%
- 26-50%
- 51-75%
- 76-100%
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Technological readiness varies across districts

- Most district and student characteristics don’t seem to affect readiness
  - Composition of student body
  - Student performance level
  - District location
  - Neighborhood characteristics

- Two factors drive differences in readiness
  - District size
  - Overall district spending
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Most California schools are not ready for digital learning

- The Obama administration launched ConnectED, a digital learning initiative, in 2013
- The recommended minimum bandwidth for digital learning is 100 megabits per second (Mbs) per student
- In California, 39% of schools and 44% of districts are at speeds below 100 Mbs
Broadband upgrades cost more in extremely small and large districts

Relationship between district enrollment and bandwidth

- $< T_1$
- $[T_1, 10 \text{Mbs})$
- $[10, 100 \text{Mbs})$
- $[100 \text{Mbs}, 1 \text{Gbs})$
- $[1, 10 \text{Gbs})$
- $\geq 10 \text{Gbs}$
Rural districts face bandwidth challenges

<table>
<thead>
<tr>
<th>Area</th>
<th>Sufficient bandwidth (≥100 Mbs)</th>
<th>Insufficient bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>34</td>
<td>66</td>
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</tr>
<tr>
<td>City</td>
<td>18</td>
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</tbody>
</table>

Federal and state programs can help close gaps

- Newly expanded federal E-Rate program provides discounted Internet services
  - Based on student body composition and location
- California Teleconnect Fund can help rural districts
- Governor Brown’s Broadband Infrastructure Improvement Grant
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Targeted, ongoing support is key

- The state should streamline IT funding and programs to address specific needs
  - IT staffing is a challenge for most schools
  - Districts need funding to maintain and upgrade IT infrastructure
  - Districts also need technical assistance
  - Small, large, and rural schools face higher costs

- To identify needs, the state needs to collect more refined IT data
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Notes on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.