STATEWIDE EDUCATIONAL TECHNOLOGY PLAN

January 2020

INTRODUCTION

This report is submitted to the Senate Committee on Education and the House Committee on Education per Louisiana Revised Statute 17:3921.2. It provides an overview of Louisiana's progress relative to educational technology and provides the status of technology readiness of public schools and school systems. Moreover, this report will identify standards, goals, and support strategies to facilitate the expansion of technology rich environments.

Louisiana's students—all of them, no matter race, disability, or creed—are as smart and capable as any in America. Louisiana has worked hard to raise expectations for students, and as a result, students are performing at higher levels than ever before. While Louisiana has made great strides in increasing access to life opportunities for its students, there still remains a number of challenges to overcome. Technology access and integration are among those challenges. Every child, regardless of background, race or economic status deserves equitable access to personalized, student centered learning experiences to prepare for living and working in the digital age.

CURRENT STATE

For this and previous legislative reports, the Department of Education has relied on Louisiana's Technology Readiness Tool (TRT) data to measure school and school system educational technology progress. In the past, the collection has focused on number of devices, internet availability, and network capacity. This year additional information was collected so as to provide a more complete picture of the technology landscape in Louisiana. Data on devices and Internet is included in this report as well as information on device type, device location, and availability of staff to both support and integrate technology within the classroom.

Broadband

Since 2017-2018, the FCC and the State Education Educational Technology Directors Association (SETDA) have established broadband or high-speed Internet access targets. This year they announced a unified target for the 2023-2024 school year. These recommendations were based on a multiyear study that analyzed internet usage for various school sizes and rurality and were reported in SETDA's Broadband Imperative III report. Of note, the 2023-2024 model is actually less bandwidth than that recommended for 2020-2021.

|	**2023-2024 GOALS**
Small School System: Fewer than 1,000 students	At least 3 Mbps per user (Min. 300 Mbps/ System)
Medium School System 1,000 to 10,000 students	At least 2.8 Mbps per user
Large School System More than 10,000 students	At least 2.0 Mbps per user

Additionally, the report acknowledges that the amount of actual bandwidth needed varies based on the technological approaches to implementation. In Louisiana, school systems utilize caching, peer-to-peer (P2P), and other network optimization technologies which can increase the efficiency of bandwidth resources resulting school systems providing the same level of access at lower reported rates. Currently, 33 percent of school systems are within the ranges established by SETDA for 2019-2020.
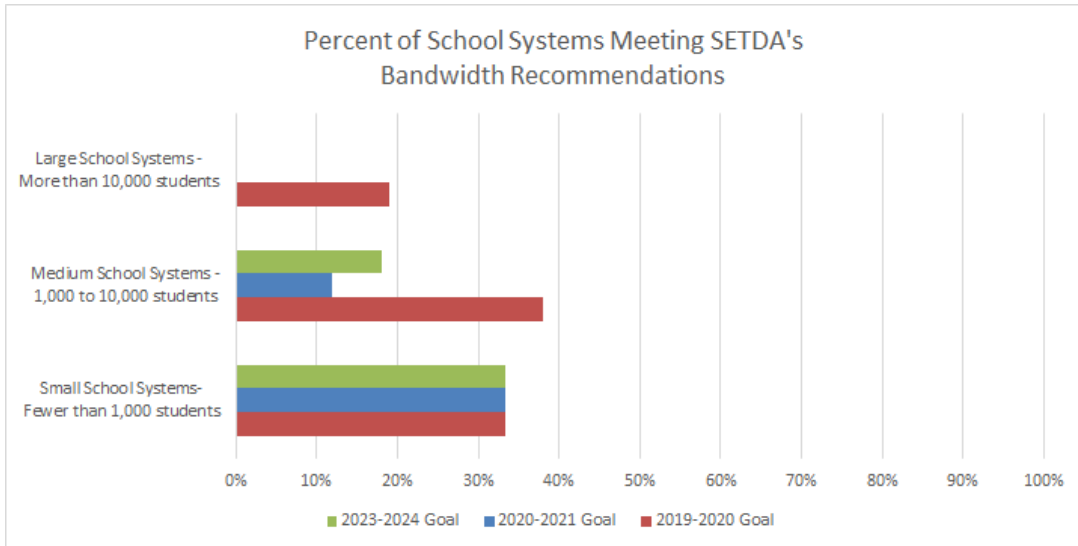

Student Devices

Each year more and more students have access to a computing device at school in Louisiana. Of the reporting school systems, 566,505 devices are available to students resulting in 1.1 students per device as compared to 1.3 in 2018 and 1.6 students per device in 2016 and 2017. These increases occurred despite significant recent technological challenges, including Windows 7 expiring and cyberattacks. While there has been continual improvement, Louisiana would still need to acquire approximately 82,551 devices to reach the goal of one student per device.

Again this year, school systems reported the type of devices to which students have access, and with more devices available to students, it follows that these devices would be portable devices. Fifty-two percent of all the reported devices are Chromebooks, followed by desktop computers and then laptops.
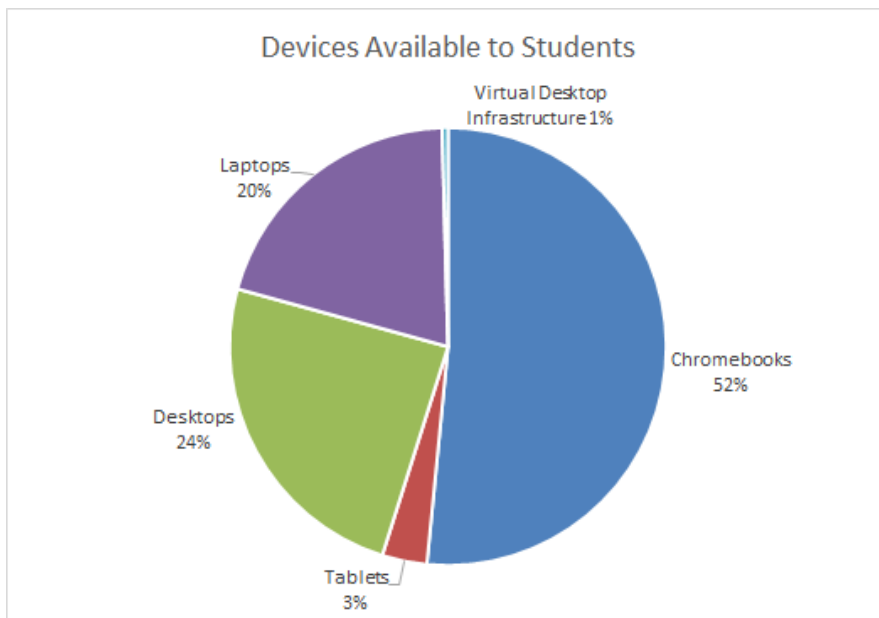
Additionally, the Department collected information on where devices are located. The figure below shows that 45 percent of devices are housed in the classroom with 33 percent of devices available to students through a mobile lab. Of note, eight percent of devices were reported to be with students throughout the day as they move from subject to subject and class to class.
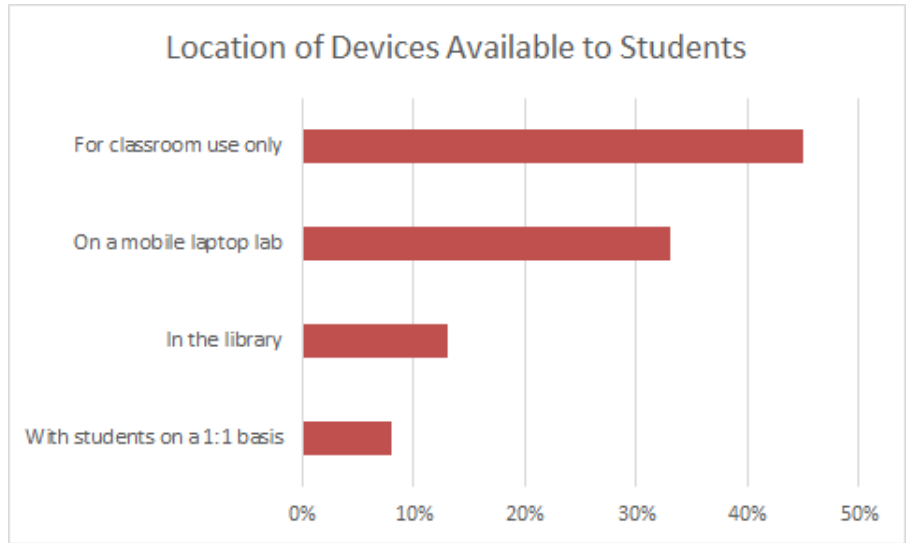
Technical Support

As with last year's data, the number of technical support staff available to teachers and students varies dramatically from school system to school system. School systems employ an average of 3.4 educational technology staff per school system; the number ranges from 0 to 75 per system. There are an average 6.1 information technology staff per school system with a count ranging from 0 to 50.

STANDARDS AND GOALS

The effective and appropriate use of technology continues to be an ever increasing prerequisite of career and personal success in modern society. In support of the belief that Louisiana students deserve a technology-rich environment to ensure they are prepared for the future, continued increases in technology access are needed. Therefore, the Department has adopted broadband goals, device specifications, and recommended digital tools for school systems.

These goals were established based on the capacity targets and recommendations cited by the FCC, SETDA, and the International Society for Technology in Education (ISTE). They represent the optimal capacity needed to provide students educational environments to foster the skills and knowledge to be successful participants in the modern global economy. Capacity access alone is not an indicator of academic success but it does provide a data point for assessing the growth, prioritization and potential utilization of embedded resources, tools, and services utilized by students and schools across the state.

	2019- 2020 GOALS	2020-2021 GOALS	2023-2024 GOALS
Devices	Student to device ratio of 2:1	Student to device ratio of 1:1	Student to device ratio of 1:1
Internet Access Small School System *Fewer than 1,000 students*	At least 1.5 Mbps per user (Min. 100 Mbps/ system)	At least 4.3 Mbps per user (Min. 300 Mbps/ System)	At least 3 Mbps per user (Min. 300 Mbps/ System)
Medium School System *1,000 to 10,000 students*	At least 1.0 Gbps per 1,000 users	At least 3.0 Gbps per 1,000 users	At least 2.8 Mbps per user
Large School System *More than 10,000 students*	At least 0.7 Gbps per 1,000 users	At least 2.0 Gbps per 1,000 users	At least 2.0 Mbps per user
Network Connectivity	At least 10 Gbps per 1,000 users	At least 10 Gbps per 1,000 users	At least 10 Gbps per 1,000 users

Minimum Technical Standards for Devices

Minimum standards for devices ensure that students across the state have the necessary computing power in both digital learning and online testing. Minimum specifications for online testing can be found here and attached.

Requirements for Laptops, Desktops and Thin Clients

● Laptop and Desktop OS: Windows 8.1, Windows 10 or higher, Windows RS, Mac OSX 10.11, Mac OSX 10.12 or higher, or Google Chrome latest stable channel version.
● Thin Client OS: Windows Server 2008 R2, Windows 2012 R2, or Windows 2016 R2, Window 10 or higher operating systems
● At least 4 gigabytes (GB) of RAM
● At 125 GB or larger hard drive
● At least a 1.6 gigahertz or faster processor

Requirements for Tablets

● iOS 9.35 or higher, or Windows 8.1 Pro operating systems
● At least 1 GB of RAM
● At least a 9.75 inch diagonal screen
● A wireless network adapter

Digital Applications, Electronic Resources, and Materials Standards

Students are able to access more information than ever before. Advancements in technology have redefined the classroom from slate chalkboards and books; to paper, pencils, and books; to electronic devices. With the current technology becoming commonplace, there has been an escalation in development of educational technology tools. Traditional learning tools, materials, and opportunities are being transformed. Technology provides a path, such as online courses and distance learning, for all students to have the opportunity to access rigorous

coursework like honors, Advanced Placement, and dual enrollment courses. Learning materials have moved beyond textbooks to digital textbooks, multimedia, online resources, and other similar digital resources. Furthermore, educational technology is becoming more sophisticated and engaging. All students should have access to these resources, as well as the following basic digital tools:

- Word processing software
- Spreadsheets
- Presentation and multimedia software
- Communication and collaboration tools
- Authoring tools
- Online materials
- Digital textbooks
- Learning management systems.

This year, the Technology Strategy Task Force was convened. The group created a multidimensional, multi-year strategy which uses funding and recognition as incentives to encourage actions and provide resources to support technology needs. When choosing which digital tool to use, school systems and educators may reference the software evaluation rubric in the 2019 Technology Strategy Task Force Report.

STRATEGIES FOR SUPPORT

With the cyberattacks experienced by both local school systems and Louisiana state government, this has been a challenging year. However, these events have highlighted day to day dependence on technology and underscored the need for security and training. The Department is committed to providing support to school systems as they continue to advance in providing a technology-rich environment for students. Support focus areas include instructional technology resources, devices, Internet bandwidth, networks and network security, Internet safety and data privacy as well as targeted assistance for high poverty and rural areas.

Device and Network Support

Device and network support is focused on acquiring the best devices, network equipment, and broadband services at the lowest possible cost to the school system. The cost of reaching a one-to-one student to device ratio in every school statewide is approximately $50 million, although pricing could be reduced through cooperative endeavors and other purchasing options. The cost to expand Internet bandwidth and network connectivity for all schools depends on a wide variety of factors including the existing infrastructure, density of services, wireline options, and bundled services and supports in the school system, as well as replacement/upgrade cycles, and security and filtering requirements. To meet the goal of one Mbps of Internet bandwidth per student, the cost could range between $18.1 and $23.9 million. This amount is before factoring in federal E-Rate discounts for school Internet services, which cover, on average, 84 percent of the cost.

The Department understands the great need in this area and is committed to supporting schools systems in finding financial solutions.

- The Department will continue to identify state, federal, and corporate funding opportunities to defray the cost of technology purchases for school systems. This support includes monthly webinars providing guidance with E-Rate filing; school systems leveraged $32.9 million in federal funds through the E-Rate program last year.
- The Department will continue to work with the Division of Administration to assist school systems in developing and leveraging state, regional, and local contracts for student devices, software, network hardware, Internet, broadband and network services to provide the best pricing available

for all school systems building on 165 existing technology contracts that are signed and used statewide.
- The Department will continue to work with other state agencies and Internet service providers to address existing challenges that would prevent an expansion of Internet connectivity availability.
- The Department will continue to work with school systems to develop new programs for expanding device access to students (e.g., low cost student device purchase programs, leasing programs, hardware as a service, refurbished computer programs and BYOD plans).

Support for High Poverty and Rural Areas

Even though high poverty and rural areas present a unique set of challenges when it comes to technology, it is critical that these students have the same access to technology as other Louisiana students. Small numbers of students in rural areas can often result in less "buying power" and ultimately higher costs for school systems. Likewise, adequate access to the Internet can be especially challenging due to the high costs of laying fiber in rural areas and Internet service providers' reluctance to take on the expense. Despite these obstacles, Louisiana school systems in high poverty and rural areas have made advances over the years. Rural area school systems average 1.4 to 1 students to device and high poverty school systems average 1.1 to 1 as compared to the state average of 1.1. Additionally, rural and high poverty schools are keeping pace with the rest of the state in regards to broadband. While 52 percent of school systems achieved the ranges established by SETDA, approximately 51 percent of rural schools and 42 percent of high poverty schools reached the SETDA goal.

To continue technology advancement in these school systems, the Department will provide the following supports:

- The Department will continue working with technology vendors to develop and expand state contracts that offer lower pricing and additional options for procurement of student devices, as well as software and network hardware, thus increasing high poverty and rural area school systems' "buying power."
- The Department will continue to provide guidance and support to local school systems relative to unused or underused federal and state grant and funding programs that are applicable to high poverty or rural school systems.
- The Department will work with other public and private entities to develop long-term connectivity and support strategies that will improve access for rural and high poverty schools and students.

Training and Professional Development

The Department is committed to ensuring that technology is seamlessly integrated in a way that supports learning. Therefore, instructional practices and the use of technology is woven into broader professional development supports provided by the Department to school systems throughout the school year.

- The Department will continue to host and/or provide training at regional and statewide events for educators in using and embedding technology.
- The Department will continue to support school systems and educational leaders in selecting ongoing professional development based on the needs of local educators, including implementation of technology in the classroom in coordination with high-quality curricular materials.
- The Department will continue to support the Louisiana Computer Using Educators Association (LaCUE) by appointing a member to its board and providing assistance and promotion opportunities for LaCUE's annual and regional conference events.
- The Department will continue to work with state contracted vendors and private and public partners to provide ongoing technical training on software and hardware that supports local school system adoption and expansion of technology and infrastructure.
- The Department will continue to provide guidance on potential strategies for upgrading and purchasing current technology.

- The Department will provide school systems support through State and Federal partner agencies who are responsible for training, management, guidance, support, investigative services, and remediation of cyber incidents.

Internet Safety, Data Privacy, Data Security

Increasing Internet connectivity and device access necessitates policies that guarantee responsible use, student privacy, and compliance with both state and federal laws. The Consortium of School Networking (CoSN) and the U.S. Department of Education provide guidance on protection techniques and adherence to applicable federal laws. Additionally, Louisiana's Data Governance and Student Privacy Guidebook provides a roadmap for school systems in developing and executing their plans to ensure student privacy is a priority. It breaks down the process of building a data governance plan into six steps: know the laws, build a team, provide training, build strong protocols, make security a priority, and involve parents. The guide provides tools, templates, and exemplars for each step, enabling school systems to customize their plans. Additionally, the guidebook features an overview of federal and state laws along with annotations as to where Louisiana law is more restrictive and requires school systems to take added caution.

Additionally, the Department will continue to provide the following supports:

- The Department will continue to provide school systems with guidance and information relative to federal and state laws governing Internet safety, data privacy and network security, cybersecurity vulnerability testing and mitigation steps and/or services.
- The Department will continue to support school systems with needs assessments, data agreements, and grant applications to ensure compliance with federal and state laws governing Internet safety, data privacy, and network security.
- The Department and school systems will continue to take steps to ensure student data and other information is secure per state and federal statutes.

CONCLUSION

Continued progress has been made and with each passing year, students have more opportunities to interact with and use technology in the classroom. However, there remains more work to be done to reach the goal of providing all students with a learning environment that effectively utilizes technology to its fullest extent and provides students with the skills they need in today's global economy. As demonstrated through the strategies and supports in this report, the Department is committed to working with school systems, technology partners, and policymakers to make this vision a reality for every student in Louisiana.