

REPORT TO THE HOUSE AND SENATE COMMITTEES ON EDUCATION
OF THE LOUISIANA LEGISLATURE



Technology Strategy Task Force

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PREPARED BY THE LOUISIANA DEPARTMENT OF EDUCATION

EXECUTIVE SUMMARY

The future of Louisiana resides with the children of today and tomorrow. Recognizing that maxim, the Louisiana Legislature created the Technology Strategy Task Force in order to ensure that Louisiana's schools have at their disposal the most effective and efficient technological tools conceivable. Specifically, the task force was charged with conducting a thorough review and analysis of the statewide technology plan and the status of the technological abilities and projected needs of public elementary and secondary schools.

In reviewing current technology and future needs for Louisiana's schools, the taskforce developed overarching goals centering on ensuring Louisiana's students are prepared to live, work, and thrive in a highly connected world. When students are prepared an added benefit is an increase of technical skills in Louisiana's workforce that ultimately drives economic development.

The work of the task force was divided into software, system components, and implementation.

- The Software Group provided recommendations for
 - software types,
 - evaluation,
 - procurement, and
 - future plans.
- The System Components Group provided recommendations for
 - devices,
 - connectivity and broadband,
 - cybersecurity, and
 - procuring IT services and devices.
- The Implementation Group recommended three areas of focus (secure networks and appropriate staffing, number of devices and sufficient bandwidth, and effective technology integration) with a strategy to use funding and recognition as incentives to encourage action by school systems.
- Additional recommendations include
 - the allocation of funding to support security, connectivity, and program implementation;
 - the establishment of goals and actions that facilitate cybersecurity, technology resources, and technology integration; and
 - the creation of a forum where state and school system technology leaders can collaborate and plan technology initiatives and best practice, encompassing both current and future technology needs.

All students deserve opportunities and access to the tools needed to succeed in today's information economy. They must have access to infrastructure, devices, and applications. It's clear that Louisiana's school systems have worked hard toward this goal. However, it is also clear that school systems struggle to provide the supports needed. In many cases, school systems are functioning with old equipment, patchwork infrastructure, and staff that are overtaxed. If Louisiana is to provide all students with access to the same opportunities as their peers across the country and prepare them to live, work, and thrive in a highly connected world, drastic steps are needed. However, establishing guidelines for software and hardware selection, network structures, and contract options; providing professional development opportunities; and developing strategies for technology and curriculum integration are pointless efforts if schools cannot fund these endeavors. This task force urges Louisiana's Legislature, Department of Education, Office of Technology Services, and school systems to work together to support the strategy expressed herein. We know that the world is ever changing, and technology is here to stay. Embracing technology can elevate Louisiana's students' potential, resulting in a better Louisiana.

INTRODUCTION

The future of Louisiana resides with the children of today and tomorrow. Recognizing that maxim, the Louisiana Legislature created the Technology Strategy Task Force in order to ensure that Louisiana's schools have at their disposal the most effective and efficient technological tools conceivable. The task force was composed of 16 appointed members and charged, at a minimum, to:

1. Thoroughly review the statewide educational technology plan as it relates to current capabilities and projected future needs for internet services, utility hardware, individual devices, software applications, and training needs.
2. Examine current capabilities and future technology needs.
3. Identify any technology gaps that exist and examine whether the gaps are due to a school's location or the relative wealth of a public school governing authority.
4. Determine whether Louisiana Optical Network Infrastructure is a potential cost-effective partner for providing technology to schools.
5. Determine the impact of technology mandates and state and local funding mechanisms.
6. Define strategic funding needs.
7. Determine a strategy to secure available outside funding to assist in meeting the technology needs of students and schools.
8. Develop a long-term strategy to assist the Louisiana Department of Education and public school governing authorities to plan for and meet current and future technology needs.

The task force began meeting on August 30, 2018, and work immediately ensued. With Senator Conrad Appel as the elected chairman, past technology implementation was reviewed, working groups were established, and special guests provided inspiration and possibilities for technology-enhanced classroom environments and learning. A vision for Louisiana's students began to form.

LA R.S. 17:3921 states, "In order to prepare students for the twenty-first century, it is the policy of this state that a comprehensive technology and technology-based instruction curriculum and program be available to all students to the maximum extent possible to ensure a quality education."

This policy not only establishes the vision, but it also requires action. As such, the taskforce developed the following overarching goals.

1. Education technology will be as safe, effective, and productive of a tool in the school environment as it is in the world beyond schools.
2. All Louisiana's students will have access to the same opportunities as their peers across the country.
3. Education technology will support Louisiana's academic strategy.
4. Louisiana's educators will be equipped with technology to more effectively teach students.
5. Students will be prepared to live, work, and thrive in a highly connected world resulting in an increase of technical skills in Louisiana's workforce, ultimately driving economic development.
6. A technology skills gap will not become the next achievement gap.

For the last year and a half, the Technology Strategy Task Force has worked to address every item outlined in the law and to develop the structure needed to facilitate the vision and goals. This report details the evaluation of the past and current technology landscape, the long-term strategy recommendations of each working group, and a road map to ensure Louisiana's educators and students have access to effective and efficient technology tools.

Past and Current Technology Landscape

In order to develop a path forward that provides Louisiana's students with technology access and skills that their peers have nationwide, it was critical to review the past and current educational technology landscape. With the use of federal funding from 1997-2010, the Louisiana Department of Education provided educational technology support through the Louisiana Center for Educational Technology (LCET) and eight regional

Teaching Learning and Technology Centers (TLTC). With a staff of 52, state technology leaders provided numerous professional development opportunities and resources to help districts improve teaching and learning through standards-based technology integrated instruction. Initiatives included, but were not limited to, professional development for teachers (FirstTech, InTech), librarians (Lili), administrators (LeadTech), and district-level technical staff. In addition, E-Rate support, technology planning guidance, and purchasing guidance were provided. In 2010, LCET and the eight regional TLTCs were closed due to the expiration of federal funding. Currently, the Louisiana Department of Education has a staff of two to assist its 69 parish school systems, 51 state-authorized charters, and nonpublic schools.

Data collected for the January 2019 Statewide Technology Footprint revealed that the number of technical support staff and educational technology staff available to teachers and students varied dramatically from school system to school system. At the district level, the number of educational technologists ranges from zero to seventy-five per system. Thirty-nine percent of districts reported no district-level staff and twenty-nine percent of districts reported having only one person responsible for educational technology initiatives. Furthermore, fifty percent of the statewide total of educational technology staff are located in four school systems. On the school level, sixty-one percent of schools reported no school-level educational technologist on staff and thirty-four percent of schools reported having only one educational technologist. At the district level, the number of technical support staff ranges from 0 to 60 staff per system. Fifty percent of the statewide total are located in nine school systems. The device to technical staff ratio ranges from 281:1 to 3,486:1. At the school-level, seventy-four percent of schools have no technical support staff.

State funding allocated specifically for district-level technology programs ended in 2003 and federally funded allocations ended in 2009. For the past ten years, districts have struggled to locate funding sources to not only maintain their current status, but to also expand digital learning opportunities for their 21st century learners. As reported in the January 2019 Statewide Technology Footprint, the amount of funding a school system spends on technology ranges from approximately \$4,000 to \$8.5 million. Using the latest available data (2016-2017), school systems reported a total of approximately \$100 million in technology expenditures. With a student enrollment of 723,554, the average amount spent per student was approximately \$138.21.

SOFTWARE RECOMMENDATIONS

The Software Group was charged with the job of evaluating current and future software, course alignment procedures with teachers, best practices for training, and the implementation of software at both the district and state levels.

This group concentrated on how recommendations could have a positive impact on student achievement. During brainstorming and planning sessions, the group focused upon an idea that was put forth by Senator Appel, "What should a Louisiana classroom look like in 5 years? In 10 years?" This laid the foundation for most of the work of this group.

The direction of the group concentrated on four main areas of thought. The goal was to develop a strategy that would create an integrated software utilization program which would be aggressive and based upon future expectations. The areas in which strategies were to be developed include:

1. software to maximize student usage and applications to post-secondary education and into career needs;
2. cost of acquisition and use, training needs and costs, and periodic upgrades and evaluations;
3. a schedule with waypoints defining when various events shall occur, such as events as when elements of software must be evaluated and upgraded; and
4. a design targeted to prevent functional obsolescence due to failure to align with the rapid expansion of technology.

The Software Group determined, upon initial review of these four main areas of thought, to concentrate on:

- the breakdown of software categories into sections which would include educational, school system logistics, and informational technology;
- best practices or a suggested overview which provides specific software types for each software section;
- a software rubric to assist school systems when making software decisions; and
- the connection of possible professional development opportunities or suggestions to each of these software sections.

Recommendations:

- 1) In terms of software selection, the task force recommends that the State of Louisiana provide a general guideline for area of software exploration that include, but is not limited to, the following:

Software Categories to Explore		
Educational	School System Logistics	Informational Technology
Intervention Presentation for Teacher and Student Classroom-based Productivity (exp. Kahoot, etc.) Test Prep/Assessment Data Analysis for Educational Decision Making Content-based Resources Learning Management System	Financial Human Resource Cafeteria Student Information System Grading and Reporting Special Education and IEP Database Library and Asset Management Behavior Tracking Parent Communication	IT Related Software and Backup Security Software

- 2) In order to make purchasing decisions, the task force recommends that school systems utilize a software rubric which is based upon suggestions by Liz Kolb in her book, *Learning First, Technology Second*. This rubric is based upon the Triple E Framework which looks at engagement in the learning, engagement of the learning goals, and extension of the learning goals.

The Triple E Framework: Learning First, Technology Second			
Engagement in the Learning			
	0 = No	1 = Somewhat	2 = Yes
1. Can the technology tool help students focus on the assignment or activity with less distraction? (time-on-task)			
2. Can the technology tool help motivate students to begin the learning process?			
3. Can the technology cause a shift in the behavior of the students, where they go from being passive to active social learners? (through co-use or co-engagement)			

Enhancement of the Learning Goals			
	0 = No	1 = Somewhat	2 = Yes
1. Can the technology tool allow students to develop a more sophisticated understanding of the learning goals or content? (higher-order thinking skills)			
2. Can the technology create scaffolds to make it easier to understand concepts or ideas? (e.g. differentiated, personalize or scaffold learning)			
3. Can the technology create paths for students to demonstrate their understanding of the learning goals in a way that they could not do with traditional tools?			
Extension of the Learning Goals			
	0 = No	1 = Somewhat	2 = Yes
1. Can the technology create opportunities for students to learn outside of their typical school day?			
2. Can the technology create a bridge between students' school learning and their everyday life experiences? (connects learning goals with real life experiences)			
3. Can the technology allow students to develop skills that they can use in their everyday lives?			

Source: *Learning First, Technology Second*: Liz Kolb

Scoring the Rubric

- 13–18 points: Exceptional potential
- 7–12 points: Average potential; depends on instructional moves around tool
- 6 points or below: Low potential; needs strong instructional moves around tool

- 3) The State will develop a plan for procurement of software that takes into account local, as compared to statewide, procurement procedures.
- 4) The State will implement a strategy, much like it does for books and other learning materials, to evaluate software for efficacy and expense.
- 5) The State evaluation system will include an ongoing knowledge of new and future software as it emerges.

SYSTEM COMPONENTS RECOMMENDATIONS

The System Components group was charged with exploring the advantages and disadvantages of data delivery structures, connectivity to the web, hardscape, and end user devices. As the group explored these data technologies and electronic communications, it became apparent that these are more critical than ever before to support and expand business and educational outcomes. The Internet, in particular, has spurred the greatest change by providing a mechanism for driving innovation, improving information sharing, fostering e-

learning, enhancing workforce skills, facilitating business operations, and expanding access to a plethora of educational resources, tools, and materials from across the globe. Based on this premise, the System Components Group focused its recommendations on implementing both short- and long-term strategies for utilizing technology and the power of the Internet to support educators and school administrators.

The working group's recommendations fell into six main categories: broadband Internet access, end-user devices and support, data center and network operations, and cybersecurity. Each of the six categories are interconnected and necessitate a holistic approach to achieve the goal of ensuring Louisiana's children have access to effective and efficient technological tools.

Recommendations:

1. In order for all K-12 schools, public and private, to have fiber high-speed broadband access, the State will work with the Statewide Broadband Commission to support and prioritize schools not connected via fiber, as well as to aggressively pursue statewide and regional partnership opportunities to enhance broadband connectivity. The State will investigate the options available (LONI, 5G, satellite, etc.) and make recommendations to school systems according to their characteristics. The State will recommend future goals for bandwidth and speed available as well as metrics and measurement to ensure that districts comply.
2. To help ensure all students have device access to support teaching and learning, the State will establish suggested standardized device models for purchasing and provide purchasing options to facilitate consortium buying and/or leasing.
3. The State will explore shared access to managed service options for IT, hardware, and software, allowing schools to focus staff resources on supporting educational functions rather than duplicating time and resource consuming management of IT services and equipment.
4. School systems will develop purchasing consortiums, enabling better buying options.
5. School systems will perform an information technology needs assessment and cyber assessment/audit every five years to document risks, inform policy changes, and to update and implement technology funding objectives.
6. The State will work with Louisiana's Cybersecurity Commission and other specialized resources to establish cybersecurity supports for school systems as they defend against cyberattacks.

IMPLEMENTATION RECOMMENDATIONS

The Implementation Group focused on developing an overall strategy for implementation, including the control and management of programs, evaluating financing, purchasing practices, and developing metrics of accountability. Much of this work was dependent upon and overlapped with the Software Group and the System Components Group. To develop a plan, this group studied past and current support structures, including allocation of instructional and technical staff, funding resources, and accountability measures. The findings are reported in the introduction of this report; most significantly, the research made clear that monetary and human resources are critical to keeping pace with the rapid advances in technology and are fundamental to the success of any educational technology strategy.

With this in mind, the Implementation Group developed the following multidimensional, multi-year strategy which uses funding and recognition as incentives to encourage actions and provide resources to support technology needs. The group leveraged the points of interest identified by the Software and Systems Components Groups to develop a set of focus areas and ultimately a set of actions. School systems would provide documentation of their progress in each focus area, and this documentation would inform funding and recognition. Chart 1 identifies goals, actions, and documentation recommended by this task force. Additionally, to support this strategy the following are recommended:

1. The Louisiana State Legislature will allocate additional funding to support technology security, future needs for internet connectivity, and technology implementation.

2. The Louisiana State Legislature will fund additional state-level staff, including both technical staff and educational technology integration staff, to provide educational technology support and to implement this plan.
3. The State will establish goals and actions that facilitate cybersecurity, technology resources, and technology integration, including but not limited to, the chart below.
4. School systems will submit a documentation of the actions they have taken. Additionally, schools will provide critical information to the State so that in the instance of a crisis or state of emergency, the State can provide assistance.
5. The State will evaluate school system documentation and provide certification, as well as funding, based on a scoring rubric.
6. The State will establish a forum where state and school system technology leaders, including leaders from each region of the state, collaborate and plan technology initiatives and best practices, encompassing both current and future technology needs.

Chart 1

Focus Area	Actions to Incentivize	Evidence
Secure networks and systems to support technology integration	<ol style="list-style-type: none"> 1) Appropriate technology staff (with required skill set) to device ratio or shared services accomplishing appropriate technology support 2) Offsite and offline data backup services 3) Current and up-to-date critical business software purchasing 	System assessment with established criteria evaluated with a defined rubric
Sufficient devices and bandwidth to support technology integration	<ol style="list-style-type: none"> 1) Student to device ratios 2) Actual bandwidth usage 	Self-report or part of the assessment
Effective technology integration into content	<ol style="list-style-type: none"> 1) Adopt core competencies 2) Progress in core competencies such as Future Ready or ISTE Standards and Certification 	Portfolio

Recognizing that this is a multi-year strategy, the following roadmap is recommended.

Step 1: Establish a strong, secure infrastructure.

Step 2: Identify core competencies for teachers and students.

Step 3: Develop metrics and a measurement and reporting mechanism to keep the plan on target.

Step 4: Develop a sustainable funding plan and ensure its implementation.

Step 5: Support teachers in their integration of educational technology by creating professional development and teacher certification programs in education technology instruction.

Step 6: Reconvene this Task Force on an annual basis to report the status of the implementation of all elements of the plan to the Legislature.

CONCLUSION

All students deserve opportunities and access to the tools needed to succeed in today’s information economy. They must have access to infrastructure, devices, and applications. It’s clear that Louisiana’s school systems have worked hard toward this goal. However, it is also clear that school systems struggle to provide the supports needed. In many cases, school systems are functioning with old equipment, patchwork infrastructure, and staff that are overtaxed. If Louisiana is to provide all students with access to the same opportunities as their peers across the country and prepare them to live, work, and thrive in a highly connected world, drastic

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