REPORT ON STATUS OF TECHNOLOGY USAGE IN VIRGINIA SCHOOLS

TO THE CHAIRMEN OF THE HOUSE APPROPRIATIONS AND SENATE FINANCE COMMITTEES

VIRGINIA DEPARTMENT OF EDUCATION
OFFICE OF TECHNOLOGY AND VIRTUAL LEARNING
DIVISION OF INSTRUCTION
NOVEMBER 1, 2017

COMMONWEALTH of VIRGINIA

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November 1, 2017

The Honorable S. Chris Jones
Chairman, House Appropriations Committee
P. O. Box 5059
Suffolk, Virginia 23435-0059

The Honorable Emmett Hanger, Jr
Co-Chairman, Senate Finance Committee
P. O. Box 2
Mount Solon, Virginia 22843-0002

The Honorable Thomas K. Norment, Jr.
Co-Chairman, Senate Finance Committee
P. O. Box 6205
Williamsburg, Virginia 23188

Dear Delegate Jones and Senators Norment and Hanger:

I am pleased to submit the holistic review of the statewide use of technology in the classroom, and all sources of digital content development and online learning, such as virtual courses and innovative blended learning language and literacy technology options, pursuant to Item 137.H of Chapter 836, 2017 Acts of Assembly.

If you have questions or require additional information relative to this transmittal, please do not hesitate to contact Mark Saunders, Director, Office of Technology and Virtual Learning, at 804-786-0307 or Mark.Saunders@doe.virginia.gov.

Sincerely,

Steven R. Staples

SRS/MS/ce

Enclosure

c: The Honorable Terence R. McAuliffe
The Honorable Dietra Trent
Virginia Board of Education

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Introduction

Item 137.H of the 2016 Appropriation Act directs the Virginia Department of Education (VDOE) to provide a holistic review of the statewide use of technology in the classroom, all sources of digital content development, online learning such as virtual courses, and innovative blended learning language and literacy technology options. The review is to be reported to the Chairmen of the House Appropriations and Senate Finance Committees by November 1, 2017. As directed in Item 137.H, the review conducted by the VDOE included various types of technology used in the classroom at the time of the survey, such as personal computers, tablets, laptops, or other handheld devices; and how such technology were used with the various types of digital content or online options that support student academic improvement.

In support of this review, VDOE released two separate surveys regarding technology usage in Virginia between November 2016 and February 2017. One survey was provided to technology directors with questions about their school divisions, focusing on technology, infrastructure, and policies/procedures that support student academic achievement. The second was designed for individual schools, with an emphasis on how students use technology to enhance and support their academic achievement. Each school chose staff knowledgeable in the use and application of technology to answer the latter survey, though the role of selected staff varied based on a school's choice. Selected staff included instructional technology resource teachers (ITRTs), principals, librarians, and teachers, among others. Out of 132 school divisions, 128 responded (97 percent). Out of 1,933 schools, a total of 1,835 schools responded (95 percent).

This report provides an overview of survey results in three main areas: (1) Availability of Technology and Related Resources; (2) Access and Use of Technology and Related Resources; and (3) School Division Policies and Procedures. Detailed responses and response rates to all survey questions are available in the Division-Level Survey provided in Appendix A and in the School-Level Survey in Appendix B.

In addition to the two surveys, other data sources used for this report include VDOE annual report on virtual learning (included within the Board of Education's *Annual Report on the Condition and Needs of Public Schools in Virginia*) that provides information about the Virtual Virginia and Multidivision Online Provider programs and broadband connectivity capability information collected from school divisions.

Availability of Technology and Related Resources

Technology (Equipment and Electronic Infrastructure)

According to 2017 fall membership statistics collected by VDOE, there are 576,815 elementary school students, 287,000 middle school students, and 390,330 high school students in the state of Virginia. The average number of computers located in schools varied by school level: 414 in elementary schools, 770 in middle schools, and 1,009 in high schools. At all levels, an average of 90 percent of the computers in a school were available for student use Data on the age of computers show high schools had more computers that were less than one-year-old (21 percent) compared to middle school computes (18 percent) and elementary school computers (16 percent). Inversely, a larger percentage of elementary school computers (30 percent) were four years or older compared to middle school computers (26 percent) and high school computers (23 percent). See Figure 1.

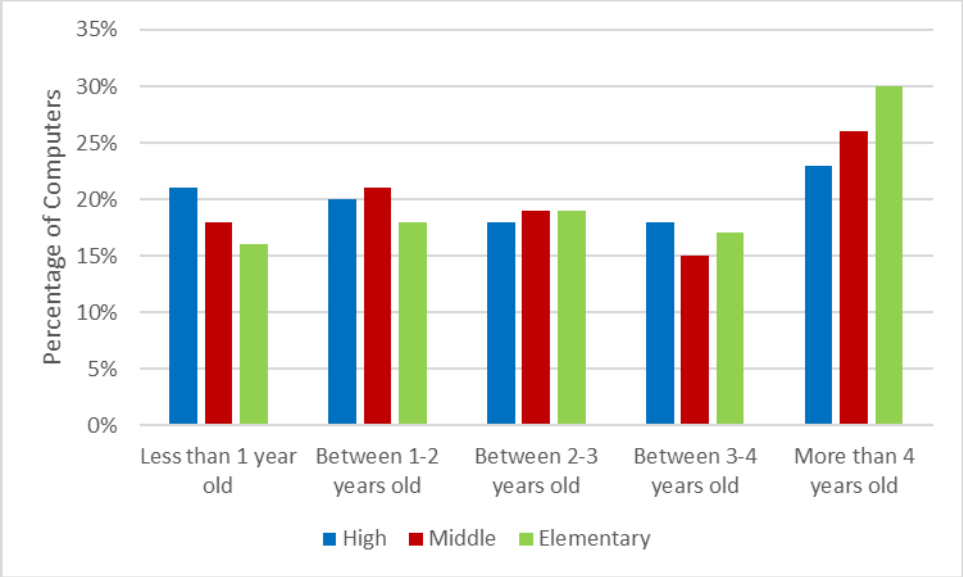

Figure 1: Age of Computers Available for Student Use

Out of the 128 responding school divisions, 123 school divisions answered a question about supplying devices such as laptops or tablets to their students: 116 (94 percent) supplied the devices, with 60 percent allowing students to take devices home. Additionally, out of the 1,835 responding schools, a total of 1,064 (58 percent) schools allowed students to access the Internet with student-owned devices, while at school.

In general, 97 percent of all schools provided access to Wi-Fi in classrooms and 94 percent provided access in other traditional learning areas such as libraries and labs. Access outside classrooms (cafeteria/hallways) was lower (90 percent) while access outside of the school building (athletic fields or open spaces) was much lower at 31 percent. See Figure 2.

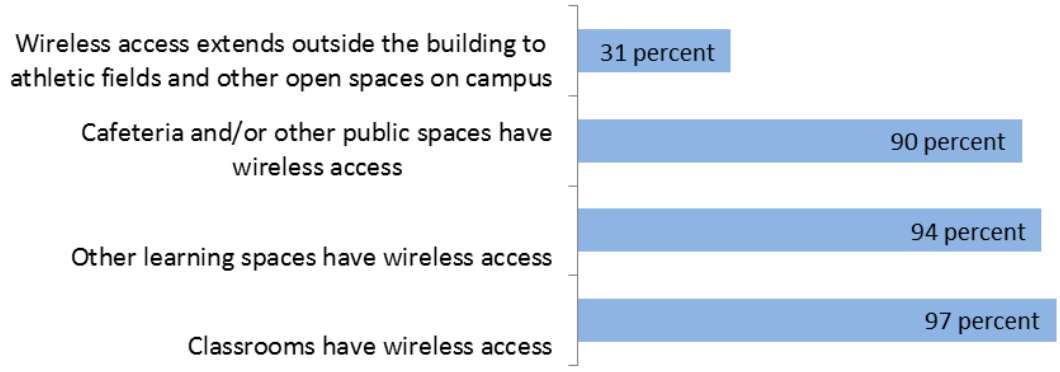

Figure 2: Description of Wireless Connectivity

Technology Personnel

Instructional technology resource teachers (ITRTs) are teachers with the primary responsibility of working with other teachers in order to help them integrate technology into their instructional practices. Among the 1,835 responding schools, a total of 1,780 (97 percent) schools had ITRTs who could work with teachers on integrating technology. However, the majority of those ITRTs could only use an average of 54 percent of their time working with teachers. In schools where ITRTs were only able to spend 50 percent or less of their time with teachers, only 57 percent of the teachers became significantly more proficient in the use of technology. Significantly more proficient is defined as an increase of 50 percent or more in proficiency as determined by survey respondents. In schools where ITRTs were able to spend over 50 percent of their time with teachers, 81 percent of teachers became significantly more proficient in the use of technology. In the schools where teachers became significantly more proficient by 96 percent-100 percent in the use of technology, about 67 percent were schools where the ITRTs were able to spend over 50 percent of their time with teachers.

Approximately 20 percent of school divisions reported not meeting the Standards of Quality requirement of having one Technology Support position for every 1,000 students. Among the responding school divisions, 43 percent reported meeting the standard and 37 percent reported as above the standard. Among school divisions that did not meet the standard, 65 percent were rural school divisions and 15 percent were large suburban school divisions. See Figure 3. Fifty-four percent had less than 3,000 students while seven percent had more than 50,000 students.

Overall, schools reported that 34 percent of technical issues were resolved immediately or almost immediately, while 12 percent took longer than a week to be resolved. All grade levels reported that, on average, students missed about 10 percent of instructional time because of technical issues.

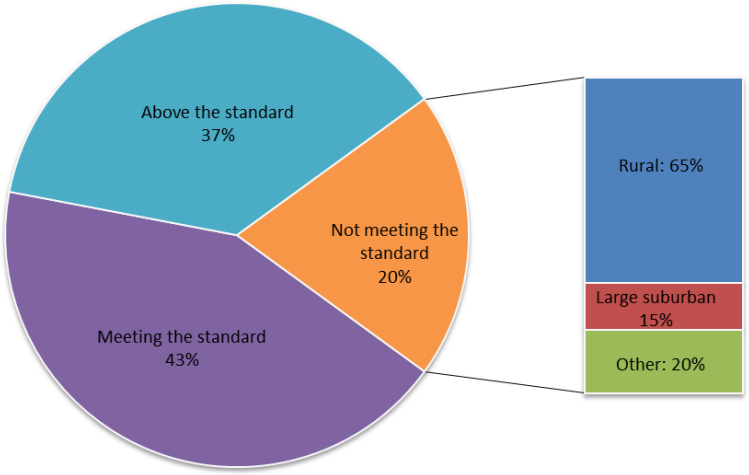

Figure 3: Division Survey Question - How does your ratio of technology support personnel (not including ITRTs) to students match the 1:1000 standard?

Additional support for technology comes from special education personnel who often are knowledgeable enough to help IEP teams in the evaluation and use of adaptive devices and services that may directly assist a student with a disability. Ninety-one percent of school divisions report having such a person on staff.

Digital Content Resources

School libraries provide digital content resources and spaces that support independent student learning. Among the digital content resources supplied are digital/virtual reference materials, licensed digital databases, digital video content, e-books, digital audio content, spaces to take online courses, production equipment for checkout, and spaces for small-group collaboration and charging digital devices.

An average of 90 percent of all K-12 schools provided access to digital materials (excluding textbooks) that were available on a subscription basis. This included materials

such as learning modules, videos, and simulations. However, K-2 schools were much lower than this average; only 48 percent provided access to such subscription-based materials. In addition to fee-based materials, Open Education Resources (OER) were used by many schools some of the time. For the survey, OER was defined as including two types of resources: free resources with a copyright license which prohibits teachers from editing them and open resources with a copyright license which allows teachers to edit and repurpose the resources to meet their needs.

Subject areas in which students across all three school levels were observed using OER for more than 25 percent of their learning resources were English, History and Social Sciences, Mathematics, and Science. See Figure 4.

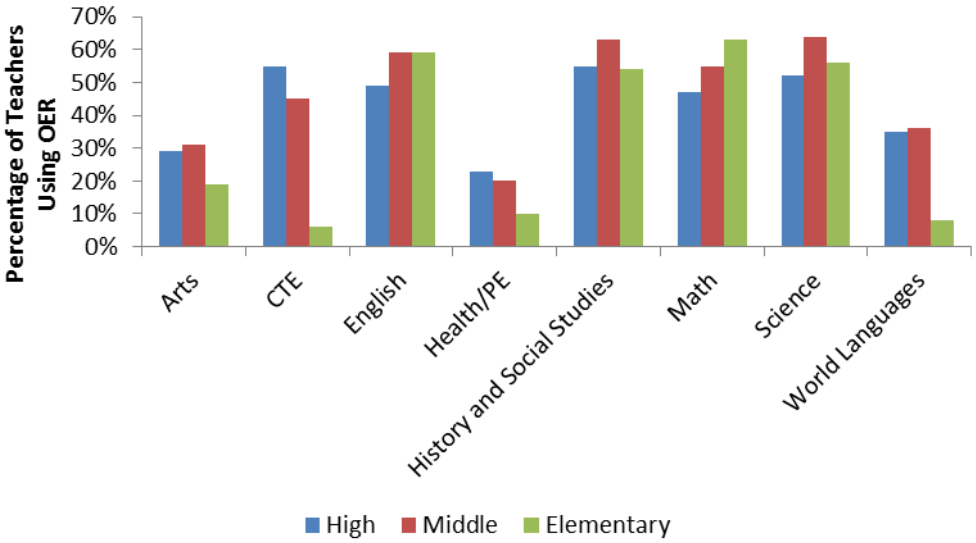

Figure 4: School Survey Question 17: Based on your observations, teachers use Open Education Resources (OER) for a significant part (25 percent or above) of their educational resources in which subject areas?

Online Learning Resources

Virginia students participate in online learning using a variety of methods and sources; such as fully online courses, self-contained online modules available for students to use as needed, and blended courses where students use online content under the guidance of a locally-based teacher. Based upon VDOE annual report on virtual learning, during the 2016-2017 school year, Virtual Virginia was used by 84 percent of high schools. Forty-two percent of middle schools allowed students to take Virtual Virginia courses for high school credit. Online courses and resources created by school divisions were used by 55 percent of high schools, 34 percent of middle schools, and 24 percent of elementary schools. Online courses and resources offered by approved private and nonprofit organizations (known as multidivision online providers) were used by 65 percent of high schools, 37 percent of middle schools, and 22 percent of elementary schools.

Access and Use of Technology and Related Resources

Student Access to Technology

The most common technology-based resource that students had access to was electronic storage space (offered by 86 percent to 93 percent of schools). The next most common resource was Internet-based resources (offered by approximately 90 percent of schools) purchased by schools for student access. An average of 64 percent of students had remote access to the technology-based resources. See the bold text in Figure 5.

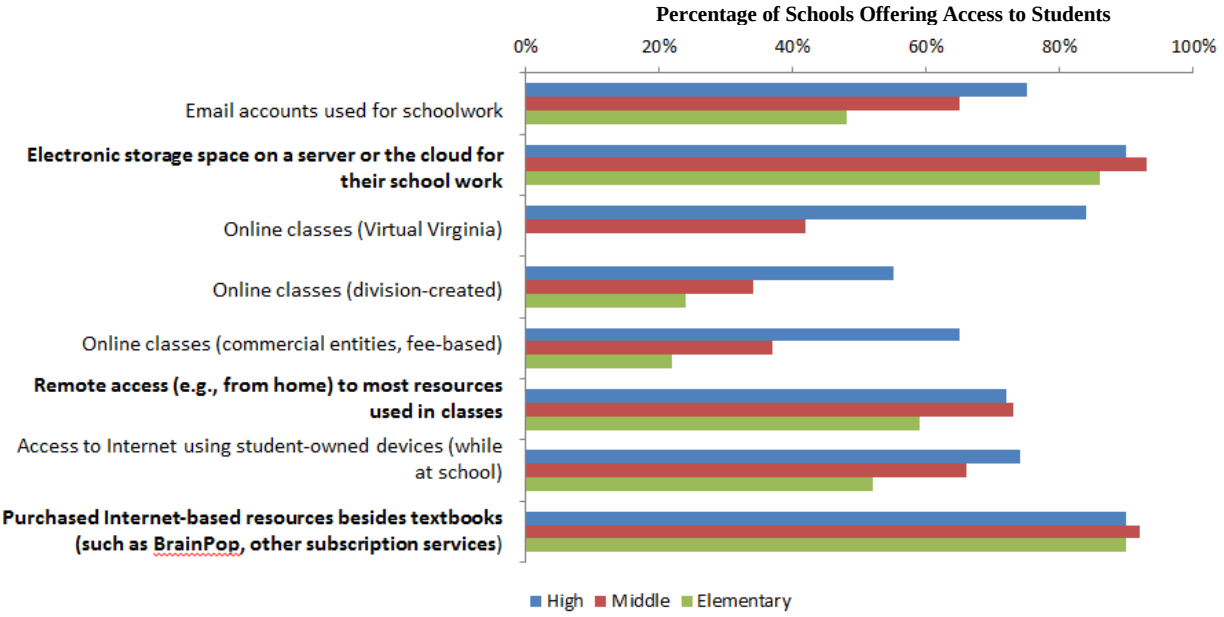

Figure 5: School Survey Question: Does your school offer students access to any of the following?

Student Use of Technology

In K-12 schools, an average of 95 percent to 96 percent of students at all levels used technology to practice and review subject topics, take formative and summative tests, and prepare for standardized testing. For elementary and middle students, the next two most common uses were extending learning with enrichment activities and online research. For secondary students, the next most common usage was to conduct online research. Other common uses of technology included communicating electronically about academic content with others, such as experts and peers, working collaboratively with other students, and using digitally-based models and simulations to explore complex systems and issues. See the bold text in Figure 6.

Students created and further developed products (original art and multimedia presentations) using technology as well. Students also created products for real-world audiences, such as their communities, local business and government personnel, subject experts from around the world, or peers inside and outside their own school division. See the bold text in Figure 6.

Secondary students had more opportunities than elementary and middle students to solve real-world problems (such as the development of a safe playground at a local park) and used real-world tools (such as Computer-Aided Design workstations, or 3-D printers). See the bold text in Figure 6.

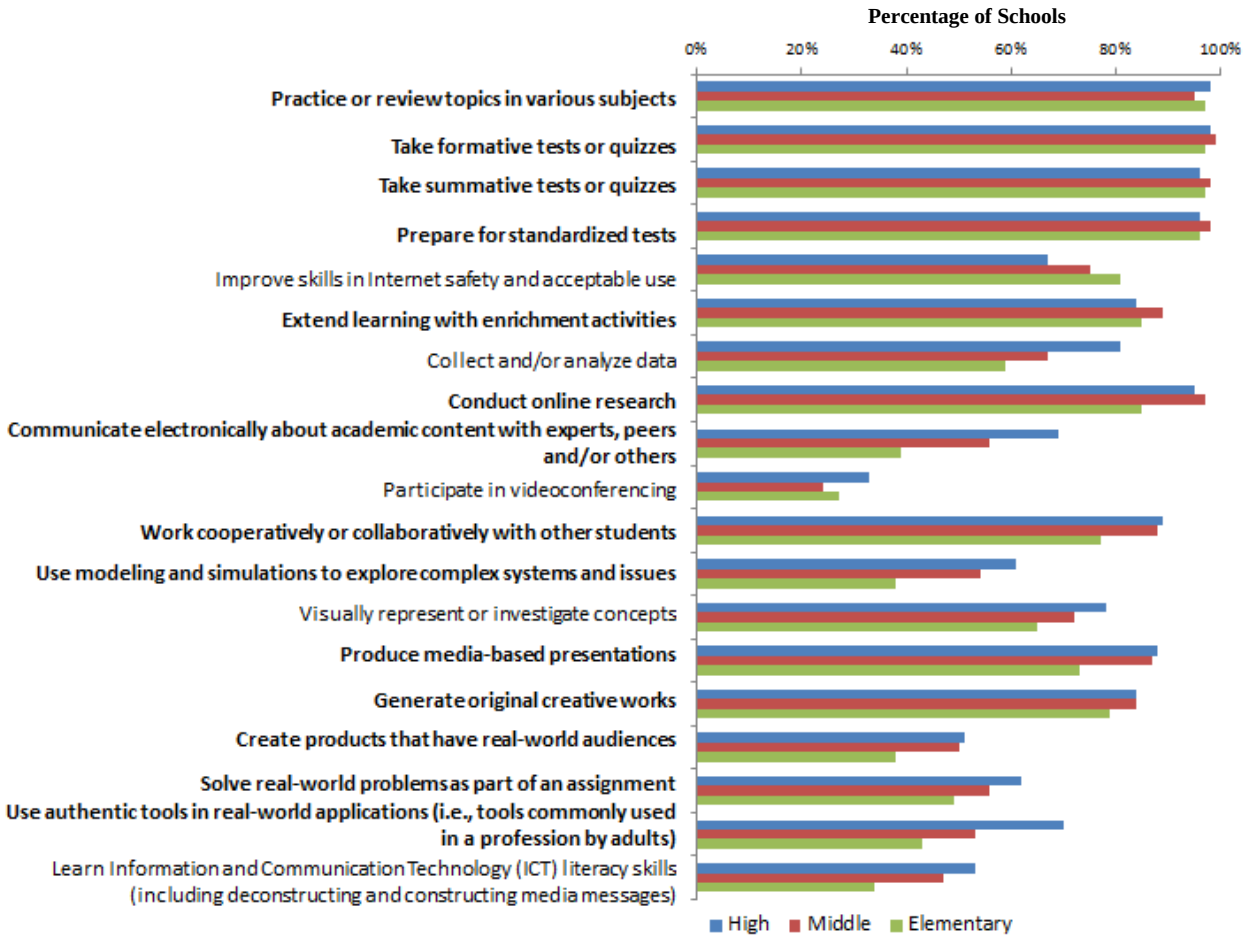

Figure 6: School Survey Question: How does the average student in your school use technology on a regular basis (at least several times per year)?

Use of Digital Content

The most frequent use of OER by students was in test preparation. An important benefit of OER is its use in differentiating and personalizing learning. However, use of OER for this purpose was low. See Figure 7.

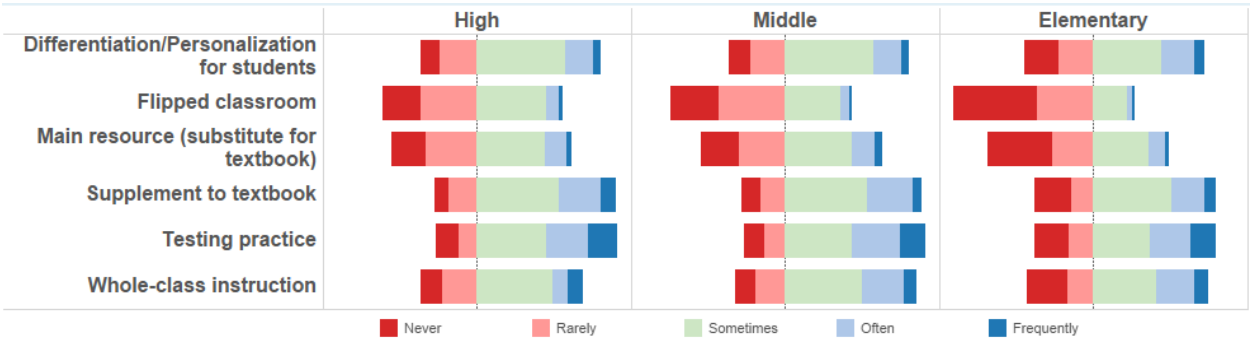

Figure 7: School Survey Question: How does the typical student in your school use Open Education Resources (OER) on a regular basis?

Several barriers to the use of OER were identified by respondents. The most prominent challenge was that finding good resources was too time-consuming (70 percent of respondents felt this was a challenge). Other significant challenges included resources that were too difficult to edit or repurpose (55 percent), lack of resources in particular subject areas (47 percent), resources that were too complicated to be used with current available equipment (44 percent), and no modeling available from other teachers (43 percent). See Figure 8. When asked about teachers creating and sharing OER within the state, respondents overwhelmingly identified "Too much time involved in creation" as the largest challenge (80 percent). However, some teachers had created OER and had shared them within their own schools or divisions. Only 25 percent of teachers who created OER had shared them at the state level. In Virginia, eMediaVA currently serves the role of repository for OER materials. Statewide there are 158,398 eMediaVA user accounts, with about 42,150 of those accounts considered active (monthly use).

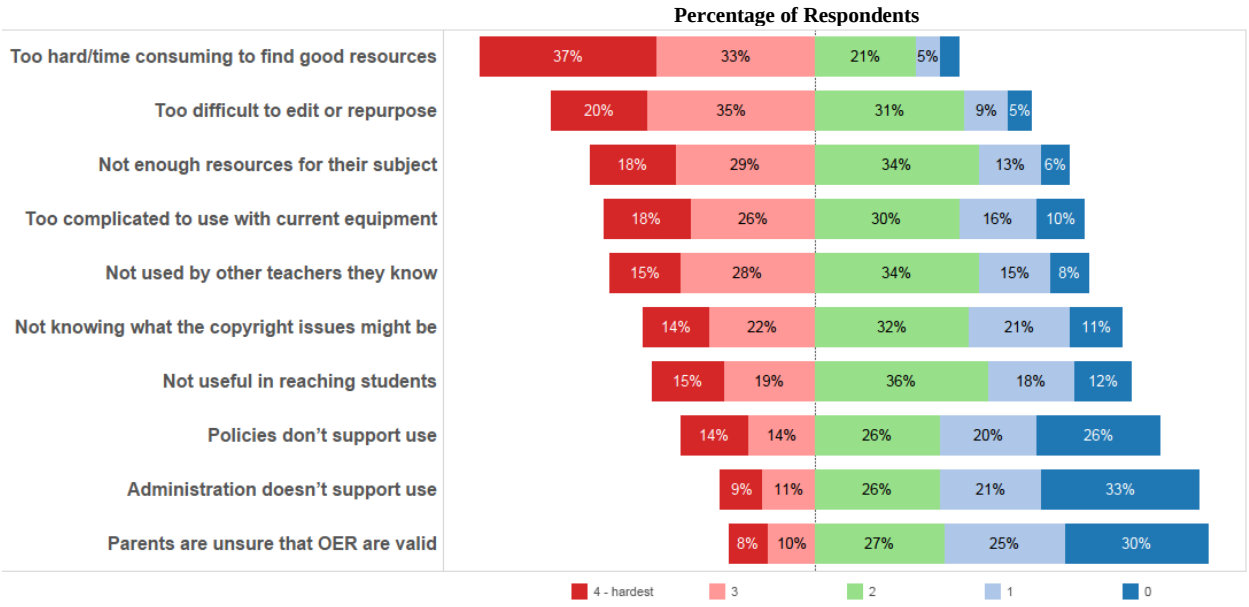

Figure 8: School Survey Question: How difficult are the challenges that keep teachers from using Open Education Resources (OER)?

Use of Online Learning Resources

Students used online courses to fulfill the need for core subject area and elective course content. Online courses allowed students flexibility in their schedules and also provided course choices that were not available at their schools. Sixty-five percent of the course enrollments in multidivision online provider courses for the 2016-2017 school year were for core subject area courses. For both multidivision online provider and Virtual Virginia courses, popular electives included World Languages, Advanced Placement subjects, and a wide variety of special interest elective courses.

Some students may not be comfortable taking fully online courses. Therefore, blended courses, which incorporate some online course features and are facilitated by a

locally-based classroom teacher, were available in at least 50 percent of schools. A popular course for this approach was the Economics and Personal Finance course offered through the Virtual Virginia program (via the learning management system). In 2016-2017, a total of 96 teachers around the state also incorporated Algebra I and Geometry online course elements from Virtual Virginia into their classroom instruction to provide a blended learning experience for students.

Blended learning options were available in over 50 percent of school divisions. However, whether a division or school considered the options innovative depended upon the interpretation of innovation by the division or school. Therefore, reliable data regarding innovative blended learning language and literacy technology options were not collected, as the interpretation of what would be considered innovative varied among school divisions.

School Division Policies and Procedures

Eighty-nine percent of school divisions reported having a computer network disaster recovery plan. Division technology committees in 67 percent of the school divisions had procedures for developing, reviewing, and evaluating school division procedures and policies related to technology use in the schools. The Acceptable Use Policy (AUP) for school divisions included information about Cyberbullying (88 percent), Cybercitizenship (87 percent), Social media (83 percent), and Student-owned devices (66 percent). See Figure 9.

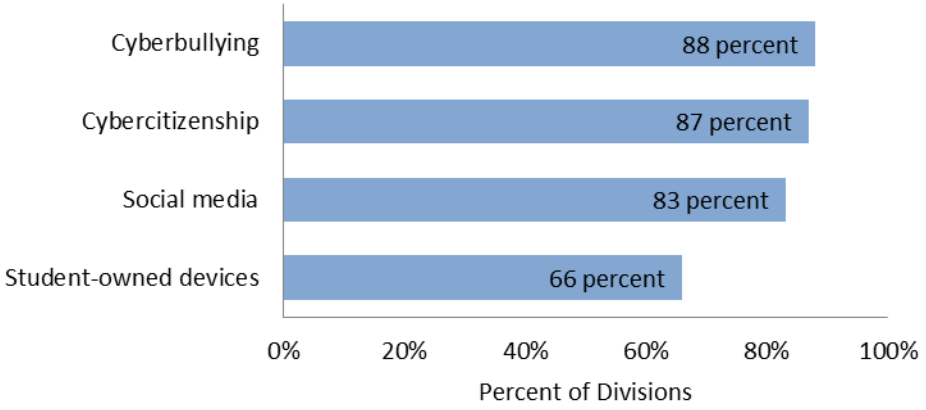

Figure 9: Division Survey - What does your Acceptable Use Policy (AUP) cover?

Summary

Overall, survey results show a high level (90 percent of respondents) of access to technology by students, with over half of all students allowed to take computers home or bring their own devices to school. The computers in the elementary schools are, on average, older than those used at the middle and high school levels.

Staff knowledgeable in the use and application of technology provide vital support for the use of technology in schools. Increases in time that Instructional Technology Resource Teachers (ITRTs) are able to work with teachers in schools contribute to a higher percentage of teachers who are proficient in their use of educational technology. Technical issues are addressed quickly enough to avoid instructional time loss because of technical issues. Additionally, the majority schools meet the Standards of Quality requirement for Technology Support Personnel.

The majority of students have access to technology and a variety of technology-based learning resources. The surveys show a high rate of technology use in the area of test preparation and completion, and also in areas having to do with communication, collaboration, and creation. Secondary students use of real-world technology tools and addressing real-world problems using technology was at a high rate.

A high percentage of schools used digital content of some sort, with OER being used by some schools at least some of the time and in all content areas. Teachers identified several challenges to both using and creating OER, with a lack of time being the most frequently cited barrier. Only 25 percent of those teachers who have created OER have shared them at the state level.

There was significant use of online learning options offered via Virtual Virginia and Multidivision Online Providers. Blended learning options were offered in 50 percent of Virginia schools, with the Virtual Virginia Economics and Personal Finance being the most popular option among courses.

The majority of divisions had a computer network disaster recovery plan along with procedures and policies for reviewing and evaluating technology usage by faculty, staff, and students. Divisions also had an up-to-date Acceptable Use Policy that provide guidelines to faculty, staff, and students on the use of technology.

Appendix A

Division-Level Survey
(128 Divisions responded to the survey)

Instructions:
Please note: several questions in this survey will require your best guess or informed opinion. All questions in this survey relate to your division only. A separate survey for the school-level personnel gathers school-level information.
"During the past year" means during the past school year (2015-2016) and covers approximately August 2015-July 2016.

1. **Does your division have any free Wi-Fi networks (sponsored by community organizations, businesses or other entities) outside of schools?**
   Yes: 38%
   No: 60%
   Other: 2%
   Our utility provider provides wi-fi at athletic fields and parks; We are in the process of working with MidAtlantic Broadband and Microsoft

2. **If yes, about what percentage of your students (in your estimation) take advantage of the free Wi-Fi networks outside of schools?**
   Percentage (average of those answering yes to previous question): 29%

3. **Do you have currently, or are you currently pursuing, a partnership with other local, state or national entities to provide free Wi-Fi access outside of schools? This may include grants or other funding received for such a purpose.**
   Choose all that apply:
   None at this time: 70%
   Local: 23%
   Regional: 7%
   State: 3%
   National: 3%
   Other:
   We have leased 500 mifis for students to take home; We have looked into this and will continue to do so; VPSA; We are in the process of working with MidAtlantic Broadband and Microsoft; investigating but no active projects at this time; Comcast offers a reduced rate of internet to our low income families; Not at this time, but as we build our 1-1 initiative during this year, we plan to address this need; Our wireless network is available for free; We started something with VDOE but it never went past the discussion stages

If you are providing school-owned devices to students, please answer the following questions. If not, please move to the NEXT page by selecting that button below. The

devices covered in this section refer to general use devices such as laptops or tablets, rather than specialized use devices such as graphing calculators or digital cameras.

4. **Do your students share devices?**
   Yes: 66%
   No: 34%

5. **Can students take the provided devices outside of the school?**
   Yes: 60%
   No: 40%

6. **Are students allowed to customize their provided device in minor ways (changing font style, adding background images, etc.)?**
   Yes: 70%
   No: 30%

7. **Can students add at least some apps, software or other items to their provided device?**
   Yes, with no restrictions: 16%
   Yes, with pre-approval: 42%
   No: 38%
   Other: 4%
   Google Education Apps; students can add web clips; When technician or ITRT approves and assists; iPads - No, Chromebooks -Yes, Desktops – Yes; Yes, with restrictions

8. **Is student work saved on the provided device or in the cloud?**
   Device: 1%
   Server: 6%
   Cloud: 29%
   Some combination of these: 64%

The following questions relate only to division-created or sponsored professional development. Please note that questions about school-created or sponsored professional development are being asked in the survey for school based personnel.

9. **In the past year, about how many hours of division-based professional development (not just in technology but including all professional development) were offered to teachers/administrators? This includes professional development that was provided to everyone or to specific groups.**
   Number: 1036 (average hours of PD offered)

10. In the past year, what percentage of division-based professional development opportunities that were offered focused on technology integration with instruction?

Percentage: 36%

11. What percentage of the division-based professional development (focused on technology integrated with instruction) were offered in these ways? (Please enter a whole number without using the percentage symbol.)

Purchased from vendor (or included in existing contract with vendor): 12%
After-school/pre-school workshops: 26%
All-day: 18%
Weekend: 2%
In-depth focus on subject area: 21%
Hands-on learning: 37%
Just-in-time sessions (face-to-face or video): 17%
Mentoring (one-to-one or one-to-few): 19%
Modeling: 19%

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12. Does your division have special education personnel who are knowledgeable enough to help IEP teams in the evaluation and use of adaptive devices and services that directly assist a child with a disability?

Yes: 91%
No: 9%

13. How does your ratio of technology support personnel (not including ITRTs) to students match the 1:1000 standard?

Percentage: 60% (average for all divisions)
20% reported being below standard; 43% reported meeting standard; 37% reporting being above standard

14. Does your division have archiving and disaster-recovery plans for electronic records?

Yes: 89%
No: 11%

15. For what does your Acceptable Use Policy (AUP) cover policies? (Please check all that apply.)

Social media: 83%
Cybercitizenship: 87%
Cyberbullying: 88%
Student-owned devices: 66%
Other: 0%
We use the latest VSBA provided policies; Abuse of internet; These are addressed in the student code of conduct; 1 to 1 documentation provides direction for

student owned devices; Google Apps for Education; AUP is currently under revision/update; Code of Conduct

16. Does your division technology committee have a regular procedure for reviewing, developing and evaluating division procedures and policies related to technology use in the schools?

Yes: 67%
No: 24%
Other: 9%
Due to size of district, there is no formal technology committee. Meetings of stakeholders, who vary depending on issue, occur to discuss specific needs/issues including technology purchases, instructional technology, and specific technology needs, ideas, and programs; discussed periodically; We review these at the meetings when needed, so YES, but NO in the fact that there is no template or general method for submitting it. It's just brought up at the meetings; Infrequent; We discuss during our Technology plan committee; Committee was recently created; as needed; Department does this, not a technology committee; ad hoc committee that works as needed; Technology Personnel do not handle policies, only suggestions; as needed (3)

17. What data is supplied by the school division to the division leadership and/or school board for decision-making related to technology? (Please choose all that apply.)

School technology plan updates: 90%
Professional development completion for staff: 77%
Technology Integrated lesson plans: 52%
Student formative assessment evaluation scores: 63%
Student summative assessment evaluation scores: 73%
Student surveys regarding technology: 52%
Teacher surveys regarding technology: 71%
Parent surveys regarding technology: 45%
Outreach activities for technology: 38%
Incident reports addressing AUP infractions: 45%
Guidance counselor reports: 26%
Librarian reports: 27%
Principal reports: 55%
Other:
Innovation Reports and Modeling; student, teacher and parent focus groups; School Board office staff meet periodically throughout the year to discuss projects, program status, issues, concerns, future plans, etc. All technology staff, including the District ITRT, attend these meetings to share information with division leadership; Six Year Comprehensive Plan and Secondary Comprehensive Program of Studies; technology discussed as needed – safety; IT Dept Reports; long range plans, grant funding; Technology Service Request ticket system tracks all repairs

18. In the past year, what percentage of students met the division-determined standard of technology literacy by the 8th grade?
Percentage: 85%

19. In the past year, what percentage of teachers met the Technology Standards for Instructional Personnel (TSIPs)?
Percentage: 95%

20. In the past year, what percentage of administrators met the Technology Standards for Instructional Personnel (TSIPs)?
Percentage: 93%

21. In the past year, what percentage of librarians met the Technology Standards for Instructional Personnel (TSIPs)?
Percentage: 93%

For the following questions:
"OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge." -Hewlett Packard Foundation -
NOTE: Free Educational Resources are not considered OER because they do not allow others to edit or repurpose the resource in any way. However, for the purposes of this survey we are combing the two types of resources under "OER."

22. Are you familiar with Open Education Resources?
Yes: 88%
No: 13%

23. Does the division currently support teachers who use OER, by doing such things as linking to recommended OER that support particular SOL or providing guidance about choosing effective OER?
Yes: 64%
No: 36%

24. Is your division considering or investigating the expansion of the use of OER with the next two years? Answer only the row that best describes your division.
Currently Using OER: Yes/No: 87%/10% *(81 respondents)*
Not currently using OER: Yes/No: 55%/27% *(46 respondents)*

25. What challenges do you see or expect to see in the creation and sharing of teacher OER through your own division?

Finding a place to share resources online: 34%
Unsure of copyright issues: 56%
Too much time involved in creation: 64%
Lack of reward: 30%
Potential criticism from others and/or damage to a teacher's reputation: 13%
Restrictive or unclear division policies: 20%
Other:
Making sure alignment with Virginia Standards of Learning and Appropriate Rigor; Need to know more about this topic; Understanding whether it is more valuable to teachers to create lessons or create access to content for them to continue to create lessons; I do not have enough information to answer this question; Support from state; linking to resource that not CIPA compliant or in the gray area; Training; Lack of communication; too much staff turnover; Little to no challenges ,since the topic is underutilized; validation, time to source materials, training; I think, and mention the need to always ensure that they are appropriately aligned with our Standards since so many things out there are geared toward Common Core; Lack of knowledge; General distrust of free resources, as opposed to paid; Professional development on the use of OER; Curating the OER resources; Awarding credit

Appendix B

School-Level Survey
(1835 schools responded; 98 schools did not respond

Question 1	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Estimate the number of LAN/Internet-accessible school-owned computers (including laptops, netbooks, and mobile devices) that are located in instructional settings (e.g, classrooms, portable carts, media centers, labs, etc.) Please enter a whole number.	1009	770	414	507	307	85	275	590
	Values represent averages among responding schools.							

Question 2	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Of these, what percentage are available to students for learning in your school?	90%	90%	91%	88%	88%	76%	79%	90%
	Values represent averages among responding schools.							

Question 3	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Of these devices available for students, what percentage are (please enter a whole number without a percentage symbol and ensure your total adds up to 100)								
Less than 1 year old	21%	18%	16%	14%	25%	7%	12%	17%
Between 1-2 years old	20%	21%	18%	16%	22%	22%	14%	19%
Between 2-3 years old	18%	19%	19%	21%	17%	34%	20%	19%
Between 3-4 years old	18%	15%	17%	15%	10%	12%	12%	17%
More than 4 years old	23%	26%	30%	35%	26%	25%	42%	28%
	Values represent averages among responding schools.							

Question 4	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Describe your school's wireless connectivity (check all that apply):								
Classrooms have wireless access	97%	99%	97%	97%	100%	87%	100%	97%
Other learning spaces have wireless access	93%	98%	95%	90%	85%	78%	88%	94%
Cafeteria and/or other public spaces have wireless access	90%	94%	90%	79%	85%	61%	82%	90%
Wireless access extends outside the building to athletic fields and other open spaces on campus	35%	32%	30%	13%	27%	9%	41%	31%
	Responses counted and converted to percentage of responses.							

Question 5	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Who is allowed wireless access (check all that apply): (restricted means that there are limits on when the access may be used or how it may be used)								
Students: Restricted	25%	20%	24%	8%	6%	13%	29%	23%
Students: Unrestricted	73%	79%	74%	92%	94%	78%	65%	76%
Students: None	2%	1%	2%	0%	0%	9%	6%	1%
Teachers: Restricted	41%	38%	39%	38%	42%	22%	71%	40%
Teachers: Unrestricted	58%	61%	59%	62%	58%	74%	29%	59%
Teachers: None	1%	1%	2%	0%	0%	4%	0%	1%
Public: Restricted	7%	8%	7%	0%	3%	9%	18%	7%
Public: Unrestricted	71%	70%	74%	74%	67%	59%	59%	73%
Public: None	22%	22%	19%	26%	30%	32%	23%	20%
	Responses counted and converted to percentage of responses.							

Question 6	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
The percentage of technical issues that occur and are resolved (please enter a whole number without the percentage symbol; make sure your total is 100):								
Immediately or almost immediately	36%	39%	32%	34%	32%	10%	35%	34%
Within a day	29%	29%	26%	29%	29%	37%	27%	27%
Within a week	24%	23%	29%	28%	27%	41%	21%	27%
Longer than a week	11%	9%	13%	9%	12%	12%	17%	12%
	Values represent averages among responding schools.							

Question 7	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
The percentage of time per year an average student loses learning time (any amount of time, from 1 minute to multiple days) at school because of technical issues:	9%	9%	10%	21%	8%	9%	9%	10%
	Values represent averages among responding schools.							

Question 8	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Do the teachers in your school have access to an ITRT for professional development, mentoring, and follow-up when trying to integrate technology?								
Yes	94%	99%	98%	95%	88%	91%	88%	97%
No	6%	1%	2%	5%	12%	9%	12%	3%
	Responses counted and converted to percentage of responses.							

Question 9	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
What percentage of time are ITRTs in your school able to devote to professional development, mentoring, and follow-up with teachers regarding integrating technology (not including how to use assessment data)?	55%	61%	52%	59%	46%	48%	47%	54%
	Values represent averages among responding schools.							

Question 10	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Over the last year, what percentage of teachers in your school became MORE proficient in their use of technology as an instructional tool than they were the previous year?								
0-25%	10%	7%	12%	8%	21%	4%	12%	11%
26-50%	17%	18%	22%	26%	18%	35%	29%	21%
51-65%	16%	13%	11%	15%	6%	9%	0%	11%
66-75%	11%	10%	12%	3%	6%	9%	18%	11%
76-85%	15%	13%	11%	5%	15%	9%	17%	12%
86-90%	14%	16%	11%	18%	15%	4%	6%	13%
91-95%	7%	12%	9%	10%	9%	4%	12%	9%
96-100%	10%	11%	12%	15%	9%	26%	6%	11%
	Responses counted and converted to percentage of responses.							

Question 11	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
In the past year, about how many hours of school-based professional development (not just in technology but including all professional development) were offered to teachers/administrators? This includes professional development that was provided to everyone or to specific groups. Please estimate, and enter a whole number.	78	73	127	91	33	42	269	122
	Values represent averages among responding schools.							

Question 12	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
In the past year, what percentage of school-based professional development opportunities that were offered focused on technology integration with instruction?	45%	41%	33%	41%	33%	27%	36%	37%
	Values represent averages among responding schools.							

Question 13	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
What percentage of the school-based professional development (focused on technology integrated with instruction) were offered in these ways (please enter a whole number without using the percentage symbol where appropriate)								
Purchased from vendor (or included in existing contract with vendor)	6%	7%	7%	8%	9%	7%	6%	7%
After-school/pre-school	23%	24%	30%	20%	31%	23%	27%	27%
All-day	11%	11%	6%	13%	6%	6%	12%	8%
Weekend	1%	10%	1%	1%	1%	0%	1%	1%
In-depth focus on subject area	11%	15%	14%	8%	14%	12%	10%	13%
Hands-on learning	30%	31%	31%	16%	22%	39%	31%	31%
Just-in-time sessions (face-to-face or video)	23%	24%	22%	24%	15%	8%	27%	22%
Mentoring (one-to-one or one-to-few)	25%	25%	24%	14%	19%	11%	27%	24%
Modeling	16%	21%	35%	15%	16%	18%	30%	22%
	Values represent averages among responding schools.							

Question 14	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Does your school offer students access to any of the following (this may be for only one class or for several)? Choose all that apply								
Email accounts used for schoolwork	75%	65%	48%	69%	21%	17%	71%	56%
Electronic storage space on a server or the cloud for their school work	90%	93%	86%	77%	67%	22%	82%	86%
Online classes (Virtual Virginia)	84%	42%	0%	36%	12%	0%	59%	37%
Online classes (division-created)	55%	34%	24%	21%	3%	0%	65%	31%
Online classes (commercial entities, fee-based)	65%	37%	22%	18%	12%	4%	71%	33%
Remote access (e.g., from home) to most resources used in classes	72%	73%	59%	51%	61%	22%	76%	64%
Access to Internet using student-owned devices (while at school)	74%	66%	52%	56%	42%	9%	35%	58%
Purchased Internet-based resources besides textbooks (such as BrainPop, other subscription services)	90%	92%	90%	90%	94%	48%	82%	90%
	Responses counted and converted to percentage of responses.							

Question 15	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
How does the average student in your school use technology on a regular basis (at least several times per year)? Choose all that apply								
Practice or review topics in various subjects	98%	95%	97%	100%	91%	74%	100%	96%
Take formative tests or quizzes	98%	99%	97%	100%	88%	17%	82%	96%
Take summative tests or quizzes	96%	98%	97%	100%	91%	17%	88%	96%
Prepare for standardized tests	96%	98%	96%	100%	82%	13%	76%	95%
Improve skills in Internet safety and acceptable use	67%	75%	81%	74%	61%	17%	65%	76%
Extend learning with enrichment activities	84%	89%	85%	97%	85%	78%	82%	86%
Collect and/or analyze data	81%	67%	59%	54%	48%	4%	65%	64%
Conduct online research	95%	97%	85%	79%	73%	22%	82%	88%
Communicate electronically about academic content with experts, peers and/or others	69%	56%	39%	44%	21%	4%	53%	47%
Participate in videoconferencing	33%	24%	27%	38%	12%	4%	0%	27%
Work cooperatively or collaboratively with other students	89%	88%	77%	90%	55%	43%	53%	80%
Use modeling and simulations to explore complex systems and issues	61%	54%	38%	46%	21%	13%	41%	45%

Question 15	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Visually represent or investigate concepts	78%	72%	65%	74%	45%	26%	53%	68%
Produce media-based presentations	88%	87%	73%	92%	42%	9%	76%	77%
Generate original creative works	84%	84%	79%	92%	61%	30%	76%	80%
Create products that have real-world audiences	51%	50%	38%	33%	33%	9%	41%	42%
Solve real-world problems as part of an assignment	62%	56%	49%	49%	30%	9%	47%	52%
Use authentic tools in real-world applications (i.e., tools commonly used in a profession by adults)	70%	53%	43%	46%	33%	4%	53%	50%
Learn Information and Communication Technology (ICT) literacy skills (including deconstructing and constructing media messages)	53%	47%	34%	49%	6%	0%	29%	39%
	Responses counted and converted to percentage of responses.							

Question 16	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Are you familiar with Open Education Resources?								
Yes	82%	79%	72%	87%	85%	61%	71%	76%
No	18%	21%	28%	13%	15%	39%	29%	24%
	Responses counted and converted to percentage of responses.							

Question 17	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Based on your observations, teachers use OER now for a significant part (25% or above) of their educational resources in which subject areas? (check all that apply)								
Arts	29%	31%	19%	31%	15%	0%	24%	23%
CTE	55%	45%	6%	33%	0%	9%	41%	24%
English	49%	59%	59%	44%	67%	22%	53%	56%
Health/PE	23%	20%	10%	15%	12%	13%	29%	15%
History and Social Studies	55%	63%	54%	64%	55%	30%	59%	56%
Math	47%	55%	63%	44%	67%	26%	41%	57%
Science	52%	64%	56%	59%	61%	26%	59%	56%
World Languages	35%	36%	8%	13%	3%	4%	35%	18%
Interdisciplinary	15%	13%	11%	15%	6%	0%	6%	12%
	Responses counted and converted to percentage of responses.							

Question 18	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
How does the typical student in your school use OER on a regular basis?								
Main resource (substitute for textbook): Never	19%	21%	36%	28%	43%	83%	29%	30%
Main resource (substitute for textbook): Rarely	28%	25%	22%	26%	24%	4%	18%	24%
Main resource (substitute for textbook): Sometimes	38%	37%	31%	33%	27%	9%	35%	33%
Main resource (substitute for textbook): Often	12%	13%	9%	5%	6%	0%	18%	10%
Main resource (substitute for textbook): Frequently	3%	4%	2%	8%	0%	4%	0%	3%
Supplement to textbook: Never	8%	11%	20%	23%	24%	77%	29%	17%
Supplement to textbook: Rarely	15%	13%	12%	8%	15%	5%	6%	13%
Supplement to textbook: Sometimes	46%	46%	44%	33%	37%	18%	29%	44%
Supplement to textbook: Often	23%	25%	18%	28%	15%	0%	30%	20%
Supplement to textbook: Frequently	8%	5%	6%	8%	9%	0%	6%	6%
Flipped classroom: Never	21%	27%	46%	44%	67%	77%	35%	39%
Flipped classroom: Rarely	31%	36%	31%	38%	21%	14%	35%	31%
Flipped classroom: Sometimes	39%	31%	19%	10%	12%	9%	24%	25%
Flipped classroom: Often	7%	5%	3%	5%	0%	0%	6%	4%
Flipped classroom: Frequently	2%	1%	1%	3%	0%	0%	0%	1%

Question 18	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Differentiation/Personalization for students: Never	11%	12%	19%	23%	21%	59%	18%	17%
Differentiation/Personalization for students: Rarely	20%	19%	19%	3%	9%	5%	18%	18%
Differentiation/Personalization for students: Sometimes	49%	49%	38%	41%	27%	32%	35%	42%
Differentiation/Personalization for students: Often	16%	16%	18%	31%	34%	0%	18%	18%
Differentiation/Personalization for students: Frequently	4%	4%	6%	2%	9%	4%	11%	5%
Whole-class instruction: Never	12%	11%	22%	23%	24%	59%	18%	18%
Whole-class instruction: Rarely	19%	16%	14%	16%	12%	14%	12%	16%
Whole-class instruction: Sometimes	42%	43%	35%	33%	21%	18%	41%	37%
Whole-class instruction: Often	9%	23%	21%	18%	28%	5%	12%	21%
Whole-class instruction: Frequently	8%	7%	8%	10%	15%	4%	17%	8%
Testing practice: Never	12%	11%	19%	20%	28%	91%	18%	17%
Testing practice: Rarely	10%	11%	13%	5%	21%	0%	23%	12%
Testing practice: Sometimes	39%	37%	32%	31%	24%	9%	47%	34%
Testing practice: Often	23%	27%	22%	31%	12%	0%	6%	23%
Testing practice: Frequently	16%	14%	14%	13%	15%	0%	6%	14%
	Responses counted and converted to percentage of responses.							

Question 19	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
How important are the following factors in evaluating any (not just OER) resource that teachers use with students? (use scale of 4-0,with 4 being the most important)								
Accuracy: 4	82%	83%	79%	80%	76%	74%	82%	80%
Accuracy: 3	12%	11%	16%	0%	9%	4%	12%	14%
Accuracy: 2	4%	4%	4%	5%	6%	9%	6%	4%
Accuracy: 1	0%	0%	0%	0%	0%	0%	0%	0%
Accuracy: 0	2%	2%	1%	15%	9%	13%	0%	2%
How up-to-date it is: 4	62%	58%	63%	59%	64%	61%	65%	62%
How up-to-date it is: 3	30%	33%	28%	13%	24%	22%	29%	29%
How up-to-date it is: 2	6%	6%	6%	13%	3%	4%	6%	6%
How up-to-date it is: 1	1%	1%	1%	0%	0%	0%	0%	1%
How up-to-date it is: 0	1%	2%	2%	15%	9%	13%	0%	2%
Ease of student access on multiple devices: 4	47%	46%	50%	44%	52%	65%	59%	48%
Ease of student access on multiple devices: 3	35%	32%	30%	31%	21%	9%	35%	31%
Ease of student access on multiple devices: 2	14%	16%	13%	8%	12%	4%	6%	13%
Ease of student access on multiple devices: 1	3%	4%	4%	2%	6%	9%	0%	4%

Question 19	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Ease of student access on multiple devices: 0	1%	2%	3%	15%	9%	13%	0%	3%
Ease of re-purposing/editing: 4	29%	22%	24%	23%	24%	30%	47%	25%
Ease of re-purposing/editing: 3	40%	42%	36%	28%	40%	26%	29%	37%
Ease of re-purposing/editing: 2	23%	27%	29%	26%	18%	13%	24%	27%
Ease of re-purposing/editing: 1	6%	6%	8%	8%	9%	9%	0%	7%
Ease of re-purposing/editing: 0	2%	3%	3%	15%	9%	22%	0%	4%
Ease of distribution to different students: 4	41%	39%	41%	33%	49%	44%	59%	41%
Ease of distribution to different students: 3	42%	43%	39%	39%	27%	30%	35%	39%
Ease of distribution to different students: 2	15%	14%	15%	10%	12%	9%	6%	14%
Ease of distribution to different students: 1	1%	2%	3%	3%	3%	0%	0%	2%
Ease of distribution to different students: 0	1%	2%	2%	15%	9%	17%	0%	3%
Source of material: 4	35%	38%	37%	36%	49%	48%	53%	37%
Source of material: 3	45%	35%	40%	23%	30%	17%	23%	39%
Source of material: 2	15%	19%	16%	23%	9%	17%	12%	17%
Source of material: 1	3%	6%	5%	3%	3%	0%	6%	4%
Source of material: 0	2%	2%	2%	15%	9%	18%	6%	3%
SOL alignment available: 4	49%	53%	58%	46%	64%	30%	47%	55%
SOL alignment available: 3	29%	23%	28%	36%	24%	22%	18%	28%

Question 19	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
SOL alignment available: 2	15%	17%	10%	3%	3%	4%	17%	12%
SOL alignment available: 1	4%	5%	2%	0%	0%	0%	12%	3%
SOL alignment available: 0	3%	2%	2%	15%	9%	44%	6%	3%
Part of a complete course of study: 4	20%	13%	14%	13%	18%	26%	24%	15%
Part of a complete course of study: 3	27%	22%	22%	18%	37%	13%	35%	23%
Part of a complete course of study: 2	31%	31%	28%	20%	15%	26%	29%	29%
Part of a complete course of study: 1	15%	21%	23%	31%	9%	4%	6%	20%
Part of a complete course of study: 0	7%	13%	13%	18%	21%	31%	6%	12%
Cost: 4	62%	62%	59%	56%	58%	57%	41%	60%
Cost: 3	19%	21%	27%	8%	24%	22%	41%	24%
Cost: 2	15%	10%	9%	18%	9%	4%	12%	11%
Cost: 1	2%	2%	2%	3%	0%	0%	0%	2%
Cost: 0	2%	5%	3%	15%	9%	17%	6%	4%
Recommendation by outside authority (such as VDOE): 4	21%	24%	32%	26%	33%	31%	29%	28%
Recommendation by outside authority (such as VDOE): 3	36%	33%	35%	28%	46%	52%	30%	35%
Recommendation by outside authority (such as VDOE): 2	32%	31%	23%	28%	12%	4%	41%	26%
Recommendation by outside authority (such as VDOE): 1	9%	8%	7%	3%	0%	0%	0%	7%

Question 19	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Recommendation by outside authority (such as VDOE): 0	2%	4%	3%	15%	9%	13%	0%	3%
Recommendation by other teachers: 4	29%	26%	28%	23%	15%	31%	29%	28%
Recommendation by other teachers: 3	45%	47%	45%	41%	55%	35%	47%	45%
Recommendation by other teachers: 2	22%	21%	20%	18%	18%	17%	24%	21%
Recommendation by other teachers: 1	3%	3%	4%	0%	3%	4%	0%	3%
Recommendation by other teachers: 0	1%	3%	3%	18%	9%	13%	0%	3%
	Responses counted and converted to percentage of responses.							

Question 20	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
On a scale of 4-0 (with 4 being the hardest), how difficult are the challenges that keep teachers from using OER?								
Too hard/time consuming to find good resources: 4	36%	33%	39%	31%	27%	35%	53%	37%
Too hard/time consuming to find good resources: 3	30%	36%	34%	28%	18%	13%	23%	33%
Too hard/time consuming to find good resources: 2	26%	22%	19%	26%	34%	13%	18%	21%
Too hard/time consuming to find good resources: 1	5%	5%	5%	5%	18%	13%	6%	5%
Too hard/time consuming to find good resources: 0	3%	4%	3%	10%	3%	26%	0%	4%
Too difficult to edit or repurpose: 4	18%	17%	21%	20%	18%	26%	35%	20%
Too difficult to edit or repurpose: 3	36%	34%	36%	28%	18%	13%	41%	35%
Too difficult to edit or repurpose: 2	34%	36%	30%	26%	40%	35%	12%	31%
Too difficult to edit or repurpose: 1	7%	9%	9%	13%	15%	0%	12%	9%
Too difficult to edit or repurpose: 0	5%	4%	4%	13%	9%	26%	0%	5%
Not enough resources for their subject: 4	18%	15%	19%	13%	18%	26%	47%	18%

Question 20	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Not enough resources for their subject: 3	31%	32%	28%	18%	31%	17%	23%	29%
Not enough resources for their subject: 2	35%	35%	34%	26%	24%	26%	18%	34%
Not enough resources for their subject: 1	11%	12%	13%	20%	24%	5%	12%	13%
Not enough resources for their subject: 0	5%	6%	6%	23%	3%	26%	0%	6%
Not used by other teachers they know: 4	18%	14%	14%	13%	15%	26%	29%	15%
Not used by other teachers they know: 3	30%	31%	27%	13%	15%	9%	12%	28%
Not used by other teachers they know: 2	33%	33%	34%	36%	34%	30%	41%	34%
Not used by other teachers they know: 1	12%	14%	17%	20%	30%	9%	18%	15%
Not used by other teachers they know: 0	7%	8%	8%	18%	6%	26%	0%	8%
Too complicated to use with current equipment: 4	15%	15%	20%	13%	12%	22%	24%	18%
Too complicated to use with current equipment: 3	25%	23%	28%	15%	15%	9%	23%	26%
Too complicated to use with current equipment: 2	35%	31%	28%	26%	27%	26%	35%	30%
Too complicated to use with current equipment: 1	16%	19%	16%	13%	34%	17%	18%	16%
Too complicated to use with current equipment: 0	9%	12%	8%	33%	12%	26%	0%	10%

Question 20	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Not knowing what the copyright issues might be: 4	12%	11%	16%	15%	6%	17%	18%	14%
Not knowing what the copyright issues might be: 3	23%	18%	23%	18%	27%	9%	17%	22%
Not knowing what the copyright issues might be: 2	34%	39%	29%	21%	27%	22%	47%	32%
Not knowing what the copyright issues might be: 1	22%	20%	21%	26%	31%	22%	12%	21%
Not knowing what the copyright issues might be: 0	9%	12%	11%	20%	9%	30%	6%	11%
Not useful in reaching students: 4	13%	12%	16%	18%	15%	26%	35%	15%
Not useful in reaching students: 3	19%	22%	19%	8%	9%	17%	6%	19%
Not useful in reaching students: 2	40%	34%	36%	20%	31%	17%	47%	36%
Not useful in reaching students: 1	18%	20%	18%	31%	24%	9%	12%	18%
Not useful in reaching students: 0	10%	12%	11%	23%	21%	31%	0%	12%
Administration doesn't support use: 4	6%	6%	11%	13%	9%	13%	23%	9%
Administration doesn't support use: 3	11%	11%	12%	5%	6%	4%	18%	11%
Administration doesn't support use: 2	29%	23%	27%	15%	18%	17%	18%	26%
Administration doesn't support use: 1	19%	27%	20%	16%	18%	9%	12%	21%
Administration doesn't support use: 0	35%	33%	30%	51%	49%	57%	29%	33%
Policies don't support use: 4	12%	12%	15%	18%	9%	17%	41%	14%
Policies don't support use: 3	10%	12%	17%	5%	3%	0%	12%	14%

Question 20	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Policies don't support use: 2	29%	26%	25%	23%	21%	17%	12%	26%
Policies don't support use: 1	21%	25%	19%	13%	30%	18%	12%	20%
Policies don't support use: 0	28%	25%	24%	41%	37%	48%	23%	26%
Parents are unsure that OER are valid: 4	4%	4%	9%	10%	18%	9%	12%	8%
Parents are unsure that OER are valid: 3	9%	8%	13%	8%	0%	9%	6%	10%
Parents are unsure that OER are valid: 2	31%	27%	25%	15%	21%	26%	23%	27%
Parents are unsure that OER are valid: 1	25%	26%	25%	31%	27%	8%	12%	25%
Parents are unsure that OER are valid: 0	31%	35%	28%	36%	34%	48%	47%	30%
	Responses counted and converted to percentage of responses.							

Question 21	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Have any teachers in your school created and shared OER…								
Within the school? Yes	59%	54%	50%	59%	39%	30%	35%	52%
Within the school? No	41%	46%	50%	41%	61%	70%	65%	48%
Within the division? Yes	50%	43%	32%	38%	33%	13%	29%	37%
Within the division? No	50%	57%	68%	62%	67%	87%	71%	63%
Within the state? Yes	25%	21%	12%	21%	21%	0%	18%	16%
Within the state? No	75%	79%	88%	79%	79%	100%	82%	84%
Outside of the state? Yes	17%	14%	7%	10%	12%	0%	18%	11%
Outside of the state? No	83%	86%	93%	90%	88%	100%	82%	89%
	Responses counted and converted to percentage of responses.							

Question 22	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
What challenges do you see in the creation and sharing of teacher resources by teachers in your school? Check all that apply								
Finding a place to share resources online	32%	33%	34%	28%	12%	17%	24%	32%
Unsure of copyright issues	48%	51%	52%	72%	45%	43%	47%	51%
Too much time involved in creation	80%	76%	83%	85%	94%	52%	65%	81%
Lack of reward	54%	53%	46%	74%	58%	26%	47%	49%
Potential criticism from others and/or damage to the teacher's reputation	24%	23%	29%	33%	27%	30%	18%	27%
Division policies	19%	21%	27%	23%	6%	9%	47%	24%
	Responses counted and converted to percentage of responses.							

Question 23	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
Please identify services provided by your school's library media center. Choose all that apply								
Digital reference/virtual reference	85%	91%	87%	95%	85%	13%	47%	86%
Licensed databases	79%	84%	76%	67%	61%	13%	59%	76%
Digitized special collections (e.g., postcards, local history documents)	36%	34%	27%	0%	18%	4%	24%	29%
E-book	66%	72%	66%	56%	61%	17%	47%	66%
Audio content (e.g., podcasts, audio books)	62%	63%	55%	62%	61%	9%	35%	57%
Video content	70%	73%	70%	72%	79%	22%	24%	70%
Audio, digital imaging, or video production equipment for teacher or student use	54%	66%	55%	54%	52%	9%	35%	56%
Space for video conferencing	38%	3%	29%	31%	9%	17%	18%	31%
Space to take online courses	61%	46%	18%	44%	12%	13%	41%	32%
Space to create and problem-solve ("maker-spaces")	42%	37%	38%	0%	27%	17%	18%	38%
Space for small-group collaboration	82%	87%	77%	92%	82%	48%	53%	80%
Space for students to charge digital devices	51%	29%	16%	21%	12%	9%	24%	23%
	Responses counted and converted to percentage of responses.							

Question 24	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
What is your opinion?								
Teachers have adequate access to technology in my school: Strongly Agree	51%	43%	34%	74%	45%	27%	47%	40%
Teachers have adequate access to technology in my school: Agree	35%	50%	48%	15%	49%	36%	29%	43%
Teachers have adequate access to technology in my school: Disagree	11%	15%	13%	8%	3%	37%	18%	14%
Teachers have adequate access to technology in my school: Strongly Disagree	3%	2%	5%	3%	3%	0%	6%	4%
The technology in my school is reliable: Strongly Agree	35%	28%	20%	49%	24%	18%	23%	25%
The technology in my school is reliable: Agree	50%	59%	56%	38%	67%	68%	53%	55%
The technology in my school is reliable: Disagree	12%	9%	20%	10%	6%	14%	12%	16%
The technology in my school is reliable: Strongly Disagree	3%	4%	4%	3%	3%	0%	12%	4%
Teachers have adequate technical support for technology in my school: Strongly Agree	42%	46%	32%	54%	27%	27%	47%	37%
Teachers have adequate technical support for technology in my school: Agree	45%	43%	51%	36%	58%	55%	29%	48%
Teachers have adequate technical support for technology in my	10%	9%	14%	8%	12%	18%	18%	12%

Question 24	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
school: Disagree								
Teachers have adequate technical support for technology in my school: Strongly Disagree	3%	2%	3%	2%	3%	0%	6%	3%
Teachers have adequate support to help them integrate technology into the classroom: Strongly Agree	48%	53%	35%	46%	30%	27%	41%	41%
Teachers have adequate support to help them integrate technology into the classroom: Agree	38%	35%	47%	41%	49%	55%	47%	43%
Teachers have adequate support to help them integrate technology into the classroom: Disagree	11%	11%	15%	10%	21%	9%	6%	13%
Teachers have adequate support to help them integrate technology into the classroom: Strongly Disagree	3%	1%	3%	3%	0%	9%	6%	3%
Teachers are adequately trained to integrate technology into classroom instruction: Strongly Agree	26%	27%	18%	36%	21%	14%	24%	21%
Teachers are adequately trained to integrate technology into classroom instruction: Agree	51%	54%	49%	44%	52%	64%	47%	51%
Teachers are adequately trained to integrate technology into classroom instruction: Disagree	16%	18%	29%	15%	24%	13%	23%	24%
Teachers are adequately trained to integrate technology into	7%	1%	4%	5%	3%	9%	6%	4%

Question 24	High	Middle	Elementary	Combined	Primary	Pre-K	Other	All
classroom instruction: Strongly Disagree								
	Responses counted and converted to percentage of responses.							