SOUTH CAROLINA DIGITAL LEARNING PLAN REPORT

FOR THE STATE'S K-12 PUBLIC EDUCATION SYSTEM

DECEMBER 2018

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1) David K. Avant
Designee, Executive Director of the Department of Administration

2) Dr. David Mathis, Deputy Superintendent
Designee, State Superintendent of Education

3) Anthony Padgett, President
South Carolina Educational Television Network

4) Leesa Aiken, Director
South Carolina State Library

5) Dr. Kathryn Lee D'Andrea
Designee, Executive Director of the Education Oversight Committee

6) Pamela Lackey
Appointee, Chairman of the Senate Finance Committee
Relevant experience: Former President of AT&T, Former School Librarian

7) Craig Kinley
Appointee, Chairman of the House Ways and Means Committee
Relevant experience: Telecommunications entrepreneur, SCETV Commission member

8) Dr. Shelly Meyers
Appointee, State Board of Education

9) John B. Wright, Jr.
Anderson County School District 5, Board of Trustees
Appointee, Education Oversight Committee

10) Wanda Thomas Smith
Clarendon County School District One, Board of Trustees
Appointee, Education Oversight Committee

11) Jeff Montgomery
Appointee, Education Oversight Committee
Relevant experience: Computer Science entrepreneur

Stakeholders

The scope of work for the South Carolina Digital Learning Plan Report listed a number of stakeholders, including the committee members identified above. Each stakeholder was contacted via email and/or by phone. Those who responded were interviewed. The following stakeholders contributed to this report:

David K. Avant – Committee Member
Dr. David Mathis – Committee Member
Anthony Padgett – Committee Member
Leesa Aiken – Committee Member
Dr. Kathryn Lee D'Andrea – Committee Member
Pamela Lackey – Committee Member
Craig Kinley – Committee Member
Dr. Shelly Meyers – Committee Member, South Carolina Deans Alliance
John B. Wright, Jr. – Committee Member
Jeff Montgomery – Committee Member
Ellen Saltzman – Clemson University
Dr. Dave Frye – North Carolina State University
Anthony Owen – Arkansas Department of Education
Rosemary Bianchi – Lexington School District 1
Emily Heatwole – South Carolina Department of Education

Additionally, district and school administrators, teachers, students, and parents were informally asked to comment on the current state of digital learning and literacy and provide ideas for the future.

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Executive Summary

In the state of South Carolina, several districts are employing promising initiatives in the area of digital learning, including 1:1 initiatives, alternative instruction pilots for missed school days, and innovative charter schools. However, these initiatives and their findings are often not disseminated across the state and there is a lack of guidance across the state related to a vision and goals related to digital learning, including a lack of a current State Educational Technology Plan (which expired in 2016). According to the 2017-2018 report from the South Carolina K-12 School Technology Initiative "technology has and will continue to transform learning in classrooms throughout South Carolina as students and educators are just beginning to realize the potential online learning opportunities provide. This potential, especially in our most rural and isolated schools, is limited only by the external and internal infrastructure that supports such technology. Ensuring such crucial resources are available for our students, educators and libraries is a challenge, but one that must be addressed." This report addresses issues of infrastructure, human capacity, content and instruction, security, policy and funding, local digital learning initiatives, and the use of alternative methods of instructions for scheduled make-up days.

In order to truly assess the current impact of digital learning across South Carolina and the needs to continue and improve digital learning, a thorough needs analysis needs to be conducted. This report provides the data currently available and accessible but in no way contains all of the information needed to make specific recommendations for funding, policy, and legislation. Data exclude John De La Howe #5205, SC Opportunity School #5206, Deaf & Blind School #5207, Department of Juvenile Justice #5208, and Palmetto Unified #5209 as they skew trends in the data due to the nature and size of the schools, leaving 81 school districts reported. It is meant to provide a starting point for data collection by identifying what information may still be needed, such as fined-grained, classroom level infrastructure information. It also makes recommendations for *Action Steps* in moving forward with the development of a strategic plan for digital learning in South Carolina. The report provides a suggested timeline, responsible parties, and metrics for each *Action Step* in order to enable rapid and strategic action over the next two years as a needs assessment and strategic plan are developed, but assumes a task force will be assembled to spearhead the efforts.

Lastly, it is important that students, parents, teachers, administrators, legislators, etc. develop a truly global perspective of digital learning. As suggested by the Profile of a South Carolina Graduate, a global perspective along with world-class knowledge and skills are vital attributes for being successful in our world. Involving business and industry in the education of our students will be a key step in helping South Carolina move towards global competitiveness.

1. Introduction

In accordance with Proviso 1A.86 of Act 264 of 2018, the Digital Learning Plan Study Committee worked to address seven topics through the South Carolina Digital Learning Plan Report. These topics include:

1) technology, infrastructure, and devices;
2) human capacity;
3) content instruction and assessment;
4) security; regional and state support;
5) policy and funding;
6) local digital learning initiatives; and
7) the use of alternative methods of instruction for scheduled make up

This report is a continuing effort to document the incredible growth in digital learning in the state of South Carolina over the past several years and help determine where gaps may still exist. In order to address the identified topics, data was collected from a variety of sources. As digital learning encapsulates "learning that is supported by digital tools and resources"[1], the data is wide in range and scope.

Each committee member was included for their specific expertise, therefore the first step in the data collection process was to interview each individual. One interesting finding was a variation in the definition of "digital literacy". The following definition summarizes several of the themes identified by the committee members:

> *A person's ability to perform tasks effectively in a digital environment ... includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments." -- Barbara R. Jones-Kavalier and Suzanne L. Flannigan: Connecting the Digital Dots.*

Additional sources of data include surveys conducted by the South Carolina Department of Education (SCDE), reports provided to the state department, and interviews with stakeholders.

The following report details the current status of digital learning in the state of South Carolina in order to provide guidance for the Study Committee to suggest methodologies in order to collect additional data for a well-informed Digital Learning Plan.

[1] http://www.iowaaea.org/about/aea-services/iowas-digital-learning-plan/

2. Recommendations

This section provides overarching recommendations for the improvement of digital learning in South Carolina. Each of the seven key areas identified in Section 1: Introduction contain *Action Steps and Metrics*. The two-year timeline presented with the following recommendations assumes that a Task Force, Committee or other group (henceforth referred to as the Digital Learning Task Force) will be appointed for the purpose of developing a strategic plan for statewide digital learning addressing the recommendations and action steps identified in this report.

1. **A task force should be formed to address digital learning inequity across the state.**
   The task force should be specific to each district, meaning it is comprised of standing members (experts in the field and members of the Digital Learning Plan Study Committee) and district members (district and school administration, teachers, support staff, and students) and works to address how the district will meet and exceed the goals determined for the state. The task force should meet to conduct a thorough needs analysis of each school in the district and co-develop a strategic plan with measurable outcomes to be implemented and assessed by district and state-level stakeholders.

2. **Invest in infrastructure.**
   Equal access to devices and bandwidth to operate them effectively is essential. Infrastructure needs to continue to grow and evolve and each district must be able to invest in ensuring they will be able to meet future demand, not just current demand. This includes, but is not limited to, investigating state-level procurement assistance. A detailed budget request is not advisable with current data. An extensive needs analysis should be conducted, similar to the analysis conducted over the course of a year in North Carolina in which each district was surveyed on a wide range of topics. Guidance from the State Department of Education should be provided to determine state-level goals which will guide district-level goals in order to make best use of recommended funding based on the needs analysis. The Abbeville Lawsuit, see Table 16, is an example that appropriating money will not bring equity to districts. Funds with guidance and assistance need to be provided to all districts. However, the current funding model cannot support minimally recommended needs such as high-speed Internet access in all schools.

3. **Invest in human capacity.**
   Provide professional development for all teachers, staff, and district and school administrators. Leverage existing networks (i.e., SCASA, SCCTM, SC^2, EdTech, CERRA) and IHE partners to help provide training and support. At a minimum, all K-8 teachers should receive training in Computer Science as all have the responsibility of teaching the K-8 South Carolina Computer Science and Digital Literacy Standards. Additionally, resources are available from national organizations such as the International Society for Technology

in Education (ISTE)[2] which provide guidance from recognized standards in teacher professional development and best practices for teaching through Digital Learning Pathways.

4. **Encourage local innovation.**
   Every classroom, every school, and every district is a distinct context with specific needs and a unique culture. Planning and implementing initiatives at the local level is the best way to support innovations. This will require processes, structures, and supports, including funding, at the district level to enable such efforts. Additionally, leveraging current local industry and recruiting for innovative commercialization, particularly in rural areas, has shown promising results in states such as Indiana[3] were industry helped to improve infrastructure.

2.1 Timeline

It is intended that the work of the Digital Learning Task Force would be guided by the following timeline. Metrics for each Action Step are incorporated into the Section of the report in which they are associated. Recommendations in this report that assign a particular action item or work detail to an agency, committee or other entity are made based on the understanding that the action item or work detail fits within the overall mission of the agency, committee or entity. An assumption is made that the agency, committee or entity has the capacity to perform the action item or work detail based on existing resources or resources to be provided.

Table 1. *Timeline for implementation of Digital Learning Recommendations.*
(SCDE-South Carolina Department of Education, SCDA-South Carolina Department of Administration, DLTF- Digital Learning Task Force, EOC- Education Oversight Committee)

Time Period	Details of Work	Recommended Team
Ongoing	1. Communication should be ongoing and consistent to all possible groups (e.g., SCASA, CTE, counselors, conferences). 2. Create and maintain a comprehensive website containing information including all digital learning-related communications, documents, resources, and professional development opportunities (e.g., "one-stop-shop" for all audiences similar to Arkansas' Computer Science Initiative website).	All SCDE employees and state-level stakeholders DLTF
Ongoing	1. Develop a state-reviewed list of software/vendors, including a short list of learning management systems. 2. Vendors should submit crosswalks from product to standards to inform district planning and curriculum selection decisions. Crosswalks and other vendor	SCDE with DLTF members Vendors

[2] https://www.iste.org/learn/professional-learning
[3] https://www.in.gov/iodd/files/RITCI_Final_Report.pdf

	information should be released on the website described above.	
Fall 2019	Modify and employ "Technology Counts" survey using the Indiana Tech Plan Survey and *North Carolina Digital Learning Plan: Digital Learning Progress Rubric for Schools* as guides	SCDE & SCDA with DLTF
Spring 2019	Develop and employ more specific data collection and reporting of school network infrastructure including speed, reliability, and security, such as www.schoolspeedtest.org	SCDE & SCDA with input from the DLTF
SY 2019-2020 then Ongoing	Determine access to Internet needs for every student and then provide resources for students without reliable access (both at school and at home)	SCDE & SCDA with input from the DLTF
SY 2019-2020 then Ongoing	Help schools improve digital infrastructure (based on data collected in above action step) to include high-speed Internet.	EOC, SCDE & SCDA with input from the DLTF
SY 2019-2020	Renegotiate state contract prices for Chromebooks and other devices	EOC & SCDE
SY 2019-2020 then Ongoing	Assemble a committee of state and district leaders to develop policies for: • statewide goals for digital learning • determining equitable technical support • tracking portable and fixed technology assets • renewing and replacing devices • out of school access to technology • viability of state-level bundled Internet services determining needs and guidance for students and staff access to Internet and devices outside of school	EOC, SCDE, SCDA & DLTF
SY 2020-2021	Develop an equitable allotment strategy for technology funds	EOC, SCDE, SCDA & DLTF
SY 2019-2020 then Ongoing	Develop and implement a statewide professional development plan for teachers, coaches, and administrators for digital learning	SCDE & DTLF
SY 2019-2020 then Ongoing	Develop professional learning networks (PLNs) to support teachers (possibly by subject/grade)	SCDE & DTLF
SY 2019-2020 then Ongoing	Establish professional development (PD) opportunities that meet the needs of digital learning initiatives across the state	SCDE & DTLF
SY 2020-2021	Provide guidance for institutions of higher education around digital learning preparation for their education graduates based on best practices	CHE, SCDE & DTLF
SY 2019-2020 then Ongoing	Create and implement professional development for content instruction and assessment	SCDE & DTLF
SY 2019-2020 then Ongoing	Ensure resources are easily accessible for all students and teachers	SCDE & DTLF
SY 2019-2020 then Ongoing	Educate parents on the use of digital tools (i.e., how to ensure their child knows how to submit an assignment in Google Classroom)	SCDE & DTLF

SY 2019-2020 then Ongoing	Coordinate with the K-12 Technology Initiative and districts to determine current levels of cybersecurity and develop plan to improve	K-12 Tech Initiative, SCDA, SCDE & DTLF
SY 2019-2020 then Ongoing	Determine both district level and statewide solutions to cybersecurity issues	SCDA, SCDE & DTLF
SY 2019-2020 then Ongoing	Develop cyber literate students through modules on digital citizenship and safety	SCDA, SCDE & DTLF
SY 2019-2020 then Ongoing	Develop additional funding sources to address infrastructure, teacher professional development, and security	EOC, SCDE & DTLF
SY 2019-2020 then Ongoing	Develop policy around a statewide vision for digital learning	EOC, SCDE & DTLF
SY 2019-2020 then Ongoing	Coordinate with legislators currently pre-filling legislation to amend Act 388 and other state education funding policies	EOC, SCDE & DTLF
SY 2019-2020 then Ongoing	Continue to expand Computer Science education in SC	EOC, SCDE & DTLF
SY 2019-2020	Develop and implement a needs assessment investigating current local initiatives with the purpose of identifying gaps in which future initiatives could be implemented	SCDE & DTLF
SY 2019-2020	Provide a statewide vision for digital learning	SCDE & DTLF
SY 2020-2021	Develop a strategic plan with guidelines to help districts achieve that vision	SCDE & DTLF
SY 2019-2020	Consider district coaches for digital learning	SCDE & DTLF
SY 2019-2020 then Ongoing	Develop state and district dissemination plans (i.e., newsletter, recommended websites or RSS feeds)	SCDE & DTLF
SY 2019-2020 then Ongoing	Foster organic, local solutions to accessibility issues and encourage community, business, and industry participation	EOC, SCDE, DTLF, SC Department of Commerce
Fall 2019	Document and disseminate results from the five pilot school districts developing models for alternative methods of instruction during the 2018-2019 school year	EOC & SCDE
SY 2019-2020	Determine and disseminate statewide guidelines for alternative methods of instruction	EOC, SCDE, DTLF
Ongoing	Continue to explore gaps in infrastructure necessary to equitably use alternative methods of instruction statewide, including alternative methods of connecting students to teachers such as datacasting, rolling study halls, and libraries.	EOC, SCDE, DTLF

3. Background Information

In 2014, the South Carolina Department of Education published the *South Carolina State Educational Technology Plan, Reimagining Education* (link in References) in order to "guide further integration of digital information systems into South Carolina's K-12 education system from January 1, 2014 to December 31, 2016. The central focus of the plan addresses how South Carolina students can most effectively use technology." The plan documented policies and practices from a number of organizations. All of these organizations have since updated their recommended policies and recommended practices, many of which are included in this report (see sections identified in parentheses next to organization name):

- **Universal Service Fund (E-Rate – Section 4. Infrastructure)**
- **Next Generation Content Standards (Section 6. Content Instructions and Assessment)**
- **National Educational Technology Plan (Section 4. Infrastructure)**
- **Southern Regional Educational Board (SREB)**
- **U.S. Department of Education (USED – Section 4. Infrastructure and Section 6. Content Instructions and Assessment)**
- **International Society for Technology in Education (ISTE – Section 5. Human Capacity and Section 6. Content Instructions and Assessment)**
- **Consortium for School Networking (CoSN)**

However, South Carolina has not updated its state educational technology plan and provides little in the way of statewide recommendations and resources. This report documents current data in the 7 key areas identified and recommends next steps towards a statewide strategic plan. This report also documents current research and articles from the media in effort to provide a triangulated perspective.

"Technology first" should never be the goal of digital learning. Extensive research has been conducted in the area of educational technology integration over the past several decades. Many ill-fated initiatives have been focused on technology. Harris, Mishra, and Koehler (2009) discuss five different approaches, including technology-based efforts, and suggest that the "discrepancy between a vision of transformative uses of educational technologies and the more prevalent efficiency and extension applications can be traced to the nature of how technology use in classrooms has been conceptualized and supported (p. 394)". One result of their work was a series of activity type guides[4] to help teachers think through the content, then the pedagogy, and then, if technology would enhance the planned instruction. Their activity guides follow the popular TPACK (Technology, Pedagogy, and Content Knowledge) framework, which is one of several current frameworks including SAMR (Substitution, Augmentation, Modification, and Redefinition), ADDIE (Analyze, Design, Develop, Implement, and Evaluate), and TIM (Technology Integration Matrix). However, in order to integrate technology, technology must first be an available tool for educators and students.

[4] Available at http://activitytypes.wm.edu/index.html

An area not addressed by the frameworks identified above is the amount of time students should spend using devices and how the use of devices may change the student experience. A recent New York Times article, entitled “The Digital Gap Between Rich and Poor Kids Is Not What We Expected” (Bowles, 2018), discusses new research in equitable access to devices. The article describes cases in which elite schools are turning away from technology and lower income schools are trying to increase technology. Research shows that minority, low-income students spend almost 2 hours more in screen time per day than their higher income peers. As stated previously though, amount of screen time per day is often an unnecessary discussion as devices and connectivity are not available for use.

The largest barrier to digital learning is access to high-speed Internet. Another recent article in the New York Times, entitled “Digital Divide Is Wider Than We Think, Study Says” (Lohr, 2018) suggests that the broadband coverage reported by the FCC may not be accurate in all areas of the United States. Microsoft conducted an independent study demonstrating lower rates of connectivity. While the lack of connectivity could be detrimental to an area’s economy and education, the greater issue with inaccurate statistics is that policy and funding are based on the numbers reported by the FCC.

Lastly, Inside Higher Ed published an article entitled “Reflecting on 2018, and (Tentatively) Projecting the Future”. The article discusses a year-end recap of digital learning and makes predictions for the future. While the article was focused on institutions of higher education, many findings also relate to K-12 education. For example, AI-enabled video platforms may have the ability to extend personalized learning. In 2018, there was a tremendous increase in open education resources (OER), an “evolution of many digital teaching and learning tools and pedagogical practices”, and an “increase in the research on how the digital environment is impacting our brains…[such as] Wolfe’s (2018) *Reader, Come Home*…offers an overview of the way technology has changed the ways that we process language” (Lieberman, 2018).

In addition to infrastructure, decisions regarding digital learning depend on a number of factors. While this report focuses on the 7 key areas identified in Section 1: Introduction, it will also provide examples of initiatives, both successful and unsuccessful, in an attempt to learn from prior work.

4. Infrastructure

Infrastructure is the backbone of any successful system. Infrastructure touches almost every aspect of schools and the people that occupy them. It is for this reason that this is the most extensive section of the report and surveys both the tangible and intangible needs of the districts. According to *Future Ready Schools*, there are four areas of infrastructure that schools need to address: devices, networks, personnel, and a plan to revise/renew resources. The sections below provide the current status of each of these areas.

A 2014 report by the US Department of Education (US DOE) states high-speed internet in schools is one of the greatest needs for connected learning. Also in 2014, the Federal Communications Commission released a *Second E-Rate Modernization Order* to better guide schools in modernization efforts and provide 5 years of funding to help schools purchase affordable high-speed connectivity. The US DOE "recommends a minimum connectivity speed of 100 Mbps and a target speed of 1 Gbps per 1,000 students for schools by 2018 (p. 17, US Department of Education, 2014)". According to Table 11 in Appendix A, the highest connectivity speed documented was 9,500 Mbps but most school averages were well below 1,000 Mbps. While not strictly additive, if one added together all of the connectivity speeds reported across the state, the total would be 663,810 Mbps (663.81 Gbps). Based on the recommendations of the US DOE, a state the size of South Carolina should have had at least 757,000 Mbps (757 Gbps) by 2018. In addition to broadband coverage through cable, DSL, and fiber-optic services, Spectrum, AT&T and other carriers offer free Wi-Fi Hotspots around the state for their customers. Figure 1 below shows where Spectrum Wi-Fi Hotspots are currently located.

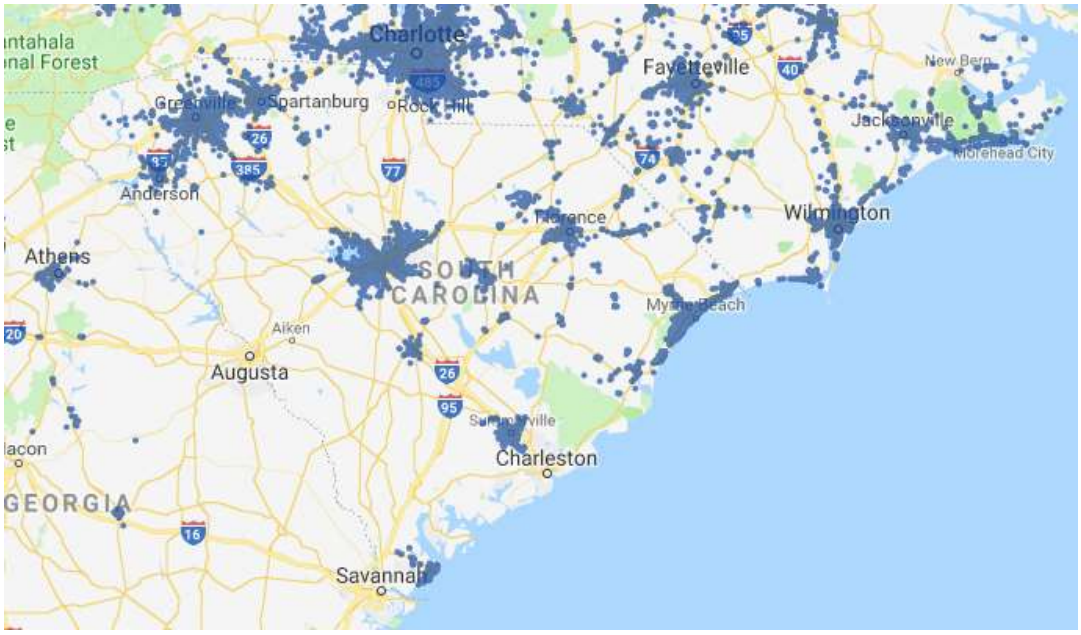


Figure 1. *Spectrum Wi-Fi Hotspots in South Carolina*[5].

[5] Retrieved from: https://www.spectrum.com/free-wifi-hotspots/south-carolina/abbeville

Figure 2 below shows the current status of broadband[6] in South Carolina at 100 mbps. The darker red depicts counties with higher percentages of access while lighter red depicts less access. For example, 97.1% of citizens in Richland county have access to broadband 100 mbps or faster but only 11.3% of citizens in Newberry county have similar access.

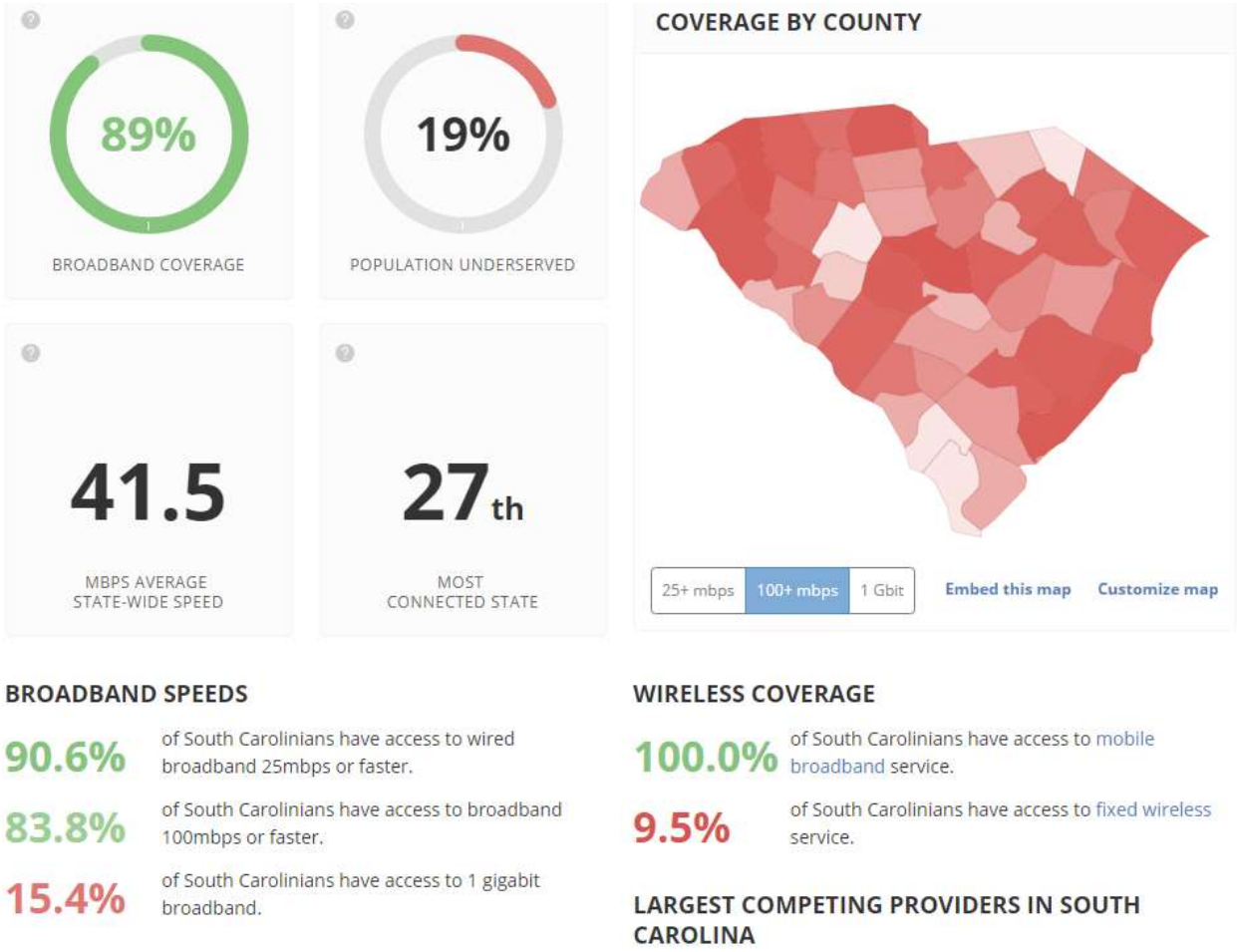


Figure 2. *Screenshot of broadband.com summary of South Carolina.*

High-speed Internet is a vital tool in schools. According to the US Department of Education's National Education Technology Plan "technology is at the core of virtually every aspect of our daily lives and work, and we must leverage it to provide engaging and powerful learning experiences and content, as well as resources and assessments that measure student achievement in more complete, authentic, and meaningful ways (p. ix)". One example of the need for high-speed Internet is online assessment. In South Carolina, the General Assembly now requires 100 percent online administration of all summative assessments (SC Ready and SC PASS) for grades three through eight for the 2018–19 school year. S.C. Code § 59-18-325(C)(1)(g). Proviso 1.76 recognizes that there may be circumstances that make the online assessment compliance extremely difficult or burdensome to a school or district. As a result, districts and individual public

[6] From https://broadbandnow.com/South-Carolina

charter schools may ask the State Board of Education (SBE) for a waiver to allow assessments to be administered via paper and pencil. To date, 44 waivers have been received.

4.1 Infrastructure for schools and school districts

Infrastructure is a difficult component of a school or school district to assess as it not only refers to hardware and software, but also functionality. According to *Future Ready Schools*, infrastructure needs to consider include:

- Adequacy of Devices; Quality and Availability
- Robust Network Infrastructure
- Adequate and Responsive Support
- Formal Cycle for Review and Replacement

The following sections discuss the current status of these four areas in the state of South Carolina.

4.1.1 Adequacy of Devices

Statistics reported by each school district (Table 14 in the Appendix) show that all but two districts indicated that 91-100% of classrooms in all district schools have wireless access. Speed and reliability of access was not reported but anecdotally is not high. Additionally, only 17 of 83 school districts (20%) reported a ratio of higher than 2 students per device (see Figure 3 below and Table 15 in the Appendix). While most schools have a variety of devices, according to the 2017 Technology Counts Survey, more than half of the $6,700,000 spent of devices was used for either laptops or Chromebooks. Approximately $1.6 million was spent on desktops and an additional $868,000 on Window Tablets. Table 12 in the Appendix details the age of the devices reported by the districts.

In 2016, through the Mobile Device Access and Management (MoDAM) Initiative, the South Carolina K-12 School Technology Initiative and the South Carolina Department of Education (SCDE) awarded additional funding “for school districts to procure high-speed mobile internet service for students who lack such internet service at home and are participating in a course of study that requires such access[7]” to the following districts; Anderson School District One, Bamberg County School District 2, Berkeley County School District, Blackville-Hilda Public Schools, Chester County School District, Fairfield County School District, Florence School District 1, Florence County School District 2, Greenville County Schools, Hampton County School District 2, Jasper County School District, Lancaster County School District, Orangeburg Consolidated School District 4, Orangeburg Consolidated School District 5, School District of Pickens County, Richland School District Two, Spartanburg School District 1, Spartanburg School District 2, Union County Schools, and Williamsburg County School District.[8] The winners were announced in April 2016 but no additional follow up information could be found.

[7] https://ed.sc.gov/newsroom/school-district-memoranda-archive/mobile-device-access-and-management-initiative-modam/mobile-device-access-and-management-initiative-modam-memo/
[8] Retrieved from: https://sck12techinit.sc.gov/erate/Pages/NewsandDeadlines.aspx

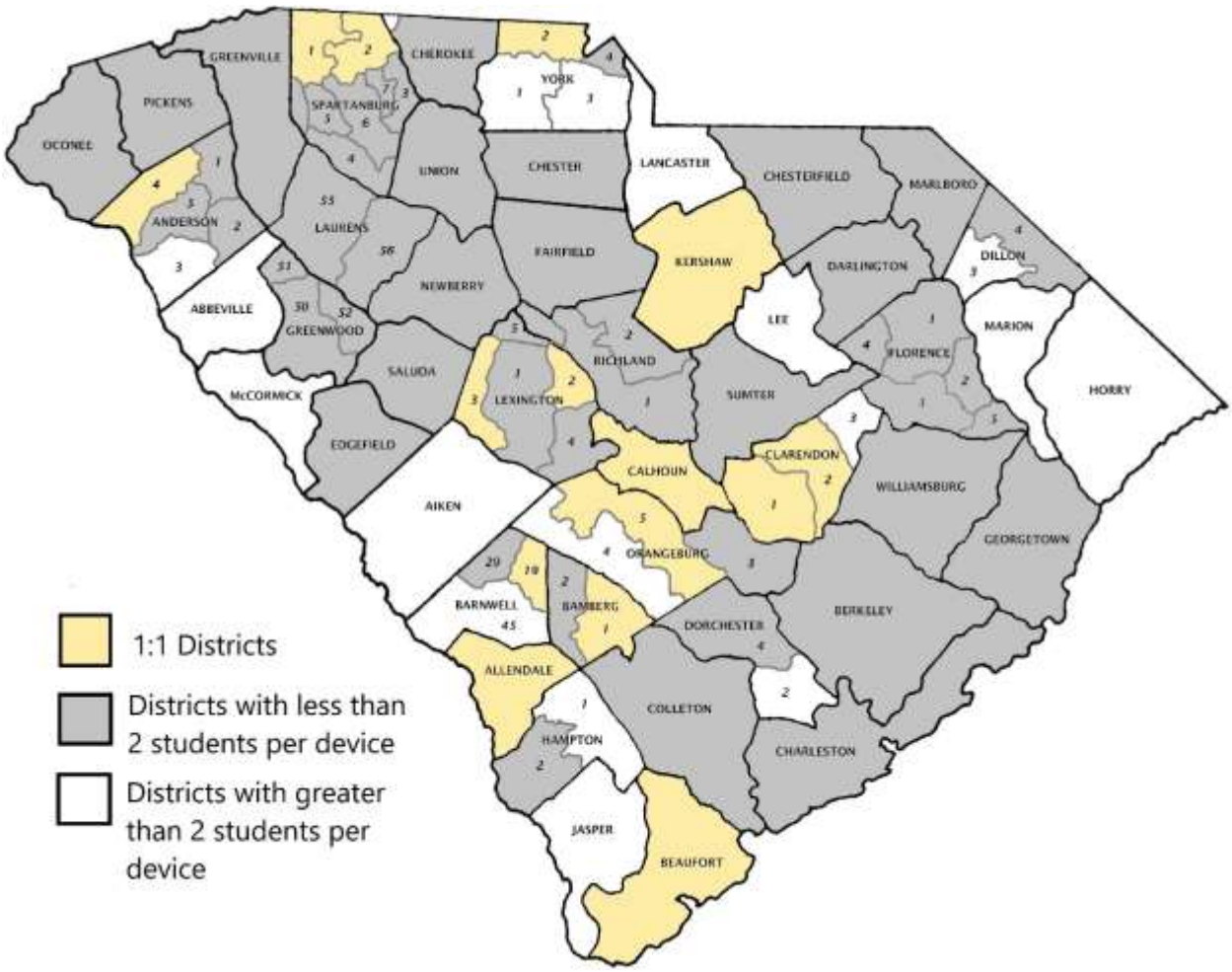


Figure 3. *Ratio of students to devices by district (80 districts displayed).*

4.1.2 Robust Network Infrastructure

As school districts move towards online testing, 1:1 device initiatives, and personalized learning, network infrastructure is a vital component to ensuring successful implementation. According to Table 14 in the Appendix, all but two school districts have wireless access in all classrooms across the district. However, teachers report slow and unreliable connections in many schools. Districts are in need of methods and resources for determining network vulnerabilities. Across the state, districts reported spending a total of $5.6 million on networking infrastructure as shown in Table 2. In addition to wireless access, Figure 4 and Table 12 below show that half of school districts reported that they are up-to-date with regards to firmware and security patches.

Table 2. *Funds spent on network infrastructure reported in the 2017 Technology Counts Survey (n=34 districts reported, Abbeville Plaintiffs).*

Funding Category	Amount Spent Statewide
Access Points	$ 699,599.56
Routers	$ 62,102.51
Switches	$ 1,637,739.22
Bandwidth	$ 33,267.33
Cabling	$ 522,459.03
Disaster Recovery Hardware	$ 177,463.53
Disaster Recovery Software	$ 28,102.00
Disaster Recovery Services	$ 37,862.94
Installation / Testing Services	$ 133,871.89
Security Audit Services	$ 3,402.00
Security Hardware	$ 193,101.29
Security Software	$ 79,796.33
Security Consulting (Policies & Implementation) Services	$ 169,622.00
Proactive Performance Monitoring	$ 70,223.00
Server Hardware	$ 314,203.65
Server Software	$ 11,627.00
Server Refreshes	$ 3,332.00
Other	$ 1,747,117.04

Table 3. *Number of functional server devices at the district and school level, by age (as of the end of current school year). (2016 Technology Counts Survey, n=81 districts reported)*

	Total Across Districts	Average Across Districts
Total number of servers less than 1 year old?	480	6
Total number of servers between 2 and 3 years old?	1680	20
Total number of servers between 4 and 5 years old?	806	9
Total number of servers 5 years and older?	1150	13

Table 4. P*ercentage of network equipment, in both schools and at the district level, that is up-to-date with the latest firmware and security patches.* (2016 Technology Counts Survey, n=82 districts reported)

Percentage Categories	Number of Districts
0-25%	8
26-50%	13
51-75%	20
76-100%	41

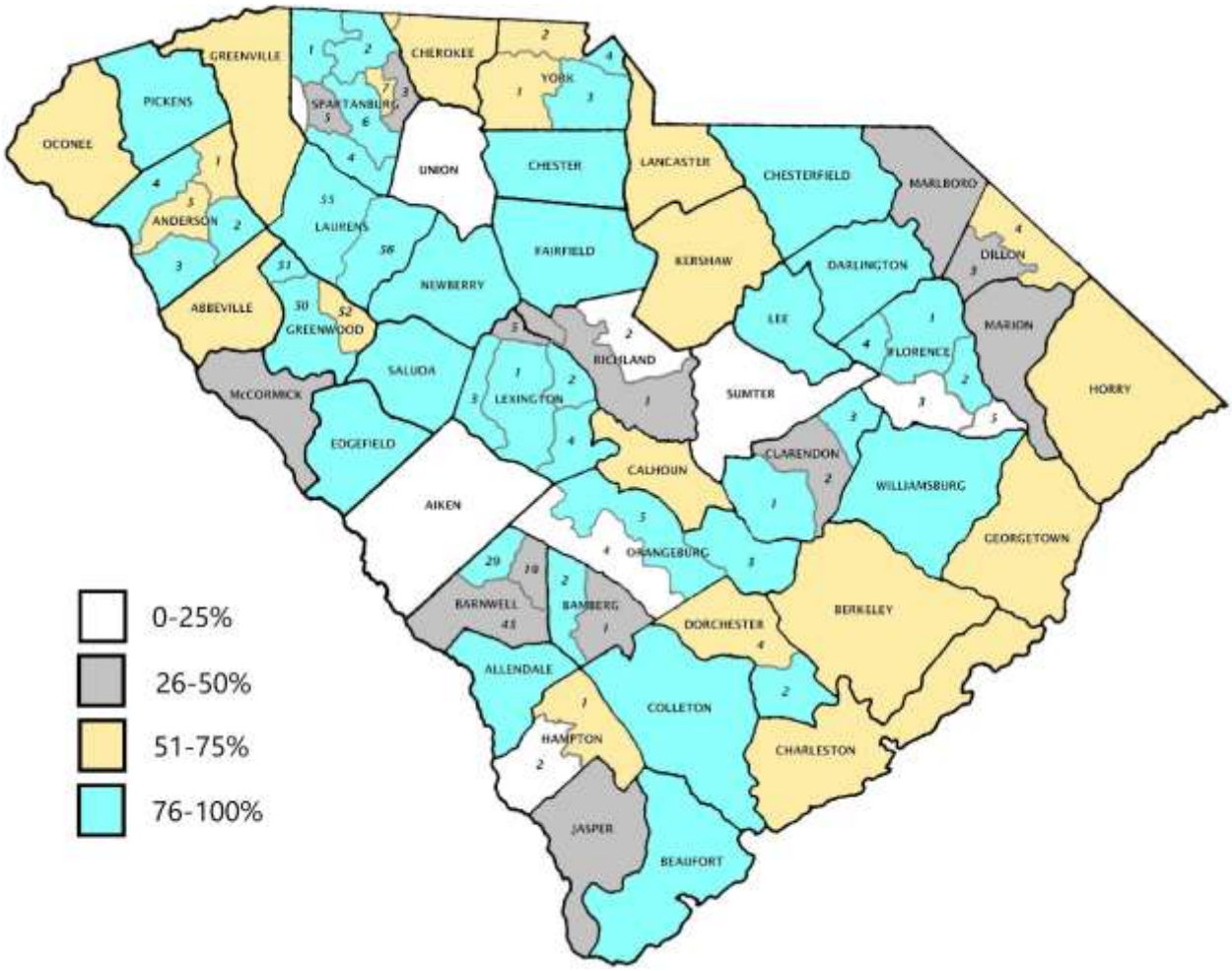


Figure 4. *Percentage of network equipment, in both schools and at the district level, is up-to-date with the latest firmware and security patches (2016 Technology Counts Survey, 80 districts displayed).*

4.1.3 Adequate and Responsive Support

Sufficient support to maintain infrastructure is an important aspect of school district success. This involves technical support for students, teachers, and staff in order to minimize downtime and maximize student learning. School and district support personnel need to be maintained in both number of positions and level of funding, ideally increased, and continuously trained to support constantly evolving technology. Table 4 shows that not all districts have personnel designated for technology support roles. Anecdotally, teachers report that support is often not available when it is needed and that tech-savvy teachers in the building are frequently called on to provide technical support throughout the school day for devices ranging from printers and copiers to 3D printers.

Table 5. *Number of district personnel in technology support roles (n=81 districts).*

	# of Districts with Personnel in the listed category	Statewide Total
Number of Staff (FTE) : IT supervisors / administrators	77	151
Number of Staff (FTE) : Help Desk/ Break-Fix Support technicians	69	441
Number of Staff (FTE) : Developers of administrative systems	18	36
Number of Staff (FTE) : Developers of instructional systems	15	33
Number of Staff (FTE) : Information Technology security	23	38
Number of Staff (FTE) : Other staff in Information Technology not listed above, including web development, database administration, networking staff, infrastructure staff, technology trainers	52	257

Table 6. *Districts offering professional development opportunities in technology (n=81 districts).*

	# of Districts Offering PD
Does the technical support staff receive ongoing professional development in the technologies they support?	50
Does the district staff receive ongoing professional development in the technologies they use?	62

Teachers and school/district staff report limited access to quality professional development. They report that vendor based professional development is often not specific enough to the district in which they work to be useful (i.e., site is blocked by filter) and district/state based professional development does not reflect up-to-date technologies. Other entities across the state such as ETV, Palmetto State Teachers Association, and colleges/universities also work to provide timely professional development for teachers.

4.1.4 Formal Cycle for Review and Replacement

While South Carolina does not have a formal state technology plan, each district is required to file a plan with the state. Each district must develop its own process for review and replacement due to the large number of factors that are district (and school) specific (see Section 8.2.1 for additional information). Below is an excerpt from Berkeley County School District's Technology Plan (2017) regarding their efforts to formulate a proposal:

> *"The Office of Technology is working on creating a refresh cycle that will allow us to replace outdated equipment and software every five years. The district continues to apply for grants, participate in E-Rate programs, and utilize other*

funding sources as they come available to help refresh existing technologies in the classrooms however current funding levels are not sufficient to accomplish this" (p. 17, BCSD Technology Plan).

Despite the funding for technology identified above, most districts do not have sufficient funding to refresh existing technology, just like Berkeley County detailed above. Information taken from the Procurement Services website[9] may be found in Appendix C and provides links to current contracts. Based on the price quoted to average buyers, several devices are not cheaper through the provided statewide contracts. Where possible, it would be beneficial to all districts for these contracts to be renegotiated.

4.2 One-to-One Device Initiatives

According to data from the Technology Counts Survey, 15 out of 83 school districts (18%) across the state of South Carolina had achieved 1:1 learning in every school in the district. Several other districts are close to achieving 1:1 learning based on the number of devices currently in schools and the number of schools with 91-100% of students served by 1:1 learning. Most districts have started to implement 1:1 learning in secondary schools first. However, district charter and magnet schools and the state charter school district do not seem to have the same access as traditional secondary schools. See Figure 1 below for districts with fully implemented 1:1 initiatives and Table 14 in the Appendix for a more detailed account of school access to wireless and 1:1 learning initiatives. Additional information regarding local district initiatives, including 1:1 initiatives, will be discussed in Section 9 of this report.

Anderson School District Four is an example of a district that has been committed to 1:1 digital learning. The district's Instructional Technology Plan[10], dated April 10, 2015 and spanning 2014-2019, details network infrastructure specifications and implementation of 1:1 Chromebooks through the 1:World Initiative for grades 3-12 starting in the 2015-16 school year. The district has since moved 1:1 digital learning into all classrooms in all schools.

4.3 Other types of technology (e.g., CTE courses)

The SCDE is in the process of revising their Career and Technical Education course offerings and standards. This process will create new courses that may require additional digital technology. For example, for High School Computer Science, a new course grid is currently being developed that would involve four levels of robotics courses, necessitating additional digital equipment. This is a large revision from the currently approved course list and current programs (https://drive.google.com/open?id=1zzHidkfEP4psxlHPLOb6gxyoiXcu4_sB).

[9] https://procurement.sc.gov/agency/contracts/information-technology
[10] Retrieved from https://ed.sc.gov/scdoe/assets/file/programs-services/185/documents/Anderson4TechPlan.pdf

Figure 5. *Highlighted school districts have 91-100% of students in all schools served by 1:1 learning (80 districts displayed).*

4.4 Summary

Several school districts across the state have the physical infrastructure (adequacy of devices) to support 1:1 learning in most classrooms. But guidance needs to be provided at the state level as to the goals for infrastructure (if that includes 1:1) and the resources and support that will be provided. According to Table 12, many of these devices are aging (greater than 3 years old) and may soon need to be replaced. Figure 5 and Table 14 show that all but two districts statewide report that 91-100% of classrooms have wireless access, but the bandwidth reported at each school may not be adequate to effectively make use of such connection. A deeper dive into the reliability of teacher/student access to the Internet would be beneficial in determining the robustness of the network infrastructure. Most districts have personnel in place and professional development for that personnel to provide adequate and responsive support but this is an area of continuing need. Infrastructure depends on timely support and Table 5 shows there may not be enough coverage within each district. Lastly, as technology begins to age, every school district needs a detailed plan for formal review and replacement of devices, ideally with state contracts at a lower rate. The reason most often cited as to why these plans are not in place is lack of consistent funding dedicated to hardware.

4.5 Action Steps and Metrics

Action Steps	Metrics
Modify and employ "Technology Counts" survey using the Indiana Tech Plan Survey and *North Carolina Digital Learning Plan: Digital Learning Progress Rubric for Schools* as guides	Detailed data report from schools and districts, including ability to track progress towards target
Develop and employ more specific data collection and reporting of school network infrastructure including speed, reliability, and security, such as www.schoolspeedtest.org	Report on network infrastructure and areas of vulnerability and improvement
Determine access to Internet needs for every student and then provide resources for students without reliable access (both at school and at home)	Needs assessment from each district
Help schools improve digital infrastructure (based on data collected in above action step) to include high-speed Internet.	Annual district technology reports
Renegotiate state contract prices for Chromebooks and other devices	Vendor contracts in place for devices
Assemble a committee of state and district leaders to develop policies for: • statewide goals for digital learning • determining equitable technical support • tracking portable and fixed technology assets • renewing and replacing devices • out of school access to technology • viability of state-level bundled Internet services • determining needs and guidance for student and staff access to Internet and devices outside of school	Memorandum(s) or report(s) providing guidance to districts and schools
Develop an equitable allotment strategy for technology funds	RFP(s) for districts

5. Human capacity

Human capacity is the change agent in a digital learning plan. According to the US Department of Education (2014), "in successful implementations, superintendents lead the transition to connected learning (where students and teachers have access to people and resources to improve learning whenever they need it) and they ensure districts build high-level leadership teams (or call on existing ones) to develop a districtwide vision for how technology supports educational goals and garner staff and community support. In addition to leadership and support from a superintendent, a CTO or CIO offers deep technology expertise, and a chief financial officer actively pursues funding options and opportunities (p. 11)". While most districts have a technology plan, few include all recommended elements or have the necessary supporting personnel as shown in Table 4. Additionally, changes to the state's graduation requirement for Computer Science will necessitate further modifications to personnel, professional development, and strategic plans.

In 2017 and 2018 respectively, the State Board of Education approved the K-8 Computer Science and Digital Literacy Standards (K-8 CS & DL standards) and the Computer Science and Digital Literacy Standards for High School (HS CS & DL standards, see links below).

K-8: https://drive.google.com/open?id=1mrRd21zx7IKHVAvgclKaaK5a_V_bsZnu
HS: https://drive.google.com/open?id=1L21qpWKmMpzJLoF8qqEhgXG-FvUnVR5n

According to the SCDE, the K-8 CS & DL standards are the responsibility of all K-8 teachers to provide instruction on. These new mandates and standards necessitate statewide professional development.

5.1 Computer Science and Digital Literacy Standards

In March 2018, the graduation requirement for Computer Science changed with the deletion of the statutory requirement for keyboarding as a high school credit through legislative action S 462[11]. This change will require a trained Computer Science teacher at every high school across the state. Accompanying these change efforts, the legislature has been working to pass H.3427[12] requesting additional changes in Computer Science education. In the absence of the legislation, the SCDE has made efforts to support a statewide initiative by hiring an education associate for Computer Science to support K-8 efforts and provide professional development, in addition to completing standards writing for grades K-12.

Complementing the efforts by the SCDE to train K-8 teachers, several institutions of higher education have been working to provide professional development for high school Computer Science in preparation for changes to the graduation requirement. To

[11] https://www.scstatehouse.gov/query.php?search=DOC&searchtext=462&category=LEGISLATION&session=122&conid=11861940&result_pos=0&keyval=1220462&numrows=10

[12] https://www.scstatehouse.gov/query.php?search=DOC&searchtext=3427&category=LEGISLATION&session=122&conid=11862060&result_pos=0&keyval=1223427&numrows=10

date, 91 high schools have a trained CS teacher through professional development hosted at The Citadel and CIT in Columbia through funding from Code.org and Google. Clemson trained an additional 10 teachers in Summer 2018 through their NSF grant using the UTeach curriculum (see their data in table below). Excluding the Clemson trained teachers due to lack of data, Figure 6 demonstrates that primarily teachers from larger cities elected to attend the trainings. In the 2016-2017 school year, only 48 high schools in SC offered an AP Computer Science course (either AP CS A - 12% or AP CSP - 8%[13]).

Figure 6. *High School Computer Science teachers trained from 2016-2018.*

In addition to the teachers trained by The Citadel and the Carolina Institute of Technology (CIT), Clemson University received a Researcher-Practioner Partnership grant from the National Science Foundation (NSF) to provide professional development in ECS (Exploring Computer Science) and AP CSP (AP Computer Science Principles). The list below documents the schools and school districts impacted by the professional development.

[13] Retrieved from https://code.org/advocacy/state-facts/SC.pdf

School District	School
Oconee County	Hamilton Career Center
Lexington School District One	Pelion High School
Lexington School District One	Lexington Technology Center
Pickens County School District	Easley High School
Lexington School District One	Gilbert High School
Lexington County School District One	White Knoll High School
Pickens County School District	Liberty High School
Saluda	Saluda High School
Bamberg 2	Denmark-Olar High
Berkeley	Stratford HS
Charleston County School District	Wando High School
Lexington 1	River Bluff HS

Lastly, The Citadel also received a grant from NSF. Their grant helps STEM teachers infusing computing into their current curriculum in order to broaden access to computing for all students.

List of SCDE provided PD related to computing:

Summer 2018 3D Printing PD: https://www.richlandone.org/cms/lib/SC02209149/Centricity/Domain/131/OSL%203D%20Printing%20Summer%20Institute%202018%20Memo.pdf
Fall/Spring 2018-2019 K-8 CS PD: https://ed.sc.gov/newsroom/school-district-memoranda-archive/computer-science-grades-k-8-professional-learning-opportunity-fall-summer-2018-19/computer-science-grades-k-8-professional-learning-opportunity-fall-summer-2018-19-memo/
Similar PD in Spring 2018: https://ed.sc.gov/newsroom/school-district-memoranda-archive/computer-science-grades-k-8-professional-learning-opportunity/computer-science-grades-k-8-professional-learning-opportunity-memo/

5.2 Teacher Technology Training

In addition to Computer Science and Digital Literacy standards, teachers are responsible for using a wide array of technology throughout the course of their instructional day. These may include some or all of the examples in Table 7.

Table 7. *Examples of tasks with related technology in a typical school day.*

Task	Example Technology
Multiple digital devices	laptop, iPad, tablet
Software for attendance and/or grades	PowerSchool
Assignment management	Google Classroom
Word processing	Microsoft Word, Google Docs
Learning management	Schoology, Moodle, Canvas
Classroom Management	ClassDojo
Class/Parent Communication	RemindMe
Email	Microsoft Outlook, Gmail
Content Presentation	SmartBoard, PowerPoint, NearPod
Show Video	TeacherTube
Student Product Creation	FlipGrid, Canva
Assessment	Socrative

While many teachers often learn new technologies on their own or from their peers, professional development is available through local school districts, VirtualSC, ETV, and vendors. However, unless offered through a district designated professional development day, teachers often attend trainings on Saturdays, in the evenings, and/or other non-work times.

5.3 Summary

Professional development is key for successful implementation of a digital learning plan. It must be ongoing, embedded in the context of the district, differentiated for a wide range of experiences, and extend beyond classroom teachers. School and district level coaches and administrators also need to have expertise with digital learning.

5.4 Action Steps and Metrics

Action Steps	Metrics
Develop and implement a statewide professional development plan for teachers, coaches, and administrators for digital learning	Documented plan
Develop professional learning networks (PLNs) to support teachers (possibly by subject/grade)	List of PLNs within and across schools and districts
Establish professional development (PD) opportunities that meet the needs of digital learning initiatives across the state	Varied list of PD opportunities
Provide guidance for institutions of higher education around digital learning preparation for their graduates	A checklist of skills determined by Digital Learning Task Force

6. Content Instruction and Assessment

In December 2018, the White House released a report from the Committee on STEM Education entitled *Charting a Course for Success: America's Strategy for STEM Education*[14]. The report details several pathways to success including blending successful practices and building computations literacy. Within the pathway for building computational literacy, there are three objectives:

- Promote Digital Literacy and Cyber Safety
- Make Computational Thinking an Integral Element of All Education
- Expand Digital Platforms for Teaching and Learning

The report goes on to state that "just as literacy was a critical skill that led to better opportunities in previous centuries, digital literacy is critical for people to be successful in today's society. Digital literacy empowers people with the tools to find and discern valid information, to use data for answering questions, and to share ideas and promote collaboration. Cyber safety, a component of digital literacy involving the responsible use of information and communication technologies, including new technologies like cryptocurrency, promotes practices that all learners, workers, and members of the public should know when using digital tools (p. 22)". Digital literacy is not just a South Carolina effort, but a nationwide necessity.

6.1 Examples of Content Instruction and Assessment

When contemplating the use of technology in their classrooms, many teachers consider feasibility, ease of use, and functionality in conveying information. For example, PowerPoint revolutionized teaching in that information could be presented to students using digital content with transitions, animations, and exciting backgrounds. However, shifting their classroom to become more student-centered is often not a major consideration when planning technology use. In Figure 7 below, the text from a 2011 article in Science Scope entitled "More than Just the Technology" was copied into Wordle to create the word cloud below. The word cloud shows the frequency of word use by word size in the cloud. So, the word "students" was the most frequently used word in the article (used 42 times), suggesting the importance of considering students in our instructional technology decisions. This is a potential shift in focus for technology integration.

[14] https://www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf

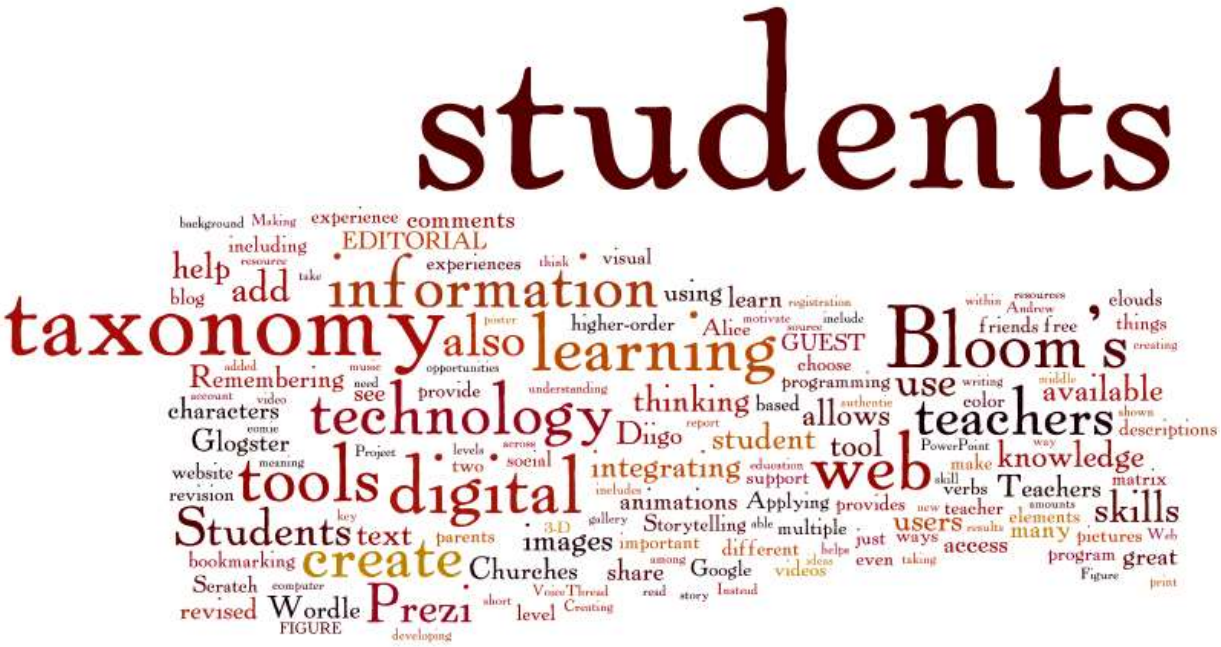


Figure 7. The text from "More than just the technology" by Lightle (2011) copy and pasted into Wordle.

A number of technologies have been created that give students greater ownership and responsibility over their learning. The table below lists some that are easy to integrate in any classroom, many through a Google login. Adding just one new technology a semester can dramatically increase student engagement in your class without much extra work on the part of the instructor. This is a limited list and only meant to serve as an example for this report. The South Carolina Department of Education along with the Digital Learning Task Force should consider creating an evolving list of vetted technology resources for teachers similar to the one below.

Current Technology or Activity	Example Technology to Consider	Description of Technology to Consider
Presentation (e.g., PowerPoint)	nearpod	Nearpod adds student response capabilities to a presentation.
Formative Assessment (e.g., clickers)	socrative 2.0 Kahoot!	Socrative and Kahoot allow for interactive student quizzes that are automatically graded by the system. Kahoot is more game style while

		Socrative has a great tracking system.
Remediation Software	KHANACADEMY	Khan Academy has expert created content in all subject areas. Lessons can be assigned to specific students and tracked through the online system. This is a great tool for filling in holes in students' knowledge.
Concept Mapping/Infographics	Canva PIKTOCHART Picture the Difference popplet	Canva allows for quick easy graphic design for Venn Diagrams and other information organizers. Piktochart helps create infographics and other presentations. Popplet is a concept mapping tool.
Accessing Prior Knowledge	padlet	Padlet allows for easy collaboration and storing of ideas. Students can respond to questions or post information on a topic that can be seen virtually by the entire class from anywhere.

SCETV, the State Library, and Learning.com are among a multitude of resources available to teachers for content learning and assessment, but have created SC specific versions of some content. The key for content instruction and assessment is ensuring that teachers are aware of resources, have time to plan with other teachers incorporating similar resources, and professional development to help teachers employ resources, instruction, and assessment effectively to meet their learning outcomes.

In addition to providing resources, we need to help teachers and administrators understand what quality digital learning "looks like". This would primarily be accomplished through professional development. However, a school or district level coach would be an invaluable resources to provide wrap around support for teachers that do not always have time to explore the ever-changing landscape of digital learning. An example rubric provided to pre-service teachers at Valdosta State University may be found at https://www.valdosta.edu/academics/general-education-council/documents/edurubrics.pdf

6.2 Summary

As state in the previous section, professional development is key for successful implementation of a digital learning plan. It must be ongoing, embedded in the context of the district, differentiated for a wide range of experiences, and extend beyond classroom teachers. However, students and teachers must also have freely available access to the tools and resources needed to carry out digital learning. This means unblocked access to websites for education, a resource list that helps teachers to determine the best tools for their students, and help with educating parents in the use of tools so that learning may continue at home.

6.3 Action Steps and Metrics

Action Steps	Metrics
Create and implement professional development for content instruction and assessment	PD offerings
Ensure resources are easily accessible for all students and teachers	Online library of resources (posted on each district website)
Educate parents on the use of digital tools (i.e., how to ensure their child knows how to submit an assignment in Google Classroom)	Artifact of parent education

7. Security

Security, particularly cybersecurity, is a high priority in most digital environments, especially those containing sensitive, personal data. As schools house data for minors, security policies have been developed for the state of South Carolina to ensure safety and privacy.

According to the State Department of Education's website (https://ed.sc.gov/data/data-security-privacy/policies/):

> *The development of security policies and standards is a critical step in setting the direction and framework for an information security program. These polices are designed to improve the security stance and will align information security with South Carolina Department of Education's mission, goals, and objectives.*
>
> *Policies are provided in MS Word and include the following:*
>
> Access Control Policy
>
> Acquisitions Development and Maintenance Policy
>
> Asset Management Policy
>
> Business Continuity Management Policy
>
> Data Protection and Privacy Policy
>
> HR and Security Awareness Policy
>
> Information Security Program Master Policy
>
> IT Compliance Policy
>
> IT Risk Strategy Policy
>
> Mobile Security Policy
>
> Physical & Environmental Security Policy
>
> Risk Management Policy
>
> Threat & Vulnerability Management Policy

As school and district resources become more digital, cybersecurity becomes a vital responsibility for everyone in the school/district. A persistent cybersecurity joke, mostly because of the inherent truth in the statement, is that the greatest threat to security is human error. While appropriate hardware and software are important, training staff and students is also a key aspect of cybersecurity. For example, the National Technology Education Plan recommends that teachers be included in content filtering, as Internet filtering is difficult, especially in schools, and IT staff often are not aware of what is needed. Teachers struggle with access to software that will help them monitor their

students and modify filters as needed. For instance, GoGuardian is a software that allows teachers to view what each student is viewing on their device and take action on their device as needed, such as closing a web browser, sending the student a message, or disabling the device entirely.

The survey in the table below shows self-reported district responses to a number of questions related to security/cybersecurity. Some questions, such as “How often is data backed up?”, reveal issues at the administration level, other questions, such as “How often are passwords changed?”, is an issue related to training. The survey below shows a great need to increase efforts in cybersecurity statewide.

Table 8. *District responses to security related questions.* (2016 Technology Counts Survey, n=81 districts)

	# of Yes Responses	# of No Responses
Is all confidential or personally identifiable information (PII) encrypted on servers?	27	55
Does your district require data encryption on all district/school portable devices?	4	78
Does your district allow sensitive data to be downloaded to portable devices?	38	44
Does your district allow the use of external storage devices (i.e. USB/thumb drives, portable hard drives, etc.)?	80	2
Have you installed a SSL Certificate for the PowerSchool Server?	75	7
Additionally, is filtering provided individually on each internet enabled district level computing device?	57	25
The district's Internet Safety Policy includes:		
Online activities of minors while under school jurisdiction is monitored for appropriate use.	81	1
Safe and secure use by minors of direct electronic communications (email, chat rooms, etc.) while under school jurisdiction, is assured.	76	6
Unauthorized online access, including "hacking" and other unlawful activities, is prohibited and stated in policy.	81	1
Unauthorized disclosure, use and dissemination of personal identification information regarding minors is prohibited and stated in policy.	81	1
Minors are educated about appropriate online behavior, including interacting with other individuals on social networking websites and in chat rooms and cyber-bullying awareness and response.	80	2
At least one public hearing or meeting occurred to address the proposed Internet Safety Policy.	78	4
Is access to servers' physical environment secured?	72	10
Are all portable computing devices physically secured both while in use and in storage?	38	44
Does the district have a documented Access Control Policy?	33	49
Has the district documented access control procedures and associated access controls (e.g. new hire, transfer & terminated user process,	38	44

obtaining privileged access, remote user access, password procedures, third-party access, etc.)?		
Has the district developed procedures to administer privileged user access based on a Role Based Access Control (RBAC) model?	42	40
Does the district use Active Directory individual accounts?	79	3
Does the district use Active Directory group accounts?	72	10
Does the district use Active Directory system or application accounts?	68	14
Are access requests for information systems a documented procedure within the district?	40	42
Is the activity of the guest/anonymous or temporary accounts monitored?	61	21
Does the district control, monitor and report privileged accounts periodically?	50	32
Has the district developed a Vulnerability Assessment Policy?	13	69
Does the district scan for vulnerabilities within information systems and hosted applications at least monthly?	46	36
Has the district determined a risk ranking strategy for identified vulnerabilities?	15	67
Does the district conduct penetration testing exercises on an annual basis (internal resources or third-party teams are acceptable)?	21	61
Has the district developed an information security incident response policy?	21	61
Does the district have an information security incident response team?	30	52
Does the district have a process in place for personnel to report information security incidents?	57	25
Has the district determined to whom the information security incidents will be shared and reported (e.g. incident response team and/or district management)?	58	24
Is the South Carolina Department of Education notified of information security incidents involving student level data?	72	10
Does the district monitor information systems to detect attacks or potential attacks?	72	10
Does your district have documented plans for the continuity of business operations and the recovery of information technology systems in the event of a disaster or significant disruption?	32	50
Does the documented organizational plan establish and list critical business functions with specified recovery priorities?	26	6
Does the district have a dedicated team of professionals focused on the continuity and recovery of service capabilities?	19	13

Table 9. *Frequency with which districts back up data.*

	Hourly	Daily	Weekly	Monthly	More than Monthly	Never
Indicate how often data are backed up (i.e. files, databases, curriculum, etc.) at your district?	2	72	3	1	0	1
How often are backups stored offsite?	0	37	17	5	4	19

7.1 Support at Regional and State Level

According to the K-12 Technology Initiative 2017-2018 Progress Report, partners are helping address cybersecurity issues through a variety of efforts including contracted distributed denial of service (DDoS) protection and the provision of Cisco Umbrella annual security licenses for all E-Rate Consortium members. However, additional support and resources are needed.

7.2 Action Steps and Metrics

Action Steps	Metrics
Coordinate with the K-12 Technology Initiative and districts to determine current levels of cybersecurity and develop plan to improve	Security section of strategic plan
Determine both district level and statewide solutions to cybersecurity issues	List of possible solutions
Develop cyber literate students through modules on digital citizenship and safety	Use/development of modules related to digital citizenship and cybersecurity

8. Policy and Funding

The primary document guiding digital learning in South Carolina has been the South Carolina State Educational Technology Plan, which provided strategies and resources through December 2016. However, the most recent policy driving digital learning in South Carolina involves shifting to solely computer-based summative assessment. The SC Education Accountability Act (EAA) required that starting in the 2017-2018 school year, all schools must administer computer-based assessments. As part of this effort, district-wide assessments were conducted as a benchmark for technology readiness[15]. However, in preparation for the 2017-2018 school year, the SC Department of Education received 47 waivers for the computer-based format. Forty districts cited too few computers and 36 cited lack of Internet access. A 2017 article in *The State* (Self, 2017), discussed decreased funding for technology in schools stating that funding in 2015-2017 was $29 million per year but dropped to $12 million per year starting July 1, 2017. The following sections discuss additional policy and funding concerns.

8.1 Current Funding

The 2018-19 General Appropriation Act has two line item appropriations in the EIA budget for technology:

Aid to Districts – Technology - $12,000,000 – K-12 Technology Initiative
p.46-47 of the 2017-2018 K-12 Technology Initiative Report provides additional details on the breakdown of this funding
Technology (E-Rate Program) - $12,271,826

In addition, the General Assembly used non-recurring EIA revenues to fund the Palmetto Digital Literacy Program (see Palmetto Digital Literacy Progress Report, pg. 1, 2018):

1A.50. (SDE-EIA: Surplus) For Fiscal Year 2017-18, EIA cash funds from the prior fiscal year and EIA funds not otherwise appropriated or authorized must be carried forward and expended on the following items in the order listed:

1. Computer Science Task Force - $400,000;
2. EOC-Partnerships - $6,281,500;
3. Industry Certification - $3,000,000;
4. SDE-School Districts Capital Improvement Plan - $55,828,859;
5. SDE-Technical Assistance - $1,308,500; and
6. SDE-K-12 Funding Gap - $450,000.

The Department of Education shall disburse the funds for the K-12 Funding Gap proportionately to school districts that, in the current fiscal year, are cumulatively appropriated and allocated at least eight percent less state funds than the school district was appropriated and allocated in Fiscal Year 2016-17. For purposes of this proviso, state funds includes Education Improvement Act funds. Further, the amounts appropriated and allocated in Part IA and Sections 1 and 1A of this Part

[15] https://ed.sc.gov/policy/education-laws-legislation/state-technology-plans/technology-readiness-study/online-testing-technology-readiness-analysis-reports/

IB, shall be considered for purposes of determining whether a school district received less state funds.

1A.65. (SDE-EIA: Digital Learning) Of the funds appropriated to the Education Oversight Committee for Partnerships for Innovation, $1,425,000 must be authorized for schools or school districts that have poverty indices of eighty percent or greater based on the poverty index utilized the prior fiscal year that was student eligibility for the free or reduced price lunch program and Medicaid, or are a trial or plaintiff district in the Abbeville equity lawsuit. In these districts, the EOC will pilot a program that provides school districts with digital learning tools, digital resources, the curriculum foundry, technical support, and professional development.

Table 10. *District reported spending on technology infrastructure. (Technology Counts 2017)*

	Reported in 2016	Projected FY 2016-17 Exp.	Anticipated FY 2017-18 Use
Expand Broadband	$1,142,241.67	$163,628	$21,463
Improve Internal Connections within Schools	$5,487,175.89	$4,712,132	$2,239,233
Replace Devices (computers, laptops, iPads, etc.)	$2,741,237.13	$4,235,426	$886,912
Purchase New (computers, laptops, iPads, etc.) to expand one-to-one computing for students and teachers	$20,570,316.61	$12,214,245	$1,821,585
Improve Security	$911,130.74	$169,110	$42,296
Professional Development to Classroom Teachers	$578,204.17	$265,349	$2,403,014
Technical Assistance for District Technology Staff	$187,046.66	$59,332	$50,359
Other	$3,144,032.94	$1,242,733	$2,284,692
TOTAL	$34,761,385.81	$24,429,712	$9,916,501

While these are large sums, infrastructure building and refreshing (with regards to technology) is a very expensive proposition and, unfortunately, continued and additional funding will be needed to further close the gap in equitable access across the state.

The funding sources detailed above also does not take into account persistent statewide issues regarding Act 388. In 2012, the Jim Self Center on the Future at Clemson University published an analysis of the Act 388 of 2006 statewide impact to date. The report discusses the negative impact on many poorer districts due to the shift in funding formula from homeowner property tax to commercial and rental property. Due to this shift, a “disproportionate number of poor districts are among the losers” with “39 districts that reported lower state funding per pupil in 2009-10”, 19 of which were classified as poor. At the bottom of the list was Dillon 1, “losing $1,674 in state and local funding per pupil over the three year period” according to the report. A 2015 report on

The Impact of Future Population Growth on Berkeley County School District Finances and School Facilities (2016-2035) showed that "BCSD has estimated that Act 388's school finance shift from local property taxes to formula-funded state revenue reduced the district's revenue by $4.5 million in fiscal year 2014-15." A massive restructure of school funding is needed to ensure equitable access in schools across the state.

8.2 Current policies

8.2.1 Technology Plans

According to the SC Department of Education website:

> *The 2017-19 South Carolina State Educational Technology Plan-Empowering Education with Technology compiles relevant industry research and state specific data that school district staff can use to augment district technology plans. The state's technology plan is intended to be leveraged by school districts writing their individual district technology plans.*
>
> *The South Carolina Department of Education, in accordance with State and Federal regulations, is charged with reviewing technology plans for all school district entities. All plans are reviewed and certified for compliance with current Federal E-Rate Program requirement, the Federal Child Protection Act (CIPA), the state's Certified Staff Technology Proficiency Proviso, and provisions of services or funding support provided by the state's K-12 School Technology Initiative.*

However, a copy of the 2017-19 South Carolina State Educational Technology Plan is not available. All links correspond to the 2014-16 plan. Each school district, using a template and 6 identified requirements from the SC Department of Education, developed and submitted a district technology plan in accordance with S.C. Code Ann. § 59-1-525, General Appropriation Act 2015, Proviso 3.6. District plans are available at: https://ed.sc.gov/policy/education-laws-legislation/state-technology-plans/sc-school-districts-technology-plan-requirements/south-carolina-district-technology-plans/
According to the South Carolina State Department of Education website, "*to ensure each district is provided adequate funding for telecommunication, Internet, and networking. There must be connection between the proposed physical infrastructure of the information technology and the plan for professional development, curriculum reform, and service improvements. Each district is required to provide an updated plan and budget every three fiscal year to maintain compliance. Districts that are up for review will be required to submit a draft technology plan by October 31 of that fiscal year and a final draft technology plan draft by March 31 of that fiscal year.*

Each district is required to submit a district technology plan. Each technology plan is reviewed and scored based on 6 requirements:

- *The plan establishes clear goals and realistic strategy for using telecommunications and information technology to improve education or library services.*

- *The plan has a professional development strategy to ensure that staff knows how to use the new technologies to improve education.*
- *The plan includes an assessment of the telecommunications services, hardware, software, and other services that will be needed to improve education.*
- *The plan provides for sufficient budget to acquire and maintain the hardware, software, professional development, and other services that will be needed to implement the strategy for improved education.*
- *The plan includes an evaluation process that enable the district and its schools to monitor progress toward the specified goals and make mid-course corrections in response to new developments and opportunities as they arise.*
- *Budget for appropriate year(s).”*

8.2.2 Computer Science Education

In addition to instructional technology, extensive efforts have been made in the last three year with regard to policy around Computer Science education. Computer Science education transitions students (and teachers) from being consumers of technology to being creators. In 2016, the SC Department of Education and Education Oversight Committee convened a joint task force on computer science and information technology. The task force identified 5 recommendation for the SC Department of Education including: 1) a communication plan, 2) pathways in grade 9-12, 3) approval as a field of teacher certification, 4) needs assessment for access for all, and 5) K-8 computer science standards. Additionally, the task force recommended $500,000 for the effort, which included a full-time staff person with the SC Department of Education. As the task force completed its work, the Fall 2016 Computer Science K-8 Standards Writing Committee began its work. The K-8 Computer Science and Digital Literacy Standards were approved by the State Board of Education in May 2017 and the following memorandum was sent in July 2017 regarding the standards and certification: https://ed.sc.gov/newsroom/school-district-memoranda-archive/south-carolina-computer-science-and-digital-literacy-standards/south-carolina-computer-science-and-digital-literacy-standards-memo/

In January 2017, House Bill 3427[16] was proposed in an effort to develop legislation around the state’s Computer Science education needs. The bill has received bi-partisan support but received many revisions as each committee reviewed it. As of the end of the last legislative session, the bill is no longer being actively considered. Despite the bill not moving forward, the graduation requirement related to Computer Science was changed. In Bill (S. 462) to amend Section 59-39-100, the statutory requirement for keyboarding as a high school credit was removed, meaning all high schools must offer a Computer Science course from one of the approved lists (Course List N or O) starting in the 2019-2020 school year.

In Spring 2018, a committee was convened to write the South Carolina Computer Science Standards for High School. The standards were approved by the State Board

[16] https://www.scstatehouse.gov/sess122_2017-2018/bills/3427.htm
https://legiscan.com/SC/bill/H3427/2017

of Education in August 2018. During this time, the SC Department of Education also appointed Gwendolynn Shealy as the Team Leader for Computer Science within the Standards and Learning department. She works with K-8 Computer Science education. There are currently plans to hire a 9-12 Computer Science education lead.

Currently, the Fall 2018 Computer Science Planning Committee is creating a set of pathways and a course grid for new, revised, and current courses in Computer Science. The committee also created a recommended timeline and actions for the SC Department of Education to help move Computer Science education forward in SC.

8.3 Action Steps and Metrics

Action Steps	Metrics
Develop additional funding sources to address infrastructure, teacher professional development, and security	List of current and potential sources of funding
Develop policy around a statewide vision for digital learning	Policy
Coordinate with legislators currently pre-filling legislation to amend Act 388 and other state education funding policies	Documentation of future legislative action
Continue to expand Computer Science education in SC	Course taught

9. Local Digital Learning Initiatives

9.1 Palmetto Digital Literacy Program

The Palmetto Digital Literacy Program (PDL) is a partnership among Learning.com, the South Carolina Education Oversight Committee, and the South Carolina Department of Education founded during 2016-2017 through funding from the Education Improvement Act (EIA) revenues. The goal of the program is to enhance digital literacy skills for teachers and students and address access inequity by providing funding assistance for school districts with a poverty index of 80% or greater and school districts involved in the Abbeville equity lawsuit.

At the time of the 2018 evaluation report (link in References), 37 school districts were participating in PDL with 24,503 individual student accounts, 3,506 teacher accounts, and 209 individual schools using Learning.com. The primary need reported by participating school districts was keyboarding instruction, often to prepare students for the statewide shift to online summative assessments. Of the districts surveyed, 95% employed the provided keyboarding modules. The least employed topic on the Learning.com site was coding. Eleven districts participated in pre/post-assessment for grade 5 finding variations in growth across districts on the 6 factors measured.

The report identified the need for digital learning resources (including keyboarding, coding, and Internet safety), better infrastructure to meet the digital learning needs of students, and teacher professional development with more extensive planning time.

9.2 South Carolina K-12 School Technology Initiative

The South Carolina K-12 School Technology Initiative is a unique collaboration of stakeholders that was founded in 1996 to address technology infrastructure, connectivity, and education in schools[17]. The initiative's partnership includes the SC Department of Administration, SC Department of Education, SC Education Oversight Committee, SC Educational Television, SC State Library, as well as private sector representatives. According to their 2017-2018 Progress Report (link in References), they are serving 82 school districts, 1,257 public schools, 194 libraries, and 774,004 students. The report highlights the following successes from 2017-2018:

- Public school districts accounted for 138.6 Gbps of internet bandwidth capacity in 2017-18, a 22 percent increase from the previous year.
- The number of public school districts with 1,000 Mbps or more bandwidth has grown from six in 2013 to 46 in 2017-18.
- Over 17 million items were retrieved from Discus, the State Library's virtual library.
- Almost 5 million on-demand SCETV resources were used in 2017-18, a 524 percent increase from 2016-17.
- The state's virtual school program, VirtualSC, served over 42,000 student enrollments in 2017-18 (including students from 348 schools in 82 public school

[17] https://sck12techinit.sc.gov

districts) an increase of 41 percent from 2016-17.
- Technology was implemented to combat the ever-increasing number and complexity of malware, ransomware and other advanced security threats received by schools and libraries.
- Educators participated in a variety of professional development offerings provided by SCDE, SCETV and the State Library.

In addition to these highlights, the report also documented continued challenges related to funding for VirtualSC, resulting in over 2,000 enrollments being turned away, and persistent issues with infrastructure. Finally, the report details the current state of the four main areas identified by the South Carolina State Educational Technology Plan; 1) student learning & classroom technology, 2) infrastructure & security, 3) professional development, and 4) collaboration opportunities.

9.3 Other Multi-District Initiatives

While not directly related to instruction, telehealth is an initiative that supports students and schools. A collaboration with the Medical University of South Carolina that launched in 2015 with 3 schools supported over 45 schools in 2017 and had plans to double that number in 2018. The schools, most in the poorest regions of the state, are receiving support to reduce the burden of emergency rooms (ER) in small, rural communities by triaging cases that normally would have required a hospital visit within the school via telepresence. The program has identified asthma and behavioral health as the most urgent needs and has seen reductions in both trips to the ER for students with asthma and "improved outcomes for children diagnosed with ADHD"[18] However, the program cautions the need for a trained nurse in participating school so that the burden does become another additional duty for teachers, administrators, and other school staff.

Telehealth is not the only innovative use of telepresence in schools. While not a South Carolina effort, the Nebraska model of using telepresence to extend expertise to rural, remote areas of the state could help South Carolina more equitable distribute intellectual resources with regards to digital learning. The University of Nebraska-Lincoln[19] uses telepresence robots and virtual reality to allow experts, facilitators, teachers, students, and researchers to connect both physically and virtually around topics such as Making and computer science. These are topics that often increase equitable access to opportunities and careers but lack equitable access to resources.

9.4 District 1:1 initiatives

As shown in Figures 3 and 5 in Section 5. Infrastructure, there are several districts around the state that have fully implemented 1:1 device initiatives and still more that have a number of schools with 1:1 devices. While 1:1 initiatives have not been identified as a priority by either state or federal agencies, the shift in South Carolina to

[18] https://mhealthintelligence.com/news/building-a-school-based-telehealth-program-start-with-the-nurse
[19] https://news.unl.edu/newsrooms/today/article/extension-to-use-telepresence-robotics-to-bring-hour-of-code-to-sidney/

using only online assessments and national recommendations to "create equitable and accessible learning ecosystems that make learning possible everywhere and all the time for all students (p. 25, SCDOE, 2017)" suggest that 1:1 devices may be useful in achieving learning outcomes.

Anderson School District Five began their 1:1 initiative journey in 2012. The district website[20] documents the timeline and story of their 1:1 initiative rollout from a pilot in December 2012 to the expansion of devices to K-2nd in September 2018. Beyond the purchase, repair, and refreshing of devices, the story also documents extensive professional development. The district's technology goals for the 2018-2019 school year include:

- Continue striving towards ubiquitous computing in our learning environment
- Continue to expand our mobile learning opportunities via 1:1 initiatives, additional mobile learning devices, and cloud based collaboration systems in support of mobile learning and collaboration
- Continue to refresh the district's technology eco-system as funding will allow
- Continue to provide professional development to accommodate our 21st century learners
- Continue to increase digital citizenship education for staff, students, parents, and the community
- Implement new or modified processes that are more digitized to reduce paper dependency

However, the information provided online does not document the human capacity (i.e., support for teachers) needed to support a 1:1 initiative, as recommended by Lori Gerstein Ramsey of Metis Associates. Ramsey describes some of her work with Charleston County Schools[21] and makes recommendations for schools and districts considering 1:1 initiatives. Her recommendations are:

1. Consider the technology carefully from the start
2. Determine how much access students will have
3. Teach students to be discerning and responsible digital citizens
4. Understand the pedagogy behind the technology
5. Provide teachers with the support they need

In Charleston County, the initial rollout of 1:1 devices in many schools was supported by a school-based coach that served 1-3 schools in the district. However, as funded priorities have changed, these coach positions no longer exist, shifting, or in some cases removing, support for teachers. Support for devices is also a task that looks different among schools. In one case, the iPad support person is half-time technical support and half-time special needs teacher, which further support Ramsey's #1 recommendation.

[20] https://sites.google.com/a/anderson5.net/1to1/home
[21] http://www.metisassociates.com/in_focus/lori_ramsay.html

9.5 Other Local Digital Learning Initiatives

Many districts across the state have digital learning initiatives that are trying to meet the needs of their community. Below are examples of some of these initiatives. Local digital learning initiatives are vital for the design and development of sustainable solutions to current gaps in accessibility because each classroom, each school, each district, etc. has a unique culture with its own set of requirements and challenges.

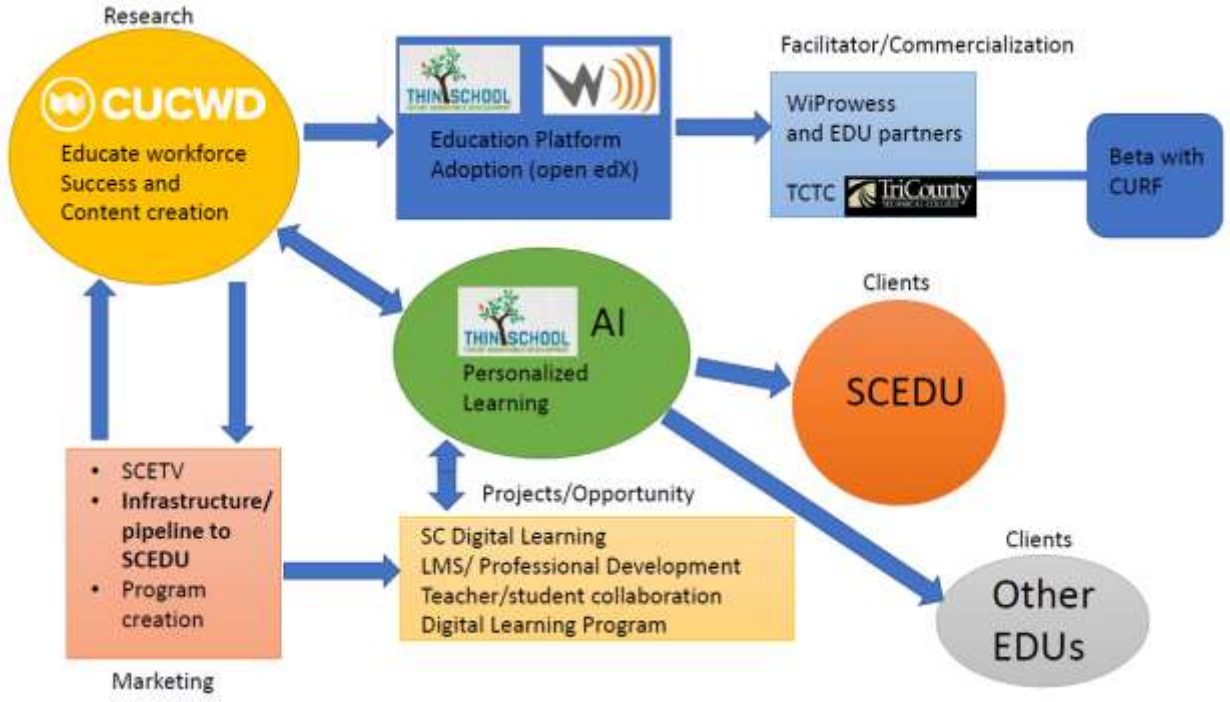
Anderson School District 5 Initiatives:

ThinSchool:
https://drive.google.com/open?id=1IczFTJK5i1zdXu4AB4rwb2EPgcyVYslT

INSPIRE Lab:
https://drive.google.com/open?id=17wNK_ytGQzwBnL5pWCPJhyK3HetaYkRA

e-Merge:
https://drive.google.com/open?id=1NiTYatHrK1BQyUaCCCSwzmpIkuROWdCR

Project ClemLab:



Berkeley County Rolling Study Hall: http://www.live5news.com/story/34955493/google-launches-rolling-study-hall-program-with-berkeley-county-school-district/

Jasper County - Polaris Tech Charter School: https://www.polaristech.org/

9.6 Action Steps and Metrics

Action Steps	Metrics
Develop and implement a needs assessment investigating current local initiatives with the purpose of identifying gaps in which future initiatives could be implemented	Needs assessment
Provide a statewide vision for digital learning	Vision
Develop a strategic plan with guidelines to help districts achieve that vision	Strategic plan
Consider district coaches for digital learning	FTE creation or reallocation
Develop state and district dissemination plans (i.e., newsletter, recommended websites or RSS feeds)	Artifact of dissemination
Foster organic, local solutions to accessibility issues and encourage community, business, and industry participation	Artifact of impact (i.e., meeting agenda, district plan)

10. Alternative Methods of Instruction

Many schools districts have recognized the need for alternative methods of instruction to ensure that all students complete the required number of contact hours each school year despite disease outbreak, inclement weather, other acts of God, or a utility outage. According to S.C. CODE ANN. § 59-1-425, a minimum of 180 days (at least 6 hours/day) of instruction are required, with 3 days set aside in the academic calendar to be used as make-up days.. Alternative methods of instructions must demonstrate how teaching and learning will continue without negative impacts.

For example, in 2017, Arkansas passed Act 862 to allow schools to develop a plan to alternative methods of instruction. A sample plan from Bentonville Schools reads:

> *Bentonville Schools plans to utilize traditional "snow days" for the first three inclement weather days we encounter. Should we need to be out more than three days, the superintendent will seek approval from the school board to utilize an AMI day. These AMI plans and the details below are only a contingency plan in case we may need them.*
>
> *Click here for PreK-8 assignments. High School assignments were sent home by teachers.*
>
> - *AMI lessons will be provided by teachers in early January and posted to websites.*
> - *AMI study, research, and investigation (SRI) charts will include up to five optional lessons to complete instead of school attendance.*
> - *AMI work will be due to teachers within five (5) days after school resumes.*
> - *Students who complete the work (one lesson per day) will receive attendance credit for the AMI or inclement weather day.*
> - *Students who do not complete the work will be marked absent for the related AMI or inclement weather day.*
> - *These absences can negatively impact exam exemptions, perfect attendance, etc.*
> - *Teachers will evaluate the work and return it with feedback. At a teacher's discretion, the work may or may not result in a grade in the grade book*
> - *In most cases, AMI lessons will be provided in one-page charts that a student/parent can keep as a screenshot.*
> - *K-8 students will be given study, research, and investigation (SRI) charts for the four core subjects.*
> - *Grade 9-12 students will be given one chart per course of enrollment.*
> - *During the ten (10) days after school resumes each teacher will publish at least three hours of before and after school availability to help support and tutor students with AMI lessons as needed.*
>
> *The Bentonville Schools educational team recognizes direct instruction provided by highly qualified and effective teachers is the ultimate method of student achievement. The instructional staff also, recognize the research data that*

supports opportunities for students to manage their own learning, take charge of their own learning, and work independently with an abundance of choices that can occur anytime and anywhere. Alternative Methods of Instruction or AMI days will give students a unique opportunity to make more choices than usual about their learning, to manage their own learning, and to work independently. This approach will broaden student experiences during the school year while still containing our school year to the traditional school calendar without infringing on other portions of the calendar when our students are pursuing outdoor education, community-based teams, camps, and educational family travel.

As stated in the legislation, the Arkansas Commissioner of Education may grant up to the equivalent of five (5) student attendance days for public school districts that have an alternative instruction plan approved by the Commissioner of Education for the use of alternative methods of instruction, including without limitation virtual learning, on days when the public school district is closed due to exceptional or emergency circumstances such as a contagious disease outbreak, inclement weather or other acts of God, or a utility outage. The public school district's alternative instruction plan shall demonstrate how teaching and learning in the public school district will not be negatively impacted by the use of alternative methods of instruction.

South Carolina has initiated a similar process in light of several events over the past several years including hurricanes, floods, and snow storms. In early 2018, the SC Education Oversight Committee solicited proposals from districts interested in piloting alternative methods of instruction. Five districts were chosen to participate during the 2018-2019 school year, including Anderson 5, Kershaw, Pickens, Spartanburg District 1, and Spartanburg District 7. For example, Kershaw students participated in a mock eLearning Day for part of the school day on November 20, 2018 in order to test their model. Kershaw's district website provides a number of resources to parents and students including Frequently Asked Questions, Basic Steps to Follow on an eLearning Day, and Tech Support and Internet Access (which includes a list of locations with free wi-fi within the school district).[22]

10.1 Number of school days missed by students

According to the *Missed Schools Days Report 2017-2018* (link in References), every school district in the state of South Carolina missed at least one day of instruction during the 2017-2018 school year. Primary reasons given were Hurricane Irma and snow/ice. In total, 314 days were missed across the state. Of these 314 missed days, 234.3 were made up, 71 were waived by local school boards, and 6 days were waived by State Board of Education.

10.2 Pilots and possible programs for alternative instruction

In order to determine the feasibility of alternative methods of instruction, a

[22] https://www.kcsdschools.net/Page/15733

number of questions need to be answers. Namely, questions are related to access:

1. How many students have access to devices at home?
2. How many students have access to reliable internet at home?

The five districts within the eLearning Initiative were asked to answer these questions and more on their applications. Most districts are able to provide devices to all students through 1:1 initiatives as detailed in Section 4.2. Each district was required to have a plan that enable all students to be able to access instruction. Anderson School District 5 used an eLearning day on October 11, 2018 for what would have been a missed day due to Hurricane Michael. Students were sent home the previous day with Chromebooks and assignments that could be completed with or without Internet connection. Most students were able to complete the assignment in less than 2 hours and several students were able to contact their teachers (Ellis, 2018).

Another possible model for alternative methods of instruction involves SCETV. SCETV currently contains a wealth of resources for teachers including lesson plans around project-based learning, 1:1 curriculum, videos, and other digital content. Additionally, SCETV currently offers online courses for teachers in a format that could be transitioned for students. To expand this effort, SCETV has been exploring datacasting. Datacasting is defined as the "use of existing broadcast television signals to deliver encrypted data to targeted recipients"[23]. The Department of Homeland Security is currently exploring this technology for public safety use in light of issues with commercial cellular networks becoming overloaded. In order to have access to the broadcast television signal, recipients must have a specific receiver dongle. Video, files, and notifications are all possible formats to be delivered via datacasting. As seen in Figure 8, the majority of South Carolina has access to broadcast television signals through SCETV infrastructure. In addition to infrastructure resources, SCETV currently employs two full-time educators that physically travel to schools throughout the state to provide teacher professional development and instruction and curriculum for students.

[23] https://www.dhs.gov/sites/default/files/publications/1015_OIC_Datacasting-FactSheet_180808-508.pdf

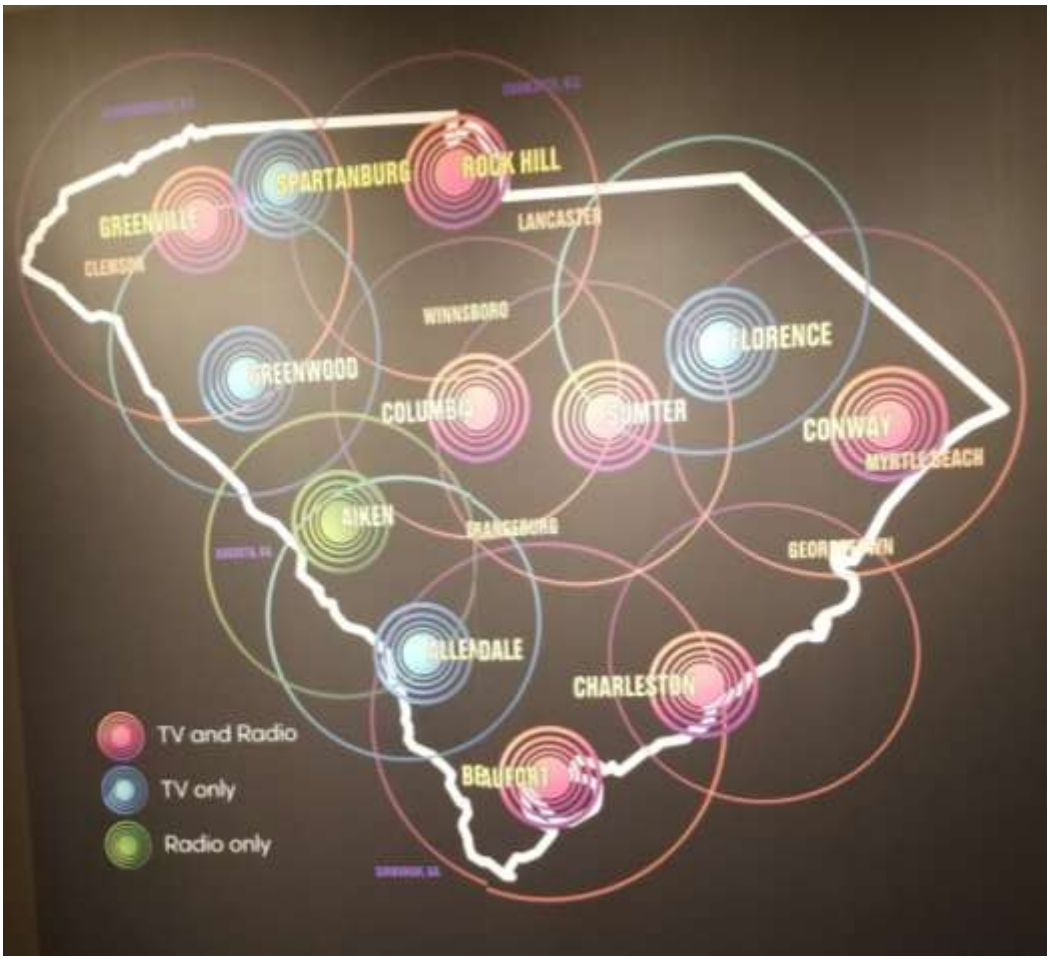


Figure 8. *Location of SCETV towers and coverage statewide.*

10.3 Current programs for alternative instruction

Prior to the recent eLearning Initiative, alternative methods of instruction in South Carolina were limited to VirtualSC. VirtualSC was launched as a pilot entitled the South Carolina Virtual School Program (SCVSP) in 2006, creating SCVSP at the South Carolina Depart of Education with legislation in 2007. In 2014, SCVSP became VirtualSC. VirtualSC's mission is to "provide South Carolina students [grades 6-12] with flexible and rigorous online learning opportunities that will help them acquire the knowledge, skills and characteristics necessary for college and career readiness."[24] According the their 2016-2017 Annual Report (link in References), "VirtualSC was able to serve 39,053 student enrollments for 304 schools in 81 public school districts, 22 home school associations, 72 private schools, and 30 adult education centers located throughout South Carolina". In addition to courses needed for graduation and AP courses, VirtualSC began offering a blended learning Elementary Keyboarding Program statewide in 2017 to meet the online assessment preparation needs of the state. The program served 67,973 students (grades K-6), 2,250 teachers, and 259 administrators in 35 districts during the reporting year.

[24] https://virtualsc.org/vision-mission-values/

10.4 Action Steps and Metrics

Action Steps	Metrics
Document and disseminate results from the five pilot school districts developing models for alternative methods of instruction during the 2018-2019 school year	Report to EOC and state
Determine and disseminate statewide guidelines for alternative methods of instruction	Guidelines published
Continue to explore gaps in infrastructure necessary to equitably use alternative methods of instruction statewide, including alternative methods of connecting students to teachers such as datacasting, rolling study halls, and libraries.	Included in the strategic plan for updating infrastructure

APPENDIX A: Data Tables

Table 11. *Circuit speed/Mbps (megabits per second) by district. (South Carolina Department of Administration)*

	Number of Students	Speed (Mbps)	District Office	School Max	School Min	School AVG	TOTAL FOR SCHOOLS	NOTES
Abbeville	3,058	500	2000	500	500	500	2500	
Aiken	24,641	500	4000	4000	100	456	13950	
Allendale	1,228	500	500	100	100	100	200	excludes 2 schools with district-owned fiber
Anderson 01	9,706		100	4000	100	900	8100	several HS are hubs to ES and MS, district-owned fiber
Anderson 02	3,850	2500	2500	500	500	500	3000	district-owned fiber
Anderson 03	2,623	250	250	2000	250	600	3000	
Anderson 04	2,867	1000	1000	1000	1000	1000	6000	
Anderson 05	12,871	1000	4000	1000	1000	1000	19000	
Bamberg 01	1,400							
Bamberg 02	704	150		150	150	150	600	
Barnwell 19	672							
Barnwell 29	913							
Barnwell 45	2,231	150		1000	150	362	1450	
Beaufort	21,439							
Berkeley	32,946	500	500	9500	100	990	38600	10 schools have district owned fiber
Calhoun	1,762	500		500	500	500	1000	district-owned fiber
Charleston	47,749	100	100	2000	100	100	100	District HUB has 5000, schools with district-owned fiber
Cherokee	8,837	250	2000	1000	250	412	7000	district-owned fiber
Chester	5,142	2000	2000	1000	1000	1000	8000	
Chesterfield	7,184	250	250	4000	250	458	8250	
Clarendon 01	770							

Clarendon 02	2,968							
Clarendon 03	1,220	500	1000	1000	500	750	1500	
Colleton	5,707	100	100	2000	100	100	100	
Darlington	10,148							
Dillon 03	1,643							
Dillon 04	4,190	100		1000	100	280	2800	
Dorchester 02	25,410	250		1000	250	1668	36700	
Dorchester 04	2,241	100	500	100	100	100	1200	
Edgefield	3,437	150	1000	250	150	683	1850	DO is HUB
Fairfield	2,813	5000	5000	1000	500	667	4000	
Florence 01	16,204	500	5000	1000	100	804	20100	DO is HUB
Florence 02	1,151							
Florence 03	3,697	100	2000	1000	100	461	4150	DO is HUB
Florence 04	720							
Florence 05	1,355							
Georgetown	9,587	250	4000	1000	100	408	8150	
Greenville	75,745	100		500	100	229	21300	
Greenwood 50	8,941	1000	1000	1000	1000	1000	16000	
Greenwood 51	953	1000	1000	1000	1000	1000	5000	
Greenwood 52	1,622							
Hampton 01	2,361	500	500	2500	500	750	6000	
Hampton 02	782							
Horry	42,833	1000	7500	1000	500	1105	63000	DO is HUB
Jasper	2,763	500	2000	500	500	875	3500	DO is HUB
Kershaw	10,550	1000	2000	1000	1000	1053	20000	DO is HUB
Lancaster	12,569	250	5000	1000	250	728	13100	DO is HUB
Laurens 55	5,969							
Laurens 56	3,075	1000	1000	1000	1000	1000	2000	DO is HUB
Lee	2,120	500	1000	500	250	450	2250	DO is Fiber HUB
Lexington 01	24,932	250	250	1000	100	948	30350	
Lexington 02	8,885	1000	2000	1000	500	842	16000	DO is HUB
Lexington 03	2,013							
Lexington 04	3,462	250	2000	2000	250	750	3750	DO is HUB
Lexington 05	16,961	100	4000	2000	100	662	11250	
McCormick	787		100	100	100	100	200	
Marion 10	4,895	500	2000	500	150	664	4650	2 schools are Fiber HUB
Marlboro	4,066	100		1000	100	190	1900	
Newberry	6,069	500	4000	1000	500	833	10000	
Oconee	10,370							
Orangeburg 03	2,903	1000	1000	1000	1000	1000	7000	
Orangeburg 04	3,785	150	1000	1000	150	320	2600	

Orangeburg 05	6,619	250	250	250	250	250	750	
Pickens	16,383	4000		1000	100	452	10850	
Richland 01	23,897	1000		1000	10	760	38010	
Richland 02	27,422	1000		1000	1000	1000	12000	
Saluda	2,178	500	1000	1000	500	750	3000	DO is HUB
Spartanburg 01	4,950	250	4000	1000	250	833	7500	DO is HUB, one school is Fiber HUB
Spartanburg 02	9,936	1000		1000	1000	1000	10000	
Spartanburg 03	2,887	2000	2000	1000	250	844	6750	DO is HUB
Spartanburg 04	2,738							
Spartanburg 05	8,189	250		2500	250	786	5500	
Spartanburg 06	11,162	100		1000	100	250	3500	
Spartanburg 07	7,067	4000	4000	1000	500	962	12500	
Sumter	16,957	1000		1000	1000	1000	30000	
Union	4,025	150	150	1000	150	459	5050	
Williamsburg	4,289	1000	5000	1000	1000	1000	15000	
York 01	5,148	250		1000	250	450	6250	
York 02	7,395	250	4000	1000	250	727	8000	DO is HUB
York 03	17,711	1000	2000	2000	1000	1138	33000	
York 04	13,125	1000	1000	1000	1000	1000	15000	DO is HUB
Statewide Totals	**757,082**						**663,810**	

Table 12. *Status of devices reported by districts. (2016 Technology Counts Survey)*

District	TOTAL DEVICES	% Less than 1 year old	% between 2 and 3 years old	% between 4 and 5 years old	% 5 years and older
Abbeville 60	Data Missing	Data Missing	Data Missing	Data Missing	Data Missing
Aiken 01	120	29%	33%	17%	21%
Allendale 01	61	16%	36%	30%	18%
Anderson 01	55	24%	44%	24%	9%
Anderson 02	175	0%	73%	27%	0%
Anderson 03	48	10%	52%	35%	2%
Anderson 04	3175	38%	43%	0%	19%
Anderson 05	146	0%	0%	100%	0%
Bamberg 01	1004	27%	2%	55%	16%
Bamberg 02	14	0%	0%	100%	0%
Barnwell 19	253	0%	20%	20%	60%
Barnwell 29	10	40%	40%	20%	0%
Barnwell 45	127	8%	79%	13%	1%
Beaufort 01	325	15%	46%	31%	8%
Berkeley 01	827	40%	22%	28%	11%
Calhoun 01	51	0%	100%	0%	0%
Charleston 01	Data Missing	Data Missing	Data Missing	Data Missing	Data Missing
Cherokee 01	50	0%	60%	30%	10%
Chester 01	95	0%	79%	21%	0%
Chesterfield 01	3400	3%	3%	74%	21%
Clarendon 01	31	26%	0%	74%	0%
Clarendon 02	14	7%	7%	86%	0%
Clarendon 03	47	11%	57%	32%	0%
Colleton 01	31	0%	0%	100%	0%
Darlington 01	2448	49%	38%	9%	4%
Dillon 03	30	7%	40%	53%	0%
Dillon 04	2642	15%	17%	3%	65%
Dorchester 02	122	2%	0%	82%	16%
Dorchester 04	32	9%	6%	84%	0%
Edgefield 01	53	15%	17%	28%	40%
Fairfield 01	4706	6%	67%	20%	7%
Florence 01	286	3%	82%	15%	0%
Florence 02	17	12%	88%	0%	0%
Florence 03	3849	2%	60%	6%	32%
Florence 04	23	0%	22%	78%	0%
Florence 05	24	8%	17%	67%	8%
Georgetown 01	5600	21%	41%	9%	29%
Greenville 01	6590	2%	25%	38%	35%
Greenwood 50	98	3%	5%	61%	31%
Greenwood 51	1350	74%	22%	4%	0%
Greenwood 52	13	0%	100%	0%	0%
Hampton 01	19	26%	5%	68%	0%
Hampton 02	40	43%	0%	58%	0%
Horry 01	607	11%	66%	21%	2%
Jasper 01	35	0%	97%	3%	0%

Kershaw 01	10368	11%	39%	23%	27%
Lancaster 01	318	6%	57%	2%	35%
Laurens 55	207	12%	10%	14%	64%
Laurens 56	40	5%	85%	5%	5%
Lee 01	1959	46%	5%	10%	39%
Lexington 01	24401	24%	39%	30%	8%
Lexington 02	333	60%	21%	10%	9%
Lexington 03	38	32%	32%	37%	0%
Lexington 04	66	0%	82%	18%	0%
Lexington 05	177	18%	21%	45%	16%
Marion 10	94	11%	62%	26%	2%
Marlboro 01	90	24%	11%	31%	33%
McCormick 01	15	47%	7%	47%	0%
Newberry 01	149	2%	3%	95%	0%
Oconee 01	66	9%	30%	45%	15%
Orangeburg 03	54	0%	0%	0%	100%
Orangeburg 04	60	38%	38%	23%	0%
Orangeburg 05	185	0%	11%	89%	0%
Palmetto Unified	797	1%	13%	25%	60%
Pickens 01	300	51%	8%	41%	0%
Richland 01	7500	47%	53%	0%	0%
Richland 02	731	12%	40%	33%	15%
Saluda 01	145	0%	100%	0%	0%
Spartanburg 01	110	0%	100%	0%	0%
Spartanburg 02	394	0%	38%	11%	51%
Spartanburg 03	3870	28%	65%	2%	5%
Spartanburg 04	25	16%	8%	76%	0%
Spartanburg 05	6857	29%	34%	20%	17%
Spartanburg 06	58	0%	52%	48%	0%
Spartanburg 07	10228	6%	51%	29%	15%
Sumter 01	300	33%	33%	25%	8%
Union 01	55	0%	82%	18%	0%
Williamsburg 01	125	16%	28%	32%	24%
York 01	74	11%	89%	0%	0%
York 02	115	35%	17%	30%	17%
York 03	183	15%	16%	40%	28%
York 04	140	0%	100%	0%	0%
SC Public Charter School District	28	50%	21%	29%	0%

Table 13. *Number of faculty and staff devices by type and district. (2016 Technology Counts Survey)*

District	Desktops (District provided)	Laptops (District provided)	Tablets (District provided)	Tablets (User Owned BYOD)	Mobile Devices (District provided)	Mobile (User Owned BYOD)	TOTAL DEVICES
Abbeville 60	125	100	30	0	92	0	347
Aiken 01	300	150	50	25	124	10	659
Allendale 01	19	16	11	0	15	0	61
Anderson 01	23	31	23	0	22	0	99
Anderson 02	81	29	63	0	2	0	175
Anderson 03	20	25	15	0	0	0	60
Anderson 04	0	275	30	0	2100	0	2405
Anderson 05	75	55	16	0	169	0	315
Bamberg 01	148	15	1	2	39	20	225
Bamberg 02	14	7	2	0	0	0	23
Barnwell 19	28	7	4	0	0	0	39
Barnwell 29	10	4	0	0	4	2	20
Barnwell 45	40	65	22	0	86	0	213
Beaufort 01	525	360	500	0	230	0	1615
Berkeley 01	192	139	356	0	116	0	803
Calhoun 01	20	31	0	0	0	0	51
Charleston 01	14098	6540	143	0	515	0	21296
Cherokee 01	33	10	7	0	18	5	73
Chester 01	20	75	15	0	35	0	145
Chesterfield 01	2786	150	20	100	75	386	3517
Clarendon 01	48	48	3	0	10	0	109
Clarendon 02	14	10	0	0	8	0	32
Clarendon 03	25	5	17	0	5	10	62
Colleton 01	16	5	5	0	5	0	31
Darlington 01	26	32	32	0	0	0	90
Dillon 03	15	10	5	0	0	0	30
Dillon 04	1480	298	800	0	20	0	2598
Dorchester 02	68	35	19	0	102	0	224
Dorchester 04	32	20	0	0	25	0	77
Edgefield 01	32	16	5	6	9	26	94
Fairfield 01	55	7	21	0	13	0	96
Florence 01	175	54	32	0	25	0	286
Florence 02	10	5	2	0	5	0	22
Florence 03	38	40	15	0	0	0	93
Florence 04	18	4	1	0	5	0	28
Florence 05	14	5	0	2	0	3	24
Georgetown 01	70	68	25	0	50	0	213
Greenville 01	1695	3334	127	0	450	0	5606

Greenwood 50	36	49	49	0	20	0	154
Greenwood 51	20	10	10	0	40	0	80
Greenwood 52	12	3	1	0	1	0	17
Hampton 01	19	15	2	0	0	0	36
Hampton 02	20	6	16	0	2	0	44
Horry 01	1434	179	150	0	0	0	1763
Jasper 01	35	27	4	2	17	0	85
Kershaw 01	191	149	21	0	0	0	361
Lancaster 01	1020	300	210	52	200	300	2082
Laurens 55	57	94	56	17	95	250	569
Laurens 56	25	15	16	5	22	5	88
Lee 01	400	400	0	459	100	0	1359
Lexington 01	251	210	210	0	0	0	671
Lexington 02	167	105	88	0	51	0	411
Lexington 03	21	8	7	0	2	0	38
Lexington 04	42	12	12	0	0	0	66
Lexington 05	128	49	42	0	160	0	379
Marion 10	48	21	25	0	0	0	94
Marlboro 01	50	25	15	0	20	0	110
McCormick 01	250	192	506	0	30	0	978
Newberry 01	105	22	10	0	20	0	157
Oconee 01	24	32	10	0	26	0	92
Orangeburg 03	42	12	10	0	0	3	67
Orangeburg 05	43	10	6	0	1	0	60
Pickens 01	95	61	29	0	116	0	301
Richland 01	25	50	6	0	3	0	84
Richland 02	123	152	25	0	100	0	400
Saluda 01	3500	4000	3000	500	500	4500	16000
Spartanburg 01	235	320	176	0	0	0	731
Spartanburg 02	145	10	5	0	25	0	185
Spartanburg 03	60	25	25	0	0	0	110
Spartanburg 04	186	57	151	0	77	0	471
Spartanburg 05	200	25	0	0	25	0	250
Spartanburg 06	18	5	8	0	0	0	31
Spartanburg 07	276	48	0	0	52	0	376
Sumter 01	26	28	4	0	17	0	75
Union 01	338	124	115	0	90	0	667
Williamsburg 01	150	150	50	0	50	0	400

York 01	31	24	4	0	11	0	70
York 02	100	30	10	0	10	0	150
York 03	74	15	19	8	25	20	161
York 04	60	115	0	0	115	0	290
SC Public Charter School District	77	103	166	0	74	0	420
TOTAL OF DEVICE TYPE	**32,657**	**19,395**	**7,717**	**1,179**	**6,477**	**5,540**	

Table 14. *Status of 1:1 initiatives and wireless access by school district. (2016 Technology Counts Survey)*

District	Students Per Device	All Schools have 91-100% of classrooms with wireless access	All Schools have 91-100% of students served by 1:1 learning
Abbeville 60	2.09	Yes	No
Aiken 01	10.81	Yes	No
Allendale 01	District is 1:1	Yes	Yes
Anderson 01	1.37	Yes	No
Anderson 02	1.18	Yes	No
Anderson 03	3.01	Yes	No
Anderson 04	District is 1:1	Yes	Yes
Anderson 05	1.02	Yes	No
Bamberg 01	District is 1:1	Yes	No (1 school is 0%)
Bamberg 02	1.10	Yes	No
Barnwell 19	District is 1:1	Yes	Yes
Barnwell 29	1.92	Yes	No
Barnwell 45	5.17	No (1 school is 41-50%)	No
Beaufort 01	District is 1:1	Yes	Yes
Berkeley 01	<1	Yes	No
Calhoun 01	District is 1:1	Yes	Yes
Charleston 01	1.94	Yes	No
Cherokee 01	1.21	Yes	No
Chester 01	1.15	Yes	No
Chesterfield 01	8.80	Yes	No (0% across all schools)
Clarendon 01	District is 1:1	Yes	Yes
Clarendon 02	District is 1:1	Yes	Yes
Clarendon 03	2.31	Yes	No (0% across all schools)
Colleton 01	1.95	Yes	No
Darlington 01	1.25	Yes	No
Dillon 03	12.74	Yes	No
Dillon 04	1.99	Yes	No
Dorchester 02	2.88	Yes	No
Dorchester 04	1.16	Yes	No
Edgefield 01	1.62	Yes	No
Fairfield 01	1.30	Yes	No
Florence 01	1.09	Yes	No
Florence 02	1.21	Yes	No
Florence 03	<1	Yes	No
Florence 04	1.30	Yes	No
Florence 05	1.61	Yes	No
Georgetown 01	1.60	Yes	No
Greenville 01	1.59	Yes	No
Greenwood 50	1.05	Yes	No (Most schools over 70%)
Greenwood 51	1.13	Yes	Yes* (1 school is 81-90%)
Greenwood 52	1.82	Yes	No
Hampton 01	2.98	Yes	No
Hampton 02	1.17	Yes	No

Horry 01	1.50	Yes	No (All secondary schools are 91-100%)
Jasper 01	3.21	Yes	No
Kershaw 01	District is 1:1	Yes	Yes
Lancaster 01	2.11	Yes	No
Laurens 55	1.16	Yes	No
Laurens 56	1.03	Yes	No
Lee 01	Data missing	Data missing	Data missing
Lexington 01	1.02	Yes	No
Lexington 02	District is 1:1	Yes	Yes
Lexington 03	District is 1:1	Yes	Yes
Lexington 04	1.28	Yes	No
Lexington 05	1.08	Yes	No
Marion 10	4.48	Yes	No
Marlboro 01	1.81	Yes	No
McCormick 01	2.77	Yes	No
Newberry 01	1.52	Yes	No
Oconee 01	1.24	Yes	No
Orangeburg 03	1.53	Yes	No (0% across all schools)
Orangeburg 05	District is 1:1	Yes	Yes
Pickens 01	<1	Yes	No (Most secondary schools are 91-100%)
Richland 01	<1	Yes	No (All secondary schools are 91-100%)
Richland 02	1.11	Yes	No (Most secondary schools are 91-100%)
Saluda 01	1.07	Yes	No
Spartanburg 01	District is 1:1	Yes	Yes
Spartanburg 02	District is 1:1	Yes	Yes
Spartanburg 03	1.01	Yes	No
Spartanburg 04	1.53	Yes	No
Spartanburg 05	1.34	Yes	No
Spartanburg 06	<1	Yes	No
Spartanburg 07	1.14	Yes	No
Sumter 01	1.43	Yes	No
Union 01	1.54	Yes	No
Williamsburg 01	1.03	No	No
York 01	6.73	Yes	No
York 02	District is 1:1	Yes	Yes
York 03	2.86	Yes	No
York 04	1.68	Yes	No
SC Public Charter School District	4.16	Yes	No

Table 15. *Number of devices and students by school district. (2017 Technology Counts Survey and District Student Enrollment data[25])*

District	Number of Devices 2017	180-day Headcount 2016-17	Students Per Device
Abbeville 60	1439	3002	2.09
Aiken 01	2269	24527	10.81
Allendale 01	1340	1226	District is 1:1
Anderson 01	7287	9949	1.37
Anderson 02	3203	3783	1.18
Anderson 03	857	2577	3.01
Anderson 04	3135	2889	District is 1:1
Anderson 05	12702	12986	1.02
Bamberg 01	1520	1357	District is 1:1
Bamberg 02	636	699	1.10
Barnwell 19	637	636	District is 1:1
Barnwell 29	459	883	1.92
Barnwell 45	426	2201	5.17
Beaufort 01	22712	21731	District is 1:1
Berkeley 01	42722	34357	<1
Calhoun 01	1776	1754	District is 1:1
Charleston 01	25414	49183	1.94
Cherokee 01	7350	8906	1.21
Chester 01	4510	5202	1.15
Chesterfield 01	810	7129	8.80
Clarendon 01	1164	775	District is 1:1
Clarendon 02	3230	2933	District is 1:1
Clarendon 03	537	1238	2.31
Colleton 01	2933	5715	1.95
Darlington 01	8045	10051	1.25
Dillon 03	130	1656	12.74
Dillon 04	2084	4144	1.99
Dorchester 02	8980	25882	2.88
Dorchester 04	1955	2274	1.16
Edgefield 01	2140	3462	1.62
Fairfield 01	2130	2761	1.30
Florence 01	14963	16299	1.09
Florence 02	950	1145	1.21
Florence 03	4632	3631	<1
Florence 04	519	675	1.30
Florence 05	806	1299	1.61
Georgetown 01	5943	9496	1.60
Greenville 01	48046	76312	1.59
Greenwood 50	8443	8883	1.05
Greenwood 51	840	953	1.13
Greenwood 52	867	1582	1.82
Hampton 01	780	2326	2.98
Hampton 02	629	734	1.17

[25] https://ed.sc.gov/scdoe/assets/File/data/student-counts/Student_Headcounts/documents/DistrictTotalsbyGrade_d180_2015-16WEB.xlsx

Horry 01	28992	43556	1.50
Jasper 01	844	2709	3.21
Kershaw 01	13786	10682	District is 1:1
Lancaster 01	6122	12896	2.11
Laurens 55	5038	5864	1.16
Laurens 56	2925	3010	1.03
Lee 01	0	2016	Data missing
Lexington 01	25112	25571	1.02
Lexington 02	9700	8865	District is 1:1
Lexington 03	1879	2035	1.08
Lexington 04	2750	3526	1.28
Lexington 05	15950	17300	1.08
Marion 10	1065	4772	4.48
Marlboro 01	2230	4046	1.81
McCormick 01	285	789	2.77
Newberry 01	4016	6100	1.52
Oconee 01	8313	10325	1.24
Orangeburg 03	1809	2767	1.53
Orangeburg 04	1024	3701	3.61
Orangeburg 05	7696	6626	District is 1:1
Pickens 01	16497	16193	<1
Richland 01	24044	23850	<1
Richland 02	24870	27676	1.11
Saluda 01	2100	2255	1.07
SC Public Charter School District	4973	20679	4.16
Spartanburg 01	5160	5068	District is 1:1
Spartanburg 02	11656	9970	District is 1:1
Spartanburg 03	2900	2932	1.01
Spartanburg 04	1775	2720	1.53
Spartanburg 05	6199	8306	1.34
Spartanburg 06	11540	11356	<1
Spartanburg 07	6483	7369	1.14
Sumter 01	11827	16925	1.43
Union 01	2605	4016	1.54
Williamsburg 01	3937	4059	1.03
York 01	771	5187	6.73
York 02	7376	7537	District is 1:1
York 03	6193	17720	2.86
York 04	8425	14151	1.68

Table 16. *Abbeville Plaintiff Districts reported spending on technology infrastructure. (Technology Counts 2017)*

District Name	TOTAL PER DISTRICT		Abbeville Law Suit Allocated Reported Amount
Abbeville 60	$180,713.37		$180,713.37
Allendale	$238,973.37		$238,973.37
Bamberg 01	$273,915.22		$273,915.22
Bamberg 02	$114,564.16		$175,818.32
Barnwell 19	$420,573.37		$420,573.37
Barnwell 29	$146,003.37		$146,003.37
Barnwell 45	$878,028.73		$878,028.73
Berkeley	$1,386,027.17		$1,386,027.17
Chesterfield	$674,382.02		$720,294.69
Clarendon 01	$90,864.53		$304,070.97
Clarendon 02	$1,657,773.37		$1,657,773.37
Clarendon 03	$209,760.45		$258,373.37
Dillon 03	$54,091.70		$267,828.37
Dillon 04	$1,527,805.05		$1,527,805.05
Florence 01	$247,741.77		$247,741.77
Florence 02	$138,973.37		$138,973.37
Florence 03	$415,503.37		$415,503.37
Florence 04	$267,077.43		$340,795.53
Florence 05	$138,973.37		$138,973.37
Hampton 01	$292,973.37		$292,973.37
Hampton 02	$445,773.37		$445,773.37
Jasper	$192,573.37		$192,573.37
Laurens 55	$209,500.00		$220,171.45
Laurens 56	$463,973.37		$463,973.37
Lee	$285,377.94		$402,825.87
Lexington 04	$159,308.63		$341,173.37
McCormick	$247,825.97		$247,825.97
Marion 10	$1,276,528.37		$1,276,528.37
Marlboro	$1,511,913.52		$1,511,913.52
Orangeburg 03	$344,866.43		$344,866.43
Orangeburg 04	$260,653.37		$260,653.37
Orangeburg 05	$707,882.91		$738,435.37
Saluda	$203,153.37		$203,153.37
Williamsburg	$138,973.37		$138,973.37
TOTALS:	**$15,803,022.55**		**$16,800,000.09**

APPENDIX B: Profile of the South Carolina Graduate

PROFILE OF THE

South Carolina Graduate

WORLD-CLASS KNOWLEDGE

Rigorous standards in language arts and math for career and college readiness

Multiple languages, science, technology, engineering, mathematics (STEM), arts and social sciences

WORLD-CLASS SKILLS

Creativity and innovation

Critical thinking and problem solving

Collaboration and teamwork

Communication, information, media and technology

Knowing how to learn

LIFE AND CAREER CHARACTERISTICS

Integrity • Self-direction • Global perspective • Perseverance • Work ethic • Interpersonal skills

Adopted by: SC Arts Alliance, SC Arts in Basic Curriculum Steering Committee, SCASCD, SC Chamber of Commerce, SC Council on Competitiveness, SC Education Oversight Committee, SC State Board of Education, SC State Department of Education, TransformSC Schools and Districts.

transformSC tomorrow won't wait for our students

AN INITIATIVE OF SOUTH CAROLINA COUNCIL ON COMPETITIVENESS

APPENDIX C: Additional Information

Procurement Services Website

Agency Users
Contract Search – Information Technology Statewide Contracts
[- show all contracts - \/][Filter List]

Security and Access Control

- Security and Access Control

Audio Visual Equipment

- Audio Visual Products and Services

Biometric Time Keeping

- Biometric Time Keeping

Communications Equipment and Services

- Audio Bridge
- Cable and Wiring Services
- Contact Center
- Integrated Voice Response (IVR)
- Legacy PBX Telephone Services
- Local Telephone Services
- Long Distance Rates
- Mobile Radio Rates - Harris
- Mobile Radio Rates - Motorola
- Pager Rates
- Palmetto 800 System User Fees
- Satellite Telephone Services
- Server Hosting
- Vendor Provided Internet Access Rates
- Voice Over Internet Access Rates
- VoIP and Messaging Services (2015)
- Wireless Communication Rates

Constituent Management Services

- Constituent Management Service

Copiers - Lease or Purchase (Black & White and Color)

See Output Devices

Digital Fingerprinting

- Digital Fingerprinting

Document Management

- Government Owned EDMS - Hyland Products Updated
- Government Owned EDMS - Team IA (Team IA)
- Government Owned EDMS – Hyland LLC (formerly Lexmark) Updated
- Government Owned EMDS - Palmetto Microfilm

eProcurement

- NASPO eProcurement Services

Electronic Equipment Recycling

- Electronic Equipment Recycling

Electronic Transcript Services
- Electronic Transcript Services

Firewall Equipment
- CheckPoint Firewall - Fixed Price Bid
- Cisco Firewall
- Juniper Firewall

Hardware Maintenance Manager
- Hardware Maintenance Manager

Hyper Converged Integrated Systems
- Hyper Converged Integrated Systems

In-Car/In-Bus Digital Recording Systems
- In-Car/In-Bus Digital Recording Systems

Information Security and Privacy Services
- Application Security Assessment and Remediation - Lot 6
- Distributed Denial of Service Lot 4
- Privacy Support Services Lot 7
- Security Assessments and Other Consulting - Lot 5
- Security Incident Response Management - Lot 2
- Security Infrastructure Support - Lot 3
- Security Monitoring Analytics Services Lot 1

IT Equipment Leasing
- IT Equipment Leasing

IT Temporary Staff Augmentation
- IT Temp Staff Augmentation Updated

Learning Content Management
- Learning Content Management Systems

Legal Research Subscription Services
- Westlaw Legal Research

Mail Equipment
- NASPO Mail Equipment

Managed Print Services
- Managed Print Services

Mobile Device Management
- Mobile Device Management (AT&T Airwatch, Mobile Iron, Maas360 and Sirius Citrix)

Network Hardware
- Network Hardware - Aerohive
- Network Hardware - Avaya
- Network Hardware - Barracuda
- Network Hardware - Brocade
- Network Hardware - Cisco
- Network Hardware - Citrix Netscaler
- Network Hardware - Extreme
- Network Hardware - HPE
- Network Hardware - Juniper
- Network Hardware - Palo Alto
- Network Hardware - Xirrus

One Card Identification System
- One Card Identification System

Output Devices (Includes purchase, lease, cost-per-copy)

- Copiers and multi-function devices

PCs, Servers, Storage, Peripherals (printers)

In accordance with 2017 S.C. Act No. 97, Part 1B, Section 117.121, and through the established governance processes, has defined standards for End User Computing Devices (desktops and laptops). Pricing for these standards were solicited from all state term contract holders. **Dell**, **Lenovo**, and **Panasonic** provided the lowest pricing for the standards. Agencies subject to the Act ("Agencies") must place orders with one of the three suppliers. Public Procurement Units (including Higher Educational Institutions and political subdivisions) not covered under the Act may choose to comply with the standards, but are not required, and can place orders for these items with any contractor. Agencies desiring to purchase alternative product(s) from the standard must go through the established exception process. For information regarding the exception process, please contact your Agency Relationship Manager or email the Program Management Office at pmo@admin.sc.gov.

- Apple Inc – Desktops, Laptops, Tablets, and Peripherals (Printers)
- Dell – Desktops, Laptops, Tablets, Servers, Storage, and Peripherals (Printers)
- Hewlett Packard Enterprise – Servers, Storage, and Peripherals
- Howard-Desktops, Laptops, Servers, Storage, and Peripherals (Printers)
- HP Inc- Desktops, Laptops, Tablets, and Peripherals (Printers)
- IBM Corporation – Servers, Storage, Peripherals, Middleware
- Lenovo Global Technology - Servers Band & Storage
- Lenovo-Desktops, Laptops, Tablets & Peripherals (Printers)
- Microsoft - Laptops, Tablets, and Peripherals (Printers)
- Nimble Storage – Storage and Peripherals
- Panasonic Communications Company-Laptops, Tablets and Peripherals (Printers)
- Pure Storage – Storage and Peripherals
- Toshiba – Laptops, Tablets, and Peripherals (Printers)
- Transource – Lexmark Printers only

Printers

See Output Devices

Printing Services

- Digital Print and Quick Copy

Records Conversion, Storage, and Destruction (Shredding)

****LOT 5, Conversion to Microfilm/Microfiche has been awarded below****
****LOT 1, Records Shredding/Destruction has been awarded below****
****Lot 2, Records Storage/Retrieval has been awarded below****

- Records Conversion Books, Notebooks, Maps, & Drawings -- Starpoint Global
- Records Conversion Palmetto Microfilm
- Records Conversion Paper -- Advanced Imaging
- Records Conversion Paper -- SourceCorp BPS
- Records Shredding and Destruction
- Records Storage & Retrieval

Recovery Audit Services

- Recovery Audit

Reverse Auction Services

- Reverse Auction Services

Scanners

See Output Devices

Security Products

- Certes Network Hardware & Software
- IBM QRadar

Security Software Products

These Software Contracts have products that have been approved by DIST for data security purposes.

- CA Technologies - Privilege User Management
- Check Point Security Products
- CyberArk Software - Privilege User Management
- Dell QuestOne - Privilege User Management
- FireEye Security Software
- ForeScout CounterACT
- Fortinet Security Software
- Gemalto - Two Factor Authentication Software
- Juniper Security Products
- LogRhythm
- McAfee Software & Hardware
- QualysGuard - Vulnerability Security
- Rapid7 - Vulnerability Security
- Safenet - Two Factor Authentication Software
- Safenet Encryption Software and Services
- Secunia Patch Management Software
- Tenable Security Software
- Trend Micro
- WinMagic - Document Security

Servers

Please see PCs, Servers, Storage, Peripherals (printers)

Shredders

- Shredders

Small Applications Development

- Small Applications (software) Development

Software

- Citrix
- Condusiv
- Corel
- FileMaker
- Idera
- Microsoft

- SAP

Storage Products

For WSCA SAN, please see PCs, Servers, Storage, Peripherals (printers) section above.

- EMC and RSA Security Products - Fixed Price Bid
- Hitachi Data Systems SAN - Fixed Price Bid
- NetApp SAN - Fixed Price Bid

Third Party Consulting

- Third Party Consulting

Toner Cartridges & Printing Supplies

- HP, Kyocera, Dell, Lexmark, Ricoh and Xerox
- Remanufactured Toner Cartridges

Traffic Signaling Software and Equipment

- Traffic Signaling Software and Equipment

Training

- Classroom Training

Video Conferencing Equipment

- Polycom Video Conferencing

Web Conferencing Services

- Web Conferencing

Web Portal

- Web Portal

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