

Technology Gaps in DC Public Schools

COALITION ON DIGITAL EQUITY IN DC EDUCATION

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Coalition on Digital Equity in D.C. Education

- **Our goals are to address critical technology challenges quickly, together**
 - Highlight the scope, multi-faceted nature, and urgency of DCPS technology challenges
 - Persuade elected officials and agencies to take ownership of their share of challenges and solutions
 - Suggest practical approaches forward
- **We began in 2018 after realizing that school-by-school IT advocacy wasn't sufficient**
 - Participation and input from all 8 wards
 - Launched by DCPS parents, primarily from elementary and middle schools to start
 - Grassroots organization driven entirely by volunteer effort
- **Our advocacy has reached the highest levels of DC government**
 - Met with Deputy Mayor for Education Paul Kihn, DCPS, and multiple Councilmembers and their staff
 - Testified at DCPS budget hearing and DME/Chancellor confirmation hearings
 - Sent [letter](#) to Mayor Bowser co-signed by:
 - All active Ward education councils
 - Washington Teachers' Union
 - S.H.A.P.P.E.
 - Washington Lawyers' Committee for Civil Rights & Urban Affairs
 - EmpowerEd Teacher Council
 - Teaching for Change
 - Coolidge Alumni Association
 - Education Town Hall-We Act Radio
 - Educationdc.net

Key Findings

- **There is a massive disconnect between DCPS policy...**
 - DCPS has a heavy reliance on online curriculum and testing
 - Technology has become a major component of students' education
- **...and the technology tools needed to support it**
 - Many schools lack reliable access to technology
 - OCTO not meeting need for IT support, hardware availability and maintenance, and Wi-Fi/Internet access
- **Substantial analysis is needed to fully understand the gaps and solutions**
 - Gaps in existing services and implementation
 - Tradeoffs between cost, services, and level of support
 - Agency roles and mechanisms for accountability

The path forward requires DCPS and OCTO to work together closely with parents and teachers to make technology work for all schools.

Negative Impacts on Students

- Curriculum/intervention programs don't work like they should
 - Students are unable to get online for programs like iReady for the recommended amount of time per week due to lack of/unreliable computers
 - In blended learning classrooms, teachers spend time dealing with malfunctioning computers instead of being focused on small group instruction
 - Smartboard features go unused because the hardware breaks down
- Students who lack familiarity with computers
 - are unprepared for college and the workforce
 - at a disadvantage when taking computer-based tests like the PARCC

“In the past, we have had issues with computers slowing down, malfunctioning and working improperly; in return **this causes students to get frustrated and sometimes even shut down** in the middle of a test. When this happens our students are **misrepresented** and **we cannot get a clear picture of their actual academic needs.**”

– Ward 7 ES teacher

Gap: IT Support

Policy: OCTO provides services to ensure that DCPS schools “have the operational resources and infrastructure they need so that educators can focus on instruction”

- DCPS-OCTO MOU

Reality:

- OCTO technicians are often:
 - capable, dedicated, and willing to go the extra mile to help teachers.
- However, OCTO technicians:
 - often service multiple schools and have difficulty providing timely service
 - have no replacement parts or funds for hardware repairs. It is the school’s responsibility to purchase parts and pay for repairs by the manufacturer if a device is not under warranty.
 - will not service devices that are not official DCPS equipment. Laptops donated through Donorschoose.org are not serviced.
 - lack knowledge of educational needs and programming
- To fill the gap, some schools have asked school staff or parent volunteers (with no IT expertise) to help

Gap: IT Hardware and Maintenance

Policy: Minimum of 3:1 student-device ratio in online testing cohort, replaced every 4 years at minimum (School Budget Development Guide FY 2019).

During modernization, schools are outfitted with Smartboards and computers at a 3:1 ratio.

Reality:

- <3:1 ratio and <4-yr replacement rate have not been reliably implemented
 - Many schools lack funding for 3:1 ratio of students-to-reliable, working devices
 - SY17-18 DCPS inventory included devices that are 9-11 years old. New DCPS inventory is taking longer than expected due to lack of staff capacity at schools.
 - Newly modernized schools have reliable technology for a few years but then face the same challenges as other schools when computers and Smartboards start breaking
- Fewer, older devices make it harder for OCTO to support educators adequately

“Interviewees reported **limited amounts** of key technology resources (six of eight schools), and said that existing technology was **frequently unavailable** because it was **outdated** and or **poor quality** (seven of eight schools).”

– DC Auditor, Oct. 2017

Issue: IT Hardware Replacement

School budgets cannot keep up with tech refresh costs

Cleveland ES FY19 Budget

>50% at-risk; 14% special educ.

Budget Item	Cost
Afterschool Program	\$53K
Psychologists	\$52K
Social Workers	\$157K
Special Educ. Coordinator	\$51K
Supplies (Educ., Gen., Office)	\$25K
Technology	\$6K

At-Risk Budget
\$344k

~\$15K needed annually to replace student laptops*

Amidon-Bowen ES FY19 Budget

>70% at-risk; 23% special educ.

Budget Item	Cost
Afterschool Program	\$37K
Behavior Tech	\$93K
Dean of Students	\$99K
Instructional Aide	\$32K
Literacy Partners	\$10K
Manager of Special Education	\$107K
Reading Specialist/Teacher	\$105K
Social Workers	\$60K
Technology	\$5K

At-Risk Budget
\$548k

~\$17K needed annually to replace student laptops*

* Assumes 3:1 student-device ratio, replaced every 4 years, DCPS-approved vendor; excludes teacher laptops, smartboards, and other classroom tech

Issue: IT Hardware Purchasing Policies

- Schools seeking innovative ways of getting technology are hampered by strict OCTO/DCPS IT requirements on approved devices
- OCTO will only maintain and put software on a limited number of models
- DCPS-approved vendors charge high prices

LAPTOPS

LATITUDE 3380 NON-TOUCH	LATITUDE 3480 NON-TOUCH	LATITUDE E5480 NON-TOUCH
Student	Teacher/Staff	Teacher/Staff
		
Pricing		
Laptop: \$562 (add up to 12% for CBE costs) - Absolute included - Installation: \$45.00	Laptop: \$945.00 (add up to 12% for CBE costs) - Absolute included - Installation: \$45.00	Laptop: \$1134.90 (add up to 12% for CBE costs) - Absolute included - Installation: \$45.00

Gap: Wi-Fi/Internet Access

Expectation: Students and educators have school Internet connections that allow for learning, research, and testing.

Online research and learning are especially important for students in higher grades.

Reality:

- The more users on a network, the slower the bandwidth speed. Internet speed in a room slows down dramatically if more than 30 devices are on Internet access point.
- During PARCC testing last year, school staff were told to turn off their personal devices to ensure that there was adequate Internet capacity for students to take tests. Due to internet issues, some teachers have resorted to using personal device hotspots to download lessons and content.
- Overly sensitive filters block access to websites needed for research and impede access to online collaboration tools

Path Forward: Analysis

DCPS is paying OCTO up to \$14 million/year for school IT support, but current reality isn't meeting policy or expectations. This is likely due to a combination of many reasons.

What gaps exist in current IT support and to what extent has the following analysis been done?

IT Support

- How can the roles of DCPS and OCTO be clarified or modified to address those gaps?
- What are alternatives to the current IT support construct (e.g., in-house vs. OCTO contractor)?
What are the appropriate tradeoffs between cost and level/quality of service?
- How can feedback processes be strengthened to ensure that school challenges are being communicated and addressed in a timely fashion?

Hardware

- To what extent can OCTO requirements be relaxed to allow technicians to service donated computers (that are not strictly the DCPS-approved models)?
- How can DCPS/OCTO solicit feedback from educators and students on the kinds of devices that work best in a classroom environment?

Path Forward: Analysis

Wi-Fi

- How can Internet access be made more robust for entire classrooms that are working/testing online (e.g., along the lines of Metro Wi-Fi)?
- What is the appropriate balance between educational and security needs when deciding the sensitivity of filters (i.e., which websites should be blocked)?

Governance

- What are the mechanisms to ensure accountability of each agency (DCPS, OCTO, DGS) involved with school technology?
- How can agency roles be communicated clearly so that school staff know how and who to elevate technology problems?
- Are existing metrics truly capturing the state of technology in schools? If not, what additional metrics are needed?

Path Forward: Tech Plan

Ideally, this shared OCTO/DCPS/DGS analysis should feed into a **comprehensive DCPS technology plan** that would also address:

- how technology fits into the overall vision & goals for student education
- how tech support and hardware should be provided and funded in a sustainable way
- how school staff will be trained to use educational technology and provide feedback on what works or doesn't work

“DCPS should **create and make public a multi-year technology plan** to define and provide adequate technology to each school. The plan should included expected costs and planned funding sources.”

– 2017 DC Auditor report

Takeaways

- **The 2020 budget should allocate sufficient dedicated funding to meet school technology needs.**
 - DCPS has submitted to the Mayor's office a budget proposal that would phase in a 1-to-1 student-device ratio over time. Replacing old computers would be a good start, but does not fully address the need for reliable IT support, teacher training, reliable broadband access, and sustainable funding for the long term.
- **DCPS should work closely with OCTO on a comprehensive, multi-year technology plan** to define and provide adequate technology to every school, as recommended by the DC Auditor in 2017. The plan should include expected costs and planned funding sources.
- **DCPS/OCTO should not wait to analyze and address current gaps in IT support at schools.** Students will continue to experience negative impacts (as noted in slide 4) until there is reliable IT in schools.

Back-Up Slides

- **Slide 15: Immediate Challenges**
- **Slide 16: Computer-based Tests Used by DCPS**
- **Slide 17: Comprehensive Technology Plan**

Immediate Challenges

Internal DCPS document from FOIA request

DCPS Can't Wait: Technology Challenges in the District

- Significant Immediate shortage of devices
 - High risk of districtwide OSSE mandated assessments (PARCC, ACCESS, DC Science, MSSA) administration challenges
 - **Microsoft support for Windows 7 will end in January 2020 – 65% of student devices on Windows 7**
- Insufficient “At-Risk” technology funding
- Price of devices too high due to the lack of bulk purchase negotiating power. For about \$3.5M/year, we are not even keeping the 3:1 ratio – actually sliding backward as devices age out and break.
- CBEs can charge up to 20% higher than direct vendor prices
- Council approval timeline is at least 45 days including Office of Contracts & Acquisitions standard lead times of 180 days
- DCPS no longer receives OSSE Grant funding used for annual device purchases

Computer-based Tests Used by DCPS

English Language Arts

- Anet ELA Interim Assessments – Measures students’ progress in ELA towards meeting Common Core State Standards
- Lexia – literacy intervention aligned to Common Core in six domains of reading
- myON – e-library with digital books for readers of all levels
- Reading Inventory (RI) – Computer-adaptive reading assessment that measures reading levels

Mathematics

- Digitized Eureka End-of-Module Assessments - Measures progress towards meeting selected Common Core math standards
- First in Math – Differentiated instruction with content ranging from one-step addition to multi-step algebra
- ST Math – Helps students learn by visualizing math concepts; helpful for English language learners and students with special needs
- iReady Math – Measures math skills and progress
- Zearn Math – Targeted lessons tied to Eureka curriculum
- MAP Math Diagnostic Assessment (high school) – Measures students’ understanding of algebra and geometry concepts

End-of-Year Summative Assessments:

- PARCC: Partnership for Assessment of College & Career Readiness
- DC Next Generation Science Test – Measures progress toward Next Generation Science Standards

Comprehensive Technology Plan

DC is lagging behind other cities that have implemented comprehensive school tech plans

	DCPS	Arlington County (Virginia)	DeKalb County (Georgia)	Orange County (Florida)
Number of Students	~49,000	~28,000	~102,000	~203,000
Percent Free or Reduced Price Lunch	71%	31%	72%	70%
Technology Plan with Vision and Goals	?	Y	Y	Y
Gap Analysis of Current Situation	?	Y	Y	Y
Stakeholder Engagement/Feedback	?	Y	Y	Y
Professional Development For Teachers	?	Y	Y	Y
Student-Device Ratio (Desired or Actual)	?	1-to-1	1-to-1	1-to-1
Dedicated Funding Stream	?	Y	Y	Y