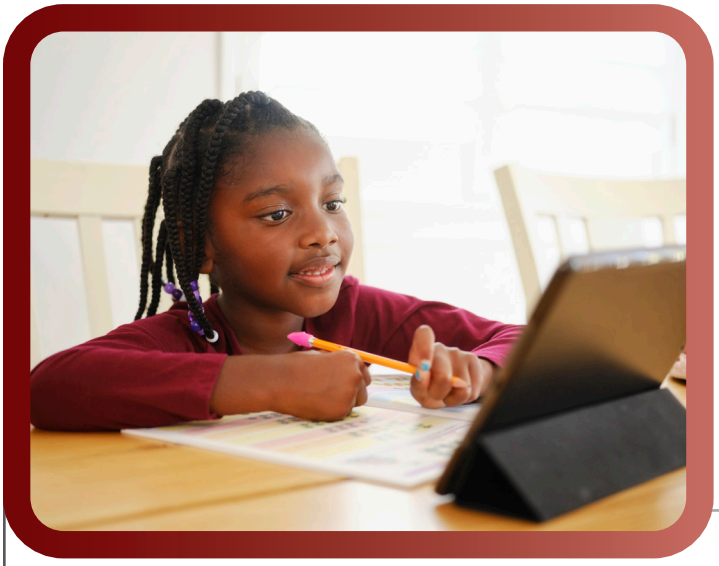
Arlington Public Schools

Technology 1:1 Program BRIEFING REPORT

MARCH 2021



TECHNOLOGY 1:1 PROGRAM

The APS journey from shared computer labs to issued devices, frequently called the 1:1 project, began in 2011 with direction from the Board. The 2011-17 Strategic Plan included a performance measure of having one device per student. The APS 2012-16 Technology Plan specified that every student will have access to an internet-connected personal computing device both during and outside of school hours. The Department of Information Services responded to this direction by establishing a vision of Any Time, Anywhere, Any Device. By 2017 the Division had substantially completed the objectives. All Grades 3-12 students were issued devices, a hotspot program was in place, and most applications were available both on-site and remotely. This transition prepared the Division well for the COVID-19 pandemic. APS was able to build upon this prior work to ensure every student could participate in distance learning.

THE FIVE PILLARS

APS uses an integrated approach to provide technology that supports teaching and learning. Five key areas are necessary for the successful use of technology, and the level of resources placed into each of these areas must be balanced.

- **Connectivity** – Students must have reliable internet access both at school and at home
- **Devices** – Student devices must meet instructional requirements and be refreshed based on a lifecycle plan
- **Applications** – APS must provide students and teachers with a carefully selected suite of application to support teaching and learning
- **Technical Support** – Student devices must be supported to ensure they function optimally
- **Instructional Use Support** – Teachers must be provided professional learning and support in the use of technology

CONNECTIVITY

APS has a robust data network in its facilities, with high-quality wired and wireless access for students and staff. The pandemic brought to the forefront the connectivity digital divide and APS quickly partnered with Arlington County to develop a multi-pronged support process for families in need of improved connectivity. The foundation is providing families internet access through Comcast's Internet Essentials program, funded for the 2020-21 school year by a grant from Arlington County. To fill gaps where families can not take advantage of Internet Essentials, APS upgraded the hotspots to unlimited data plans. Large families, where the bandwidth provided by Comcast Internet Essentials wasn't sufficient, were provided Internet Essentials and an unlimited hotspot. School-based teams were formed to guide families through the process. The outcome of these interventions is that every APS family who has been identified as having connectivity issues has been provided support by APS.

DEVICES

Before the pandemic, APS issued iPads to students in Grades 3-8 and MacBook Airs to high school students. Students in Grades PreK-2 used shared devices. Schools were also provided with shared devices to support the Arts, Technology Education, and testing. As a result of the pandemic, APS purchased and issued devices to Grades PreK-2 students, and provided keyboard cases to middle school students. Many of the existing shared devices were provided to staff who were not previously issued devices.

In general, iPads are replaced on a 3-year cycle and computers are replaced on a 4-year cycle. Apple products are sold back to Apple through their Buyback program, this provides a significant cost offset for APS.

APPLICATIONS

APS provides teachers with hundreds of applications to support teaching and learning. Teachers leverage these applications to support student learning. These applications go through a rigorous vetting process that includes instructional value, student data privacy, technical compatibility, and financial value. The applications cover a spectrum of needs from general productivity tools such as word processing to applications designed to address a specific learning disability. An emerging trend is these applications are becoming both more interconnected and more intelligent. Interconnected applications are interwoven and interdependent with other applications. This helps to break silos, create efficiencies, and improves decision-making. For example, Canvas is interconnected with the Student Information System and numerous curriculum-specific resources. Intelligent applications use historical and real-time data from user interactions and other sources to make predictions and suggestions, delivering personalized and adaptive user experiences. For example, Lexia and Dreambox are are intelligent applications used to target students' fundamental literacy and numeracy skills in elementary and middle school. Teachers have found they are particularly effective at engaging students during asynchronous learning.

TECHNICAL SUPPORT

APS provides technical support to students, staff, and families using a progression of escalation levels.

- **Level 0: Self Service** – The division publishes a broad array of self-service support documents on the APS website while Instructional Technology Coordinators (ITCs) provide support documents through tools such as Google Docs. Students, staff, and families are encouraged to solve problems themselves before escalating to APS support staff.
- **Level 0.5: Call Center/2847** – The Call Center is a new service for families started during the pandemic, modeled on the existing x2847 (Help Desk) service for staff. The Call Center consists of a small team of repurposed Extended Day staff who provide immediate assistance with getting students connected and in their virtual classes. Level 0.5 support is focused on login issues and simple settings changes.
- **Level 1: ITCs** – ITCs troubleshoot issues that the Call Center is unable to resolve over the phone. ITCs also provide Level 1 support directly to the teachers and other staff in their building. Level 1 support is focused on separating training problems from hardware/software problems.
- **Level 2: Technicians** – Technicians troubleshoot issues that the ITC is unable to resolve. Level 2 is focused on hardware problems.

INSTRUCTIONAL USE SUPPORT

Instructional use support is provided through a variety of channels. The foundation is the school ITC. The ITC's primary responsibility is providing professional learning to teachers on how to integrate technology into their teaching practices. They do this through a variety of methods such as workshops, coaching, and collaboration on unit design. ITCs work to build a trust relationship with the school staff, essential to helping teachers learn new methods of teaching.

BRIGHT SPOTS

- **Comcast Internet Essentials Program**
- **A relatively small number of devices needed to be purchased to support distance learning**
- **The call center provided an important support bridge to the ITCs**
- **Increased use of Integrated and Intelligent Applications**
- **Dedicated ITCs**

In addition to the support provided by the school-based ITCs, teachers receive support from the central offices. Numerous technology-related professional learning opportunities are offered through online courses, these were emphasized during professional learning days at the end of the 2019-20 school year and the beginning of the 2020-21 school year. In the spring of 2020, Microsoft provided Microsoft Teams training to several thousand teachers. Throughout the 2020-21 school year, the Department of Teaching and Learning offered quarterly self-paced offerings to support teachers' use of instructional technology throughout distance learning. This enabled staff to participate in sessions that they deemed relevant to their work and offered them the flexibility to complete it at their own pace. Apple has recently begun to work directly with teachers on key topics.

Parents are a key partner in APS's mission. This is particularly true during the pandemic when students are learning from home. The APS Parent Academy was established at the start of the pandemic to provide support to parents. The Parent Academy offers parents and guardians ongoing learning opportunities via videos on a wide variety of subjects to support the academic and social/emotional development of children. Topics include child development, student achievement, wellness and mental health, and internet safety.

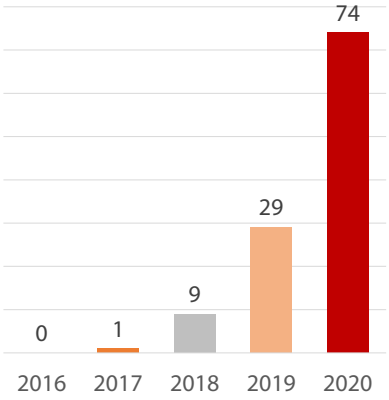
DATA THAT PROVIDES INSIGHT

~1,000
students use Comcast Internet Essentials

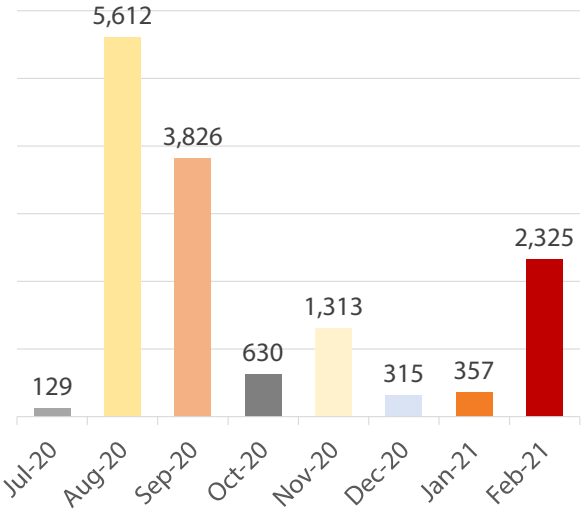
10,000+
additional student and staff devices were provided as a result of the pandemic

5,000
Family Call Center calls since the 2nd week of school

Intelligent Applications



Instructional Use Support: Professional Learning Activities Related to 1:1



WHAT WE LEARNED

If there is a silver lining to the COVID-19 pandemic, it is that APS learned how to effectively use technology as an integral part of our instructional delivery. Teachers have gained new skills in distance learning that will continue to enhance teaching and learning for the foreseeable future; this will create numerous opportunities for APS, such as new approaches to Dual Enrollment courses, efficiencies for low-enrollment courses, extending the school day, new ways of thinking about how buildings are used, and, the possible end of the snow day.

For this transformation to continue, the five pillars must be in balance and treated as an integrated system. No one pillar is more important than another. An under-resourced pillar will reduce the effectiveness of the others, an over-resourced pillar will place unmeetable demands on the others.

OPPORTUNITIES FOR IMPROVEMENT

Gaps exist in all five pillars and across the pillars: Some students have superior connectivity at home; Before Covid, Grades PreK-2 students didn't have issued devices; The number of technicians is insufficient to support the number of devices; Despite its rigor, the application selection process does not currently analyze if new applications are truly effective; There is significant variation across schools in the ITC role; Teachers are at different stages in their mastery of technology tools.

LOOKING FORWARD

To close these gaps, APS can make a few key changes:

- Provide permanent funding for connectivity. (This is now required by the state.)
- Continue to provide PreK-2 students with issued devices. This will create a regular replacement cycle with students getting devices at grades PreK, 3, 6, and 9.
- Continue to implement the multi-year plan to increase the number of technicians.
- Redesign the application selection process, leveraging the existing instructional resource selection process.
- Provide increased central guidance to the ITCs, similar to the centralized guidance provided by the curriculum supervisors.

APS also has the opportunity to close learning gaps, leveraging what we learned during the pandemic, by creating a secondary virtual learning program. This is currently a proposal as part of the IPP.