

Digital Learning One-to-One Initiative

Evaluation Update

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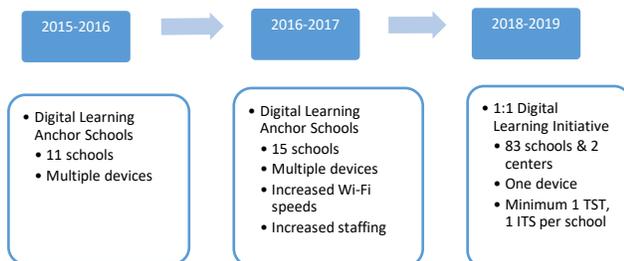
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Program Overview

Virginia Beach City Public Schools (VBCPS) began to implement the 1:1 Digital Learning Initiative (DLI) in the 2015-2016 school year with 11 pilot schools known as the Digital Learning Anchor Schools. At the program's inception, the overall goal of the 1:1 DLI was "to use digital learning as a pathway to personalized learning by increasing student flexibility with respect to when and how learning occurs."¹ In order to reach that goal, VBCPS began by providing each student in the 11 Digital Learning Anchor Schools with an electronic device for their use in the classroom during the school day and also at home for students in grades 5 through 12. Since it began in 2015-2016, the 1:1 initiative expanded to 15 schools in 2016-2017 and was expanded to all 83 schools and 2 centers by the start of the 2018-2019 school year (see Figure 1). In order to expand the initiative to all schools, VBCPS increased the number of school-based support staff, improved technology infrastructure, and selected the HP Chromebook as the primary device to use across all schools.

Figure 1: Summary of 1:1 Digital Learning Initiative Implementation Timeline



The eligibility requirement for a student to receive a device was that the student be enrolled in first through twelfth grade in VBCPS. Kindergarten students had access to classroom sets of devices which included touchscreen Chromebooks or iPads. Generally, students in grades 5 through 12 could take their device home with them to complete schoolwork. To address connectivity issues at home, students in grades 5 through 12 who were unable to access the internet away from school were provided a Kajeet Mobile Hotspot upon request. A Kajeet Mobile Hotspot is a small device that students and families can connect to their computer to have a secured and content filtered connection to access all of the necessary learning resources to complete their

schoolwork and communicate with school staff. Kajeet Mobile Hotspots were provided to any student whose counselor submitted a request form and completed the "Student Kajeet SmartSpot Checkout Agreement." From fall 2017 through March 2020, a total of 258 Kajeet devices were provided.²

After the COVID-19 school closure in March 2020, adjustments were made to the operation of the 1:1 DLI to accommodate students' needs. Schools were able to offer younger students the opportunity to pick up a device for at-home use, and beginning in March 2020 during the school closure, the Department of Technology began facilitating the process by which families could obtain internet access. A VBCPS support internet page was developed which provided families with information about obtaining internet access. Principals and school counselors were also provided a script for discussing options with families via phone support. Options for internet access included free smartphone data plans through cell phone carriers, the Cox Connect2Complete internet access program which included two free months of access, VBCPS Wi-Fi access in select school parking lots for school-issued devices, and T-Mobile hotspots provided by VBCPS.³ The Department of Technology contacted all families that indicated a need for a hotspot, and from the beginning of the school closure through July 21, 414 T-Mobile hotspots were distributed to students.⁴

The School Board originally approved the Digital Learning Anchor School Initiative focused on the 1:1 implementation for an evaluation on August 8, 2015. Since that time, the initiative has had two developmental evaluations completed by the Office of Research and Evaluation. During the developmental/field test period, the School Board received evaluation reports in November 2016 and November 2017. This evaluation update for the 1:1 DLI was conducted as a result of a recommendation from the November 2017 program evaluation, which was approved by the School Board on November 21, 2017. The approved recommendation was to "Conduct an evaluation update during the 2019-2020 school year to monitor the continued progress of the 1:1 initiative and its continuing alignment with evidence-based best practices." Therefore, the purpose of this evaluation update is to report staff and student perceptions of the divisionwide

implementation of the 1:1 DLI during 2019-2020 and to examine staff perceptions regarding the extent to which the current operation of the 1:1 DLI is aligned with best practices. Additionally, perception data were collected from staff and students regarding the extent to which the 1:1 technology is supporting the initial digital learning teacher and student outcomes that were defined for the initiative.

Data Collection and Methodology

The Office of Research and Evaluation invited all VBCPS students in grades 3 through 12 and staff (i.e., principals, assistant principals, instructional technology specialists, technology support technicians, and teachers) to complete an online survey. The online survey was administered during the COVID-19 school closure from May 18 to May 29, and the 1:1 digital learning survey items were administered as one part of a larger combined Schoolology and Digital Learning survey. For students, a link to the survey was posted on relevant Schoology pages, and instructions were provided. Staff received an email with a link to access the survey. Digital learning components that were included on the survey included staffing, alignment to digital learning best practices, the extent to which the technology is being used to support the initial 1:1 DLI teacher and student outcomes, and overall stakeholder perceptions of the initiative. The response rates for each survey are noted below.

- **Student Survey:** Of the 52,554 grades 3 through 12 VBCPS students enrolled at the time of survey, 11,544 (22%) responded to the online survey. Response rates were 31 percent for elementary students, 26 percent for middle school students, and 12 percent for high school students.
- **Teacher Survey:** Of the 4,655 VBCPS teachers who received a survey link, 1,985 (43%) responded to the online survey. Response rates were 39 percent for elementary school teachers, 54 percent for middle school teachers, and 40 percent for high school teachers.
- **Administrative Staff Survey:** Of the 335 VBCPS administrative staff (e.g., principals, assistant principals, and instructional technology specialists) who received a survey link, 215 (64%)

responded to the online survey. Response rates were 68 percent for elementary school staff, 74 percent for middle school staff, and 50 percent for high school staff.

- **Technology Support Technician Survey⁵:** Of the 98 VBCPS technology support technicians who received a survey link, 52 (53%) responded to the online survey. Because of the small number of TSTs at each of the secondary school levels, results for TSTs are provided for the overall division in the report.

Survey directions for all surveys indicated that respondents were to base their responses on their experience with digital learning throughout the 2019-2020 school year, including during the time of the COVID-19 school closure when students were working on schoolwork from home and staff were teaching remotely.

Additional information and data for this evaluation update were gathered from prior digital learning evaluations, presentations, and documents created by the Office of Research and Evaluation; staffing memorandums and information from the departments of Human Resources, Teaching and Learning, and Technology; and official VBCPS communications regarding the initiative.

Results

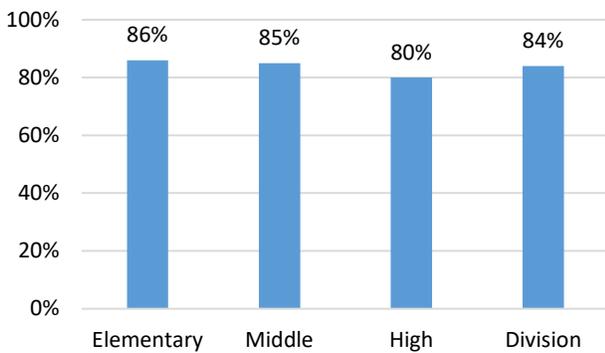
Staffing to Support the Digital Learning Initiative

Within each Virginia Beach school, the instructional technology specialist (ITS) supports the implementation of innovative instructional practices and plans, manages, and oversees the school's implementation of the division's digital programs, while the technology support technician (TST) provides technical support to school staff and students to ensure that digital devices, network, and other infrastructure components are functioning optimally. In order for the 1:1 DLI to be successful, it was recommended as a result of the November 2017 evaluation that the division fund at least one full-time ITS at each school to ensure that the instructional technology needs of each classroom are addressed in a timely manner. It was also recommended that while

each school had at least one TST, that these allocations be reviewed to determine if they were sufficient to support schools' technical needs.

The Department of Human Resources provided staffing data for 2019-2020 that indicated each school and center had one full-time TST. Additionally, a memo regarding ITS allocations was released on June 14, 2018, which listed all of the ITS allocations by level. All schools had at least one full-time ITS allocation with nine middle schools having at least a 1.5 allocation and all high schools except Renaissance Academy having at least a 1.5 allocation. To assess perceptions of whether students received assistance when needed, Figure 2 displays the percentage of students who agreed that they received help with any problems related to their device if they had problems

Figure 2: Percent of Students Who Agreed They Received Help With Any Problems Using Their Device



- The percent of students who agreed that they received help with any problems related to their device ranged from 80 to 86 percent.
- Other survey data from staff showed that at least 85 percent of teachers and administrative staff at each school level agreed that staffing at their school was adequate to support their needs for instructional support related to the 1:1 DLI. Additionally, at least 85 percent of teachers, administrative staff, and TSTs agreed staffing was adequate to support their schools' needs for technical support related to the initiative.

Alignment to Best Practices

Based on the November 2017 digital learning evaluation, it was recommended that the continued

progress of the 1:1 DLI be monitored in terms of the initiative's alignment with best practices related to eight digital learning components (i.e., student-centered learning, technology integration and immersion, professional learning, equity, effective leadership, stakeholder engagement, infrastructure, and usage policies). The eight best practice areas were identified in the literature on 1:1 digital programs. Each best practice area, along with relevant survey results, is discussed in more detail in the upcoming sections of this report.

Student-Centered Learning

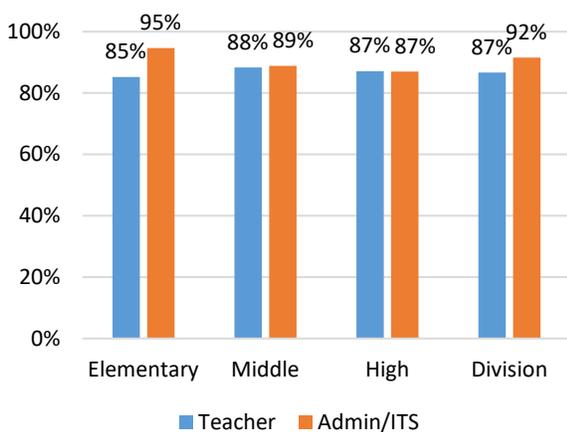
Based on the literature reviewed as part of the division's evaluation work for the 1:1 DLI, student-centered learning is key. Percent of Students Who Agreed They Received Help With Any Problems Using Their Device for increasing student engagement and achievement within a 1:1 program. With student-centered learning, teachers act as an "instructional manager, coach, and designer of effective learning."⁶ One-to-one programs must require teachers to support student-centered and project-based learning, which often requires a shift in perspective and learning new skills.⁷ Schools and districts must specifically support efforts to change instructional practices, such as by providing professional development or training programs to help teachers learn and implement student-centered teaching strategies.⁸ Staff survey results related to student-centered learning and support for student-centered learning are presented in the tables and charts below.

Table 1: Percent of Administrative Staff Who Agreed With Student-Centered Learning Statements

At my school...	Elementary	Middle	High	Division
teachers support student-centered learning.	98%	98%	96%	98%
teachers support project-based learning for students.	88%	89%	89%	88%

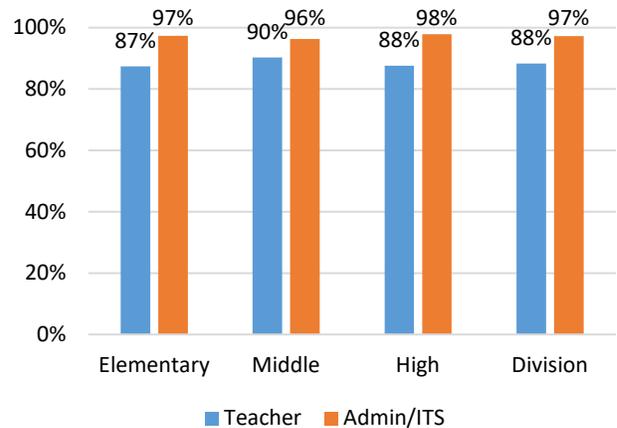
- A large majority of administrative staff (i.e., principals, assistant principals, and instructional technology specialists) agreed that teachers supported student-centered and project-based learning.
- While the agreement percentages were all 88 percent or higher, agreement percentages were at least 7 percentage points higher for support for student-centered learning compared to project-based learning.

Figure 3: Percent of Staff Who Agreed Staffing Is Adequate to Provide Instructional Support for the 1:1 Digital Learning Initiative



- At least 85 percent of teachers and 87 percent of administrative staff at each school level indicated that staffing at their schools was adequate to support the schools' needs for instructional support related to the 1:1 DLI.

Figure 4: Percent of Staff Who Agreed Professional Development Helped Teachers Learn and Implement Student-Centered Teaching Strategies

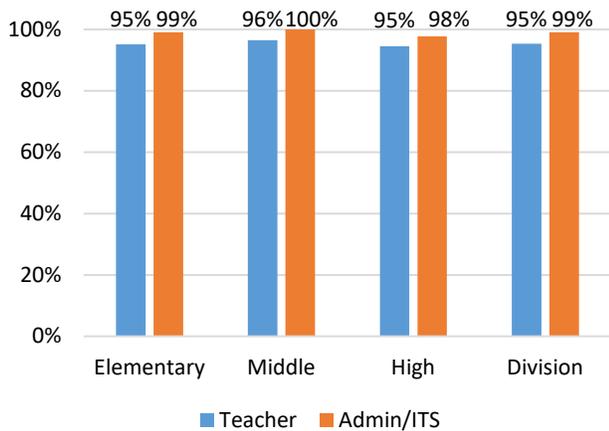


- At least 87 percent of teachers and 96 percent of administrative staff at each school level agreed that the professional development helped teachers learn to implement student-centered teaching strategies.

Technology Integration and Immersion

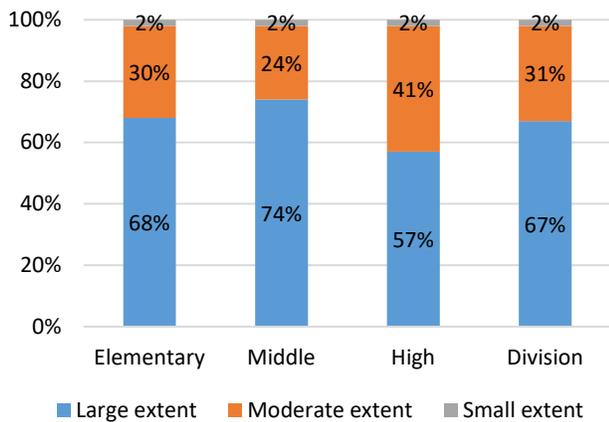
According to the literature of 1:1 DLI best practices related to technology integration and immersion, greater degrees of integration of technology with instruction and higher levels of immersion yielded more positive perceptions and better academic and behavioral outcomes. Students and teachers at schools with higher degrees of integration felt better about school.⁹ Additionally, teachers tended to earn higher performance ratings and students earned better grades, scored better on tests, and exhibited better attendance and conduct.¹⁰ Teacher and administrative staff survey results related to technology integration and immersion are displayed in Figure 5 and Figure 6.

Figure 5: Percent of Staff Who Agreed Technology Has Become a More Integral Part of Teaching and Learning



- At least 95 percent of teachers and 98 percent of administrative staff at each school level who responded to the survey agreed that technology has become a more integral part of the teaching and learning that occurs in the classroom or school, respectively.

Figure 6: Percent of Administrative Staff Who Indicated the Extent to Which Technology Has Been Integrated With Instruction



- A large majority (98%) of administrative staff at each level indicated that technology has been integrated with instruction at their school to a “moderate” or “large” extent.
- At least 57 percent of administrative staff from each level indicated that technology has been integrated with instruction at their school to a

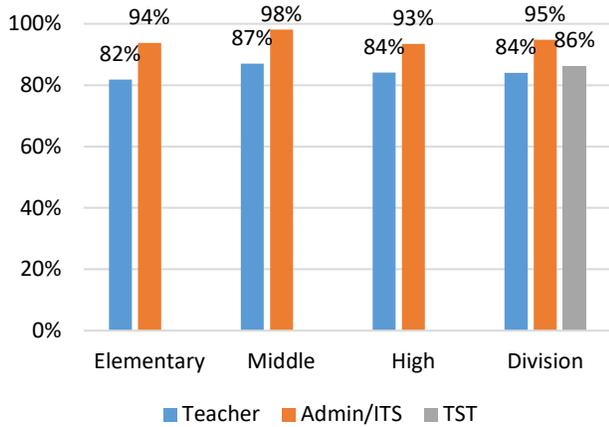
“large” extent, with the highest agreement at middle school.

- Other survey results from TSTs showed that 100 percent indicated that technology has been integrated with instruction at their school to a “moderate” or “large” extent, with 85 percent of TSTs indicating that technology has been integrated with instruction to a “large” extent.

Professional Learning

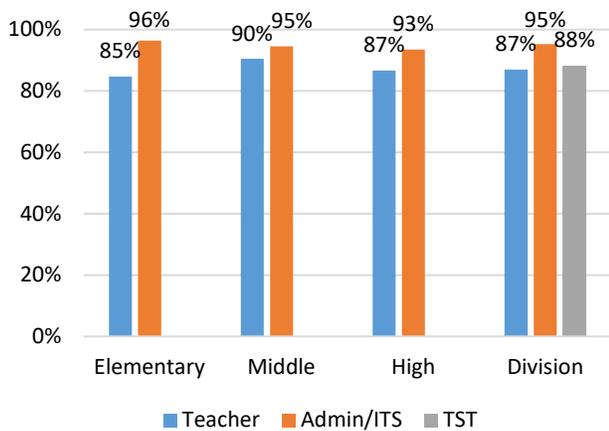
The literature related to professional learning best practices for 1:1 DLIs indicated that teacher training and professional development is critical in facilitating successful 1:1 program implementation. When sufficient training, professional development, and support are provided, teachers have more positive perceptions of 1:1 programs and are able to use technology more frequently and efficiently.¹¹ Professional development should be provided early and on an ongoing basis, and the content of the sessions should be driven by teachers’ needs and should provide specific strategies for integrating technology into classroom instruction rather than simply focusing on how to use devices.¹² In addition to professional learning being a best practice, one of the specific recommendations from the November 2017 evaluation approved by the School Board was to provide professional learning, especially for high school staff, to allow staff time to plan in informed and effective ways. Teacher, administrative staff, and TST survey results regarding overall perceptions of professional learning and support for staff to implement the 1:1 DLI are displayed in Figure 7 through Figure 9.

Figure 7: Percent of Staff Who Agreed There Has Been Sufficient Professional Development to Implement the 1:1 Digital Learning Initiative



- At least 82 percent of teachers and 93 percent of administrative staff at each school level agreed that staff training or professional development to implement the 1:1 digital learning initiative was sufficient.
- Across the division, 86 percent of TSTs agreed that professional development was sufficient.

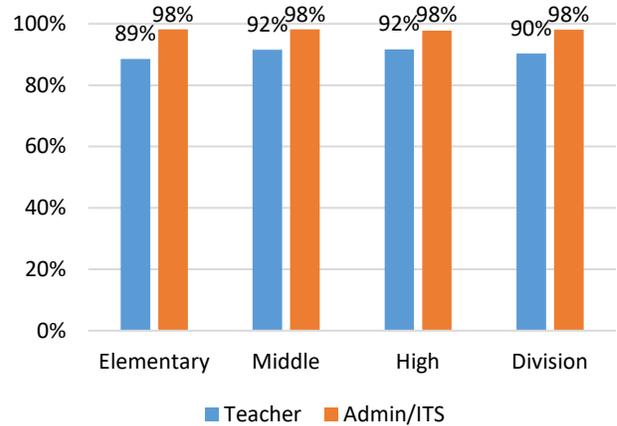
Figure 8: Percent of Staff Who Agreed There Has Been Sufficient Support for Staff to Implement the 1:1 Digital Learning Initiative



- At least 85 percent of teachers and 93 percent of administrative staff at each level agreed there was sufficient support for staff to implement the 1:1 DLI.

- Across the division, 88 percent of TSTs agreed support for staff was sufficient.

Figure 9: Percent of Staff Who Agreed Professional Development Has Helped Teachers Integrate Technology Into Classroom Instruction

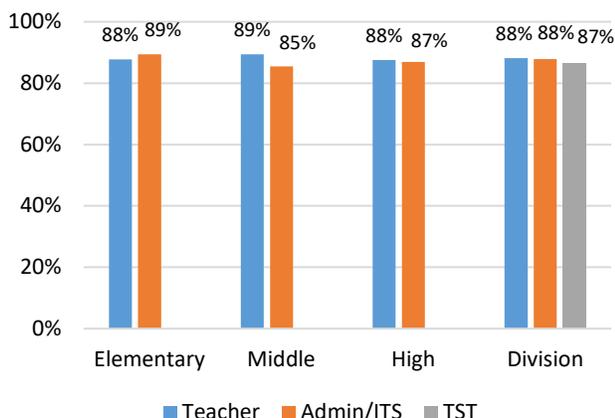


- From 89 to 92 percent of teachers and 98 percent of administrative staff across all school levels agreed that professional development has helped teachers learn specific strategies for integrating technology into classroom instruction.

Equity

Based on the literature regarding 1:1 DLIs and equity, schools and districts implementing 1:1 programs should take special care to ensure that programs do not widen achievement gaps between already low-performing and high-performing students. Disadvantaged students may not have the technology experience or access needed for effective learning in 1:1 programs, and schools within a district may not have equal resources to devote to program implementation.¹³ Additionally, to ensure equity in 1:1 programs, districts should provide for consistent 1:1 program implementation across schools (Ullman, 2014, as cited in Court and Janicki, 2017).¹⁴ Resources, such as training and technical support, should be distributed equally across schools.¹⁵ Teacher, administrative staff, and TST survey results regarding the equitable implementation of the 1:1 digital learning initiative are displayed in Figure 10.

Figure 10: Percent of Staff Who Agreed the 1:1 Digital Learning Initiative Was Implemented in an Equitable Manner

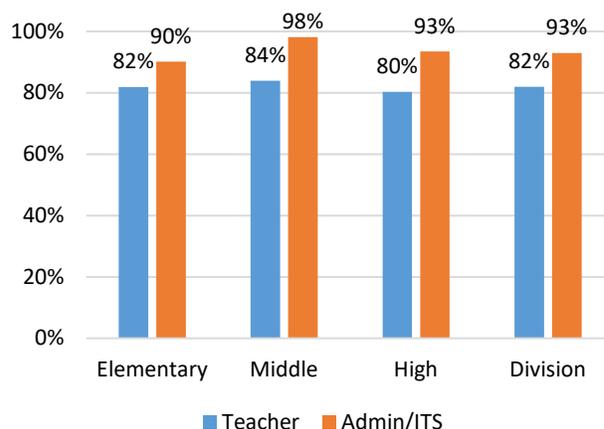


- At least 85 percent of administrative staff and 88 percent of teachers at each school level agreed that the 1:1 DLI was implemented in an equitable manner by providing all students the resources they needed to benefit from the 1:1 initiative (e.g., access to technology outside of school, appropriate resources for all schools, waivers of fees if needed).
- Across the division, 87 percent of TSTs agreed the initiative was implemented in an equitable manner.

Effective Leadership

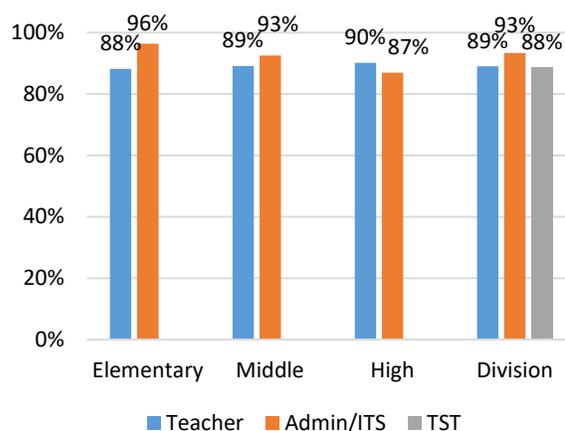
According to the literature related to effective leadership best practices for 1:1 DLIs, leaders must demonstrate concrete support for 1:1 programs in order for programs to be successful. Leaders should articulate a clear vision for technology use and educational goals, set clear expectations for teachers and students, and ensure that these expectations are conveyed early in the implementation process.¹⁶ Adequate resources, including funding, personnel, technical support, and professional development, should be allocated to support the program. Leaders should make sure that all stakeholders are actively involved in the planning and implementation process to ensure that potential concerns are addressed and to increase program buy-in.¹⁷ Teacher and administrative staff survey results related to perceptions of effective leadership are displayed in Figure 11 and Figure 12.

Figure 11: Percent of Staff Who Agreed There Is a Clear Vision and Clear Expectations for Teachers and Students



- At least 80 percent of teachers and 90 percent of administrative staff at each school level who responded to the survey agreed that there is a clear vision and clear expectations for teacher and student use of technology as it relates to educational goals.
- While the overall agreement rates were above 80 percent, there was a consistent gap between teachers and administrative staff that ranged from 8 percentage points at the elementary school level to 14 percentage points at the middle school level.

Figure 12: Percent of Staff Who Agreed That Adequate Resources Have Been Allocated to Support the 1:1 Digital Learning Initiative



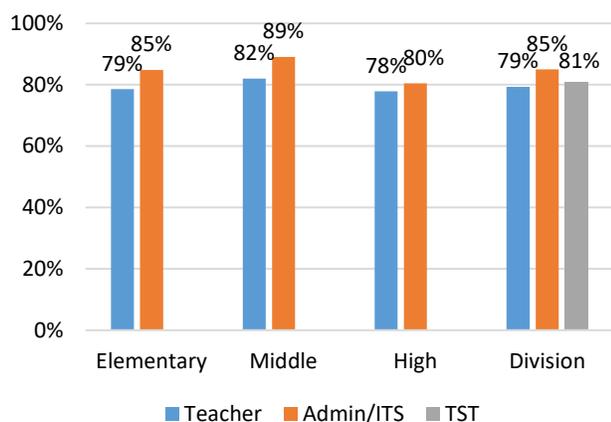
- High percentages of all staff groups agreed that overall, adequate resources have been allocated to support the 1:1 DLI including funding,

personnel, technical support, and professional development. Agreement rates ranged from 88 to 90 percent for teachers and 87 to 96 percent for administrative staff, with 88 percent of TSTs agreeing resources were adequate.

Stakeholder Engagement

The literature related to 1:1 DLI best practices and stakeholder engagement suggests that stakeholders should be actively involved in the planning and implementation of 1:1 programs. Stakeholders include all members of the school community, from administrators, teachers, and staff, to students and parents, to community members.¹⁸ Stakeholder engagement is important in program planning and implementation because if teachers, students, or parents do not understand the importance of technology use in the classroom or do not feel that their concerns are listened to, they will be far less engaged in the program or motivated to help the program succeed.¹⁹ Teacher, administrative staff, and TST survey results related to stakeholder engagement are displayed in Figure 13.

Figure 13: Percent of Staff Who Agreed Stakeholders Are Actively Involved in the Planning and Implementation of the 1:1 Digital Learning Initiative

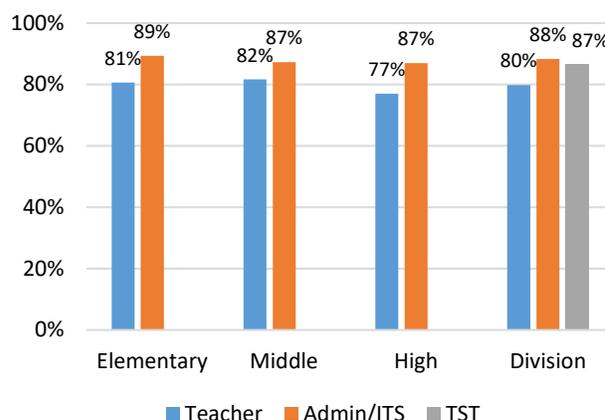


- The percent of respondents who agreed stakeholders (e.g., administrators, teachers, students, parents, community members) were actively involved ranged from 78 to 82 percent for teachers and 80 to 89 percent for administrative staff across school levels, with 81 percent of TSTs agreeing stakeholders were actively involved.

Infrastructure

Based on the literature related to infrastructure best practices when planning and implementing 1:1 programs, school and district leaders should address infrastructure issues and usage policies. Schools should provide high-speed wireless Internet and conduct network assessments to determine whether additional wireless access points are needed to support device use by all 1:1 students.²⁰ Additionally, schools may also need to increase bandwidth, as well as capacity of cloud storage or local servers; purchase additional equipment and software; and hire additional staff to support increased needs for technical support.²¹ In addition to infrastructure components being a best practice, one of the specific recommendations from the November 2017 evaluation approved by the School Board was to continue to optimize the digital device experience for students and staff by ensuring that device, network, and related infrastructure issues are promptly addressed and resolved. Teacher, administrative staff, and TST survey results related to infrastructure are displayed in Figure 14 and Figure 15.

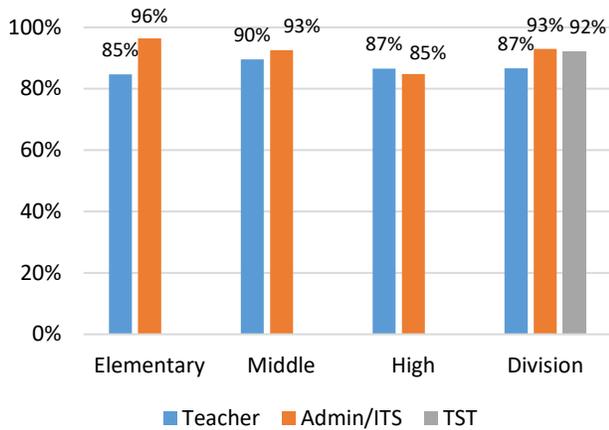
Figure 14: Percent of Staff Who Agreed VBCPS Infrastructure Adequately Supports the 1:1 Digital Learning Initiative



- A majority of teachers and administrative staff at each school level and TSTs agreed that the VBCPS infrastructure adequately supports the 1:1 DLI (e.g., wireless speed, network access points, bandwidth, capacity, equipment).

- Less than 80 percent of high school teachers agreed that the infrastructure adequately supported the initiative.

Figure 15: Percent of Staff Who Agreed Staffing Is Adequate to Provide Technical Support for the 1:1 Digital Learning Initiative

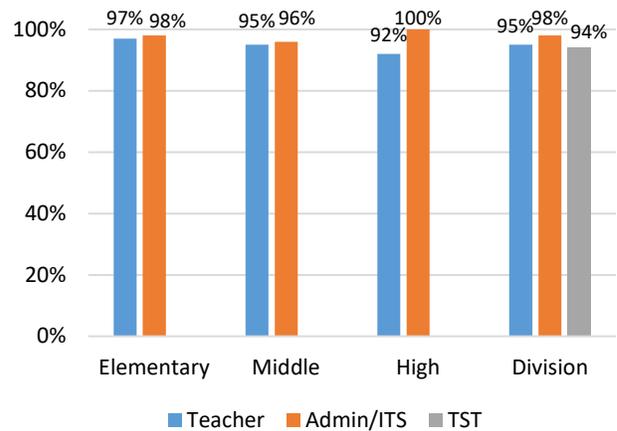


- At least 85 percent of staff groups who responded to the survey at each school level indicated that staffing was adequate to support their schools' needs for technical support related to the 1:1 DLI.

Usage Policies

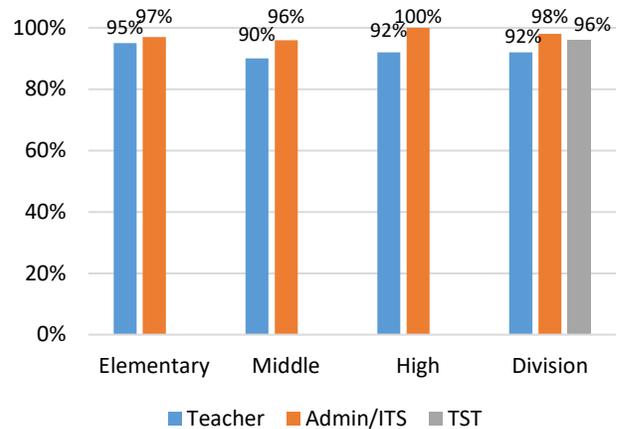
According to the literature related to 1:1 DLIs best practices for usage policies, developing policies related to device usage is important for successful 1:1 program implementation. Specifically, schools should develop policies related to acceptable use, device management, content filtering, and lost or damaged devices.²² Teacher, administrative staff, and TST survey results related to VBCPS 1:1 digital learning usage policies are displayed in Figure 16 through Figure 19. Percentages do not include staff members who indicated that a particular policy was not applicable to their experience or they did not know how satisfied they were.

Figure 16: Percent of Staff Satisfied With the Acceptable Use Policy



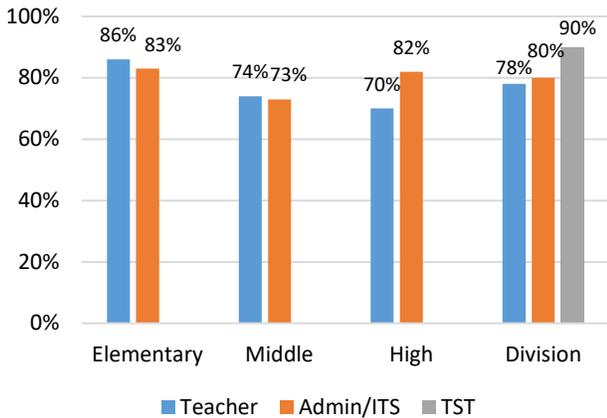
- Satisfaction with the acceptable use policy ranged from 92 to 97 percent for teachers and from 96 to 100 percent for administrative staff at each school level. A high percentage of TSTs were also satisfied (94%).

Figure 17: Percent of Staff Satisfied With the Device Management Policy



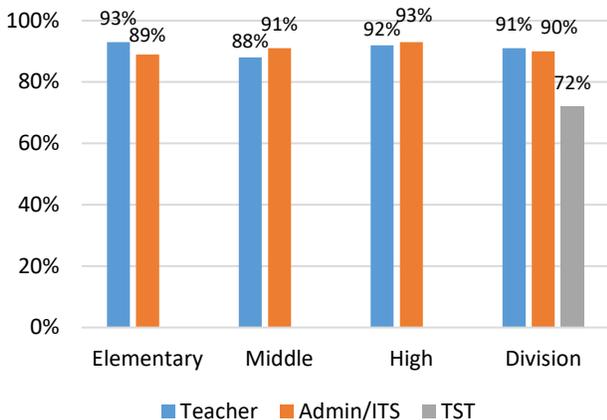
- Satisfaction with the device management policy ranged from 90 to 95 percent for teachers and from 96 to 100 percent for administrative staff at each school level. A high percentage of TSTs were also satisfied (96%).

Figure 18: Percent of Staff Satisfied With the Content Filtering Policy



- Less than 80 percent of teachers at the secondary school levels were satisfied with the content filtering policy, with the lowest level for high school teachers (70%).
- From 73 to 83 percent of administrative staff at each school level was satisfied with the content filtering policy, with the lowest level at middle school (73%). Across the division, 90 percent of TSTs were satisfied with the content filtering policy.

Figure 19: Percent of Staff Satisfied With the Lost or Damaged Device Policy



- Satisfaction with the lost or damaged device policy ranged from 88 to 93 percent for teachers and from 89 to 93 percent for administrative staff at each school level.

- In contrast to higher satisfaction among teachers and administrative staff, a lower percentage of TSTs across the division (72%) were satisfied with the lost or damaged device policy.

Technology Used to Support Initial Digital Learning Teacher and Student Outcomes

Teacher and student outcomes for the 1:1 DLI have been outlined since the creation of the digital learning anchor school initiative and were included in the two prior evaluations. Survey results related to teacher and student outcomes of the 1:1 DLI are presented in the sections below.

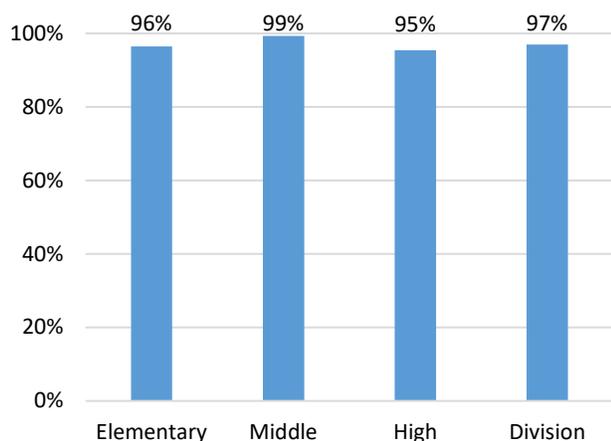
Teacher Outcomes

There were four previously established teacher outcomes related to the 1:1 DLI that were examined for this evaluation update. Teacher outcomes related to the 1:1 DLI included providing authentic learning experiences, empowering student choice, personalizing learning experiences, and professional growth.

Authentic Learning Experiences

The first teacher outcome stated, “Teachers will use digital technology to appropriately connect students to authentic learning experiences (outside the walls of the classroom).” As shown in Figure 20, at least 95 percent of teachers at each school level agreed that they used the devices and digital resources to connect students to authentic learning experiences.

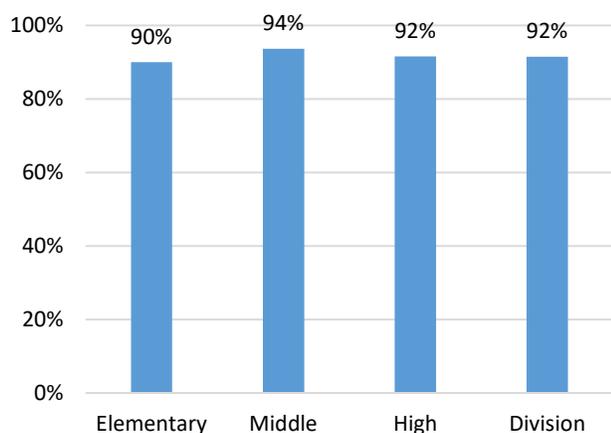
Figure 20: Percent of Teachers Who Agreed They Connect Students to Authentic Learning Experiences



Empower Student Choice

The second teacher outcome stated, “Teachers will empower students to choose their learning path through relevant and purposeful use of digital technology.” As shown in Figure 21, at least 90 percent of teachers agreed they empower students to choose their learning path through relevant and purposeful use of digital technology.

Figure 21: Percent of Teachers Who Agreed They Empower Students to Choose Their Learning Path

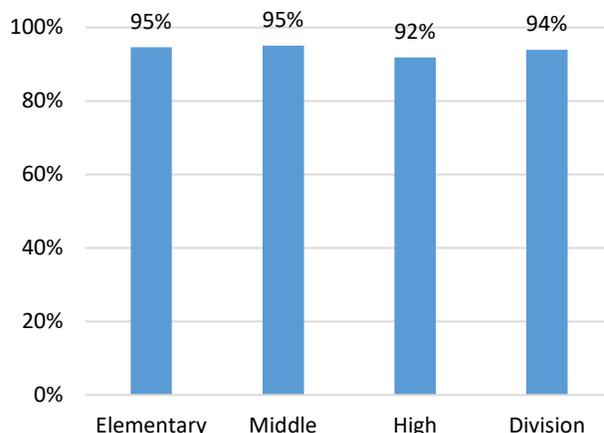


Personalized Learning Experiences

The third teacher outcome stated, “Teachers will personalize learning through real-time data collection and analysis and individualized learning experiences.” As shown in Figure 22, at least 92 percent of teachers

agreed they provided students personalized learning opportunities through the utilization of digital tools.

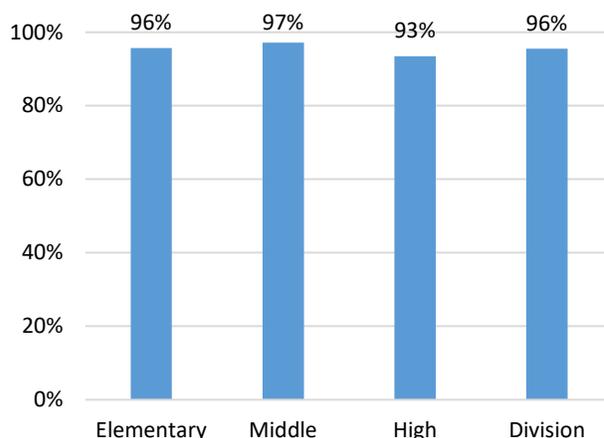
Figure 22: Percent of Teachers Who Agreed They Provide Students With Personalized Learning Opportunities



Professional Growth

The fourth outcome stated, “Teachers will use digital technology to collaborate, globally and locally, to foster professional growth.” As shown in Figure 23, at least 93 percent of teachers agreed that they and their colleagues shared digital resources, content, and ideas with one another to foster professional growth.

Figure 23: Percent of Teachers Who Agreed That They Share Digital Resources, Content, and Ideas With One Another



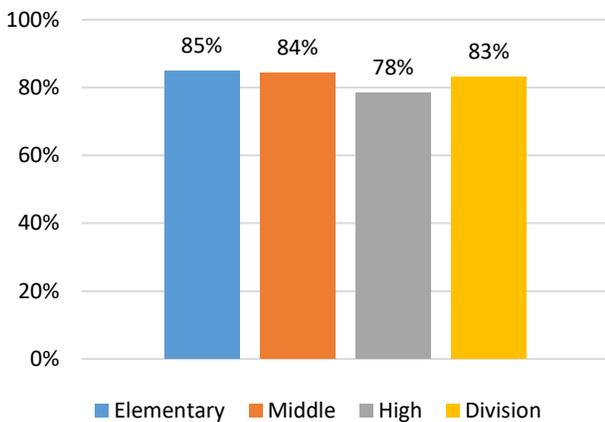
Student Outcomes

There were five previously established student outcomes related to the 1:1 DLI that were examined for this evaluation update. Student outcomes related to the 1:1 DLI included students taking ownership of their learning by being active partners, gaining a global perspective, collaboration, demonstrating academic mastery and growth, and becoming responsible and ethical digital citizens.

Active Partners in Learning

The first student outcome stated, “Students will take ownership of their academic growth by being active partners in their unique learning pathway by having voice and choice.” As shown in Figure 24, a majority of students at each school level agreed that having a device allowed them to make more decisions about their own learning. Slightly less than 80 percent of high school students agreed with this survey item.

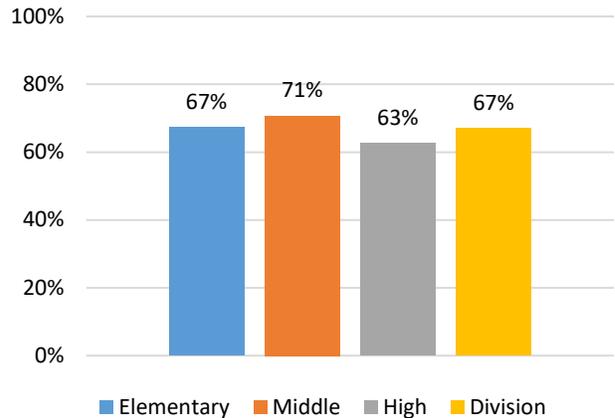
Figure 24: Percent of Students Who Agreed Having a Device Allows Them to Make More Decisions About Learning



Global Perspective

The second student outcome stated, “Students will gain a global perspective by leveraging digital tools.” As shown in Figure 25, from 63 percent of high school students to 71 percent of middle school students agreed that having their device helped them have a broader, more global view of the world.

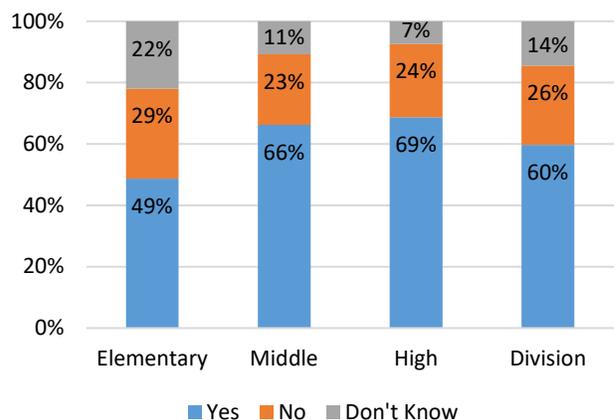
Figure 25: Percent of Students Who Agreed Having a Device Helps Them Have a Global View of the World



Collaboration

The third student outcome stated, “Students will collaborate using digital tools to support their learning and the learning of others.” As shown in Figure 26, less than 70 percent of student survey respondents at each school level indicated that they had used their assigned device to work together on class assignments and projects with other students in their school. Between 31 percent of high school students and 51 percent of elementary school students selected “no” or “don’t know.”

Figure 26: Percent of Students Who Indicated That They Used Device to Collaborate With Other Students



Academic Mastery and Growth

The fourth student outcome stated, “Students will demonstrate academic mastery and growth through

creation and publication of digital work.” As shown in Figure 27, from 72 to 83 percent of students at each school level agreed that using a device helped them better understand what they were learning, with somewhat lower agreement at high school. As shown in Figure 28, from 74 to 87 percent of students agreed that using a device helped them show what they have learned, with somewhat lower agreement at high school.

Figure 27: Percent of Students Who Agreed Using Their Device Helps Them Better Understand What They Are Learning

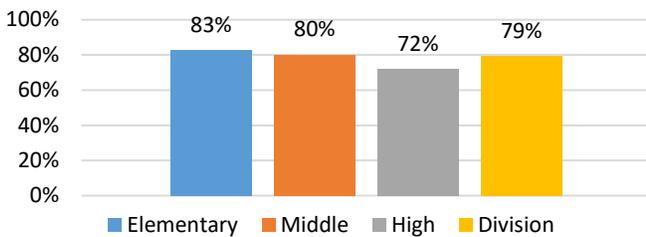
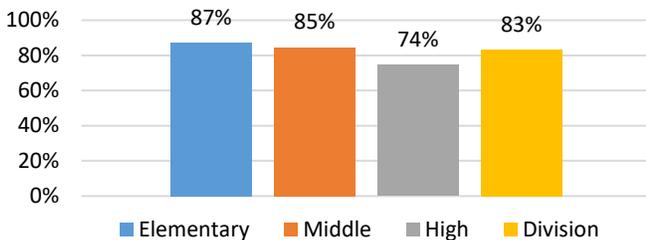


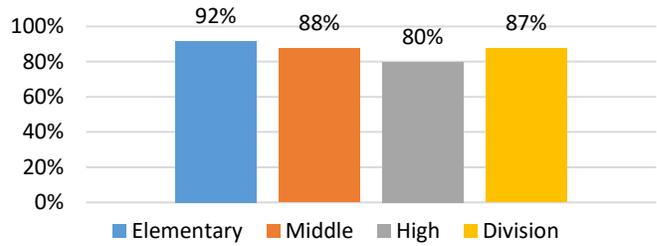
Figure 28: Percent of Students Who Agreed Using Their Device Helps Them Show What They Have Learned



Responsible and Ethical Digital Citizenship

The fifth student outcome stated, “Students will become responsible and ethical digital citizens.” As shown in Figure 29, 80 to 92 percent of students at each school level agreed that having their device helped them learn how to use technology in responsible ways. Highest agreement was found at elementary school followed by middle school and then high school.

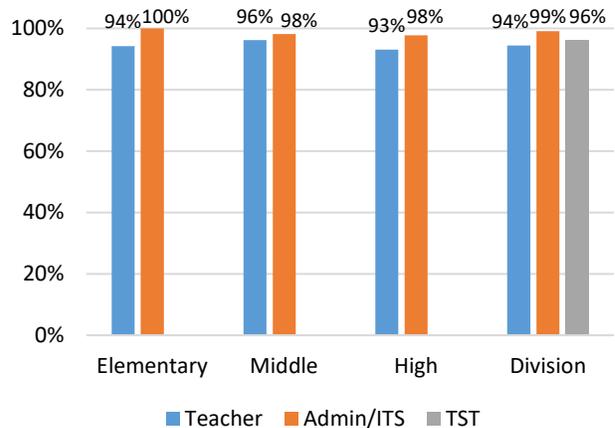
Figure 29: Percent of Students Who Agreed Having Their Device Helps Them Learn How to Use Technology in Responsible Ways



General Stakeholder Perceptions

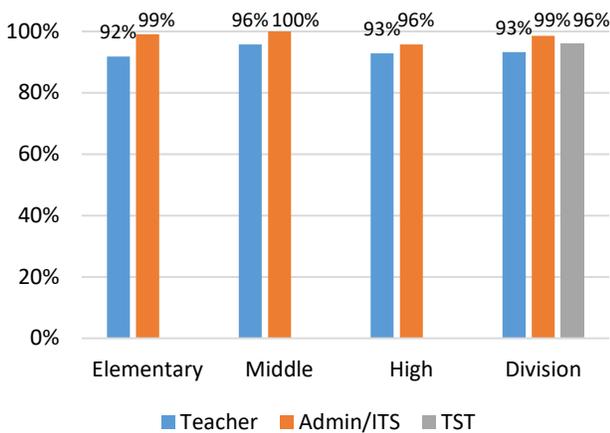
All surveys included questions regarding the overall perceptions of the 1:1 DLI. Teacher, administrative staff, and TST survey results related to overall stakeholder perceptions are displayed in Figure 30 and Figure 31, while student survey results are displayed in Figure 32.

Figure 30: Percent of Staff Who Agreed the 1:1 Digital Learning Initiative Has Been Successfully Implemented



➤ Overall, a large percentage of all staff groups who responded to the survey agreed that the 1:1 DLI has been implemented successfully in their school, with agreement rates ranging from 93 to 96 percent for teachers, from 98 to 100 percent for administrative staff, and 96 percent for the division’s TSTs.

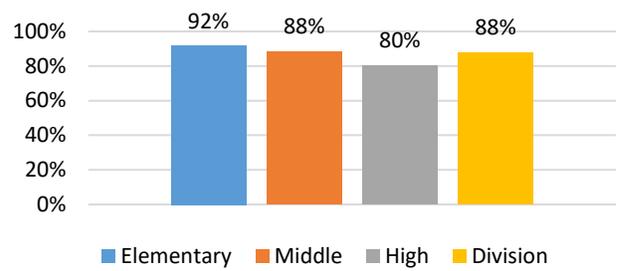
Figure 31: Percent of Staff Satisfied With the 1:1 Digital Learning Initiative



- Additionally, at least 92 percent of all staff groups who responded to the survey were satisfied with the 1:1 DLI during the 2019-2020 school year. These high satisfaction levels are particularly notable given the challenges that were experienced due to the school closure in March 2020.

On the survey, teachers were provided the opportunity to provide feedback about the 1:1 DLI through open-ended questions regarding the benefits of the 1:1 DLI and any improvements they would suggest. When teachers were asked to list the benefits of the 1:1 DLI, there were three prominent themes: empowering student voice and choice, all resources were located in one place, and the ability to maintain the continuity of learning. When responding to the question about improvements needed for the 1:1 DLI, the most prominent themes were more opportunity for professional learning, better content filtering, increased student accountability with devices and assignments, and access to device accessories (e.g., chargers and power strips) in the classroom.

Figure 32: Percent of Students Satisfied With Using Their Assigned Device



- Overall, a majority of students were satisfied with using their assigned device during 2019-2020, with the highest satisfaction rates for elementary school students (92%) and somewhat lower satisfaction rates for high school students (80%).

Students had the opportunity to provide feedback about the 1:1 DLI through open-ended questions regarding the best thing about their device and any improvements they would suggest. When students were asked about the best thing about their device, the most prominent themes were: the ability to work at their own pace, the ability to access and complete their work from anywhere, all resources were located in one place, and a sense of ownership of the device. When responding to the question about needed improvements, the most prominent themes were that no changes were needed and fewer restrictions or easing of the content filtering rules.

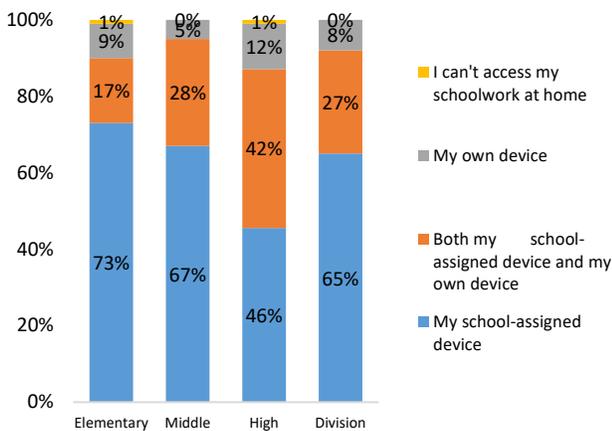
Digital Learning Initiative and the Emergency Learning Plan

Due to the 1:1 DLI being implemented prior to the COVID-19 school closure in March 2020, all first through twelfth grade VBCPS students already had a school-assigned device, and the Department of Technology provided resources to assist students and families in gaining internet access if needed. While the focus of this evaluation update was on the progress of the 1:1 DLI overall, questions related to the impact of the 1:1 DLI on the transition to the emergency learning plan and learning at home during the school closure were included on the survey.

As an initial examination of the impact of having a school-assigned device on students' at-home learning during the school closure, students were asked to

indicate how they accessed and worked on their schoolwork at home. As shown in Figure 33, having a school-assigned device had the largest impact on elementary and middle school students who were most likely to indicate that they used only their school-assigned device to work on their schoolwork at home (73% of elementary students and 67% of middle school students). Overall, when examined by school level, at least 88 percent of students indicated that they used their school-assigned device at some point to complete their work when away from school.

Figure 33: Percent of Students Indicating Device Used to Complete Schoolwork When Away From School

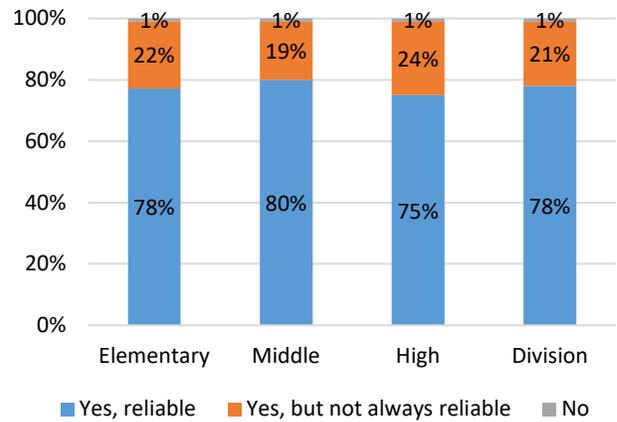


An essential component of the emergency learning plan was the ability for students and families to connect to school-based staff via the school-assigned device either using their personal internet connection or using a hotspot provided by VBCPS. Figure 34 displays student survey data related to internet access at home. As a reminder, the survey was administered online during the school closure, and respondents must have utilized some type of internet-connected device to provide responses. Therefore, students who did not have internet access at their home may have had less of an opportunity to respond to this question regarding internet access. However, respondents could have completed the survey from a public location with Wi-Fi access, such as a school parking lot or a grocery store.

Results showed that almost all students (99%) who responded to the survey indicated they had some type of internet access at home, and at least 75 percent of students across all levels indicated they had a reliable internet connection at home. Approximately 1 percent

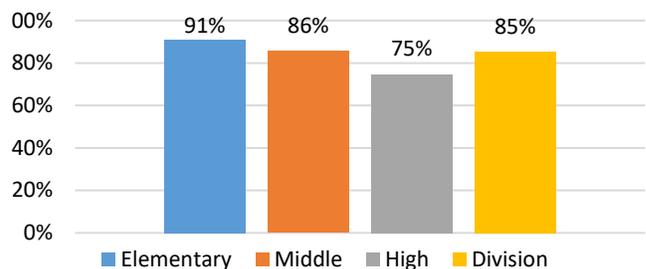
of students indicated they did not have internet access at home.

Figure 34: Percent of Students Who Indicated Their Ability to Access the Internet at Home



To understand the impact of the 1:1 DLI on the transition to learning from home during the school closure, students were asked if having a school-assigned device helped them to transition to learning from home. Figure 35 shows that overall, 85 percent of students who responded to the survey agreed that having their school-assigned device helped them transition to learning from home. Agreement rates decreased as the school level increased with the highest agreement rate from elementary school students (91%) and the lowest agreement rate from high school students (75%).

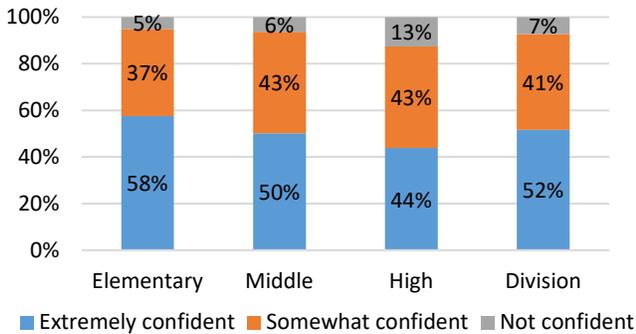
Figure 35: Percent of Students Who Agreed a School-Assigned Device Helped Them Transition to Learning From Home



Students were also asked about their level of confidence in their ability to complete the schoolwork assigned to them during the school closure. As shown in Figure 36, at least 87 percent of students at each school level indicated that they were at least

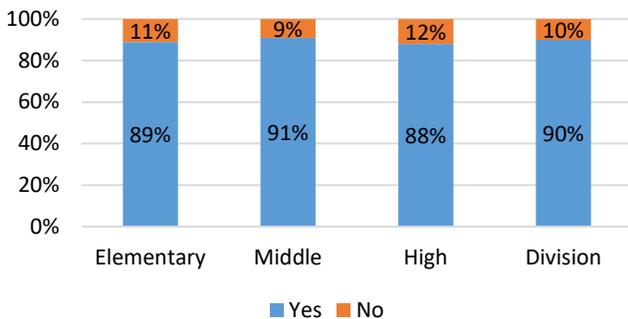
“Somewhat confident” they would be able to complete their assignments for the remainder of the year.

Figure 36: Percent of Students Who Indicated Their Level of Confidence in Completing Assigned Schoolwork for Year



Finally, students were asked if they had the support necessary to complete their assignments during the school closure. Figure 37 shows that at least 88 percent of students at each school level indicated they had the help or support they needed to complete their assignments during the school closure. Students who answered “No” were asked a follow-up open-ended question about what additional assistance would be helpful. The most prominent themes from their comments were that they needed additional assistance from either parents or teachers and that they wanted more communication with teachers during the school closure.

Figure 37: Percent of Students Who Indicated They Had the Support Needed to Complete Assignments During the School Closure



Teachers were also asked to provide their perceptions of student participation and engagement during the school closure. As shown in Figure 38, a majority of teachers indicated that at least half of their students

had consistently participated in remote learning in the past week ranging from 78 percent at the high school level to 87 percent at the elementary school level. The percentage of teachers who indicated that almost all students consistently participated in remote learning during the past week decreased as the school level increased with the highest agreement rate at the elementary school level (33%) and the lowest agreement rate at the high school level (8%).

Figure 38: Percent of Teachers Who Indicated the Level of Student Participation in Remote Learning

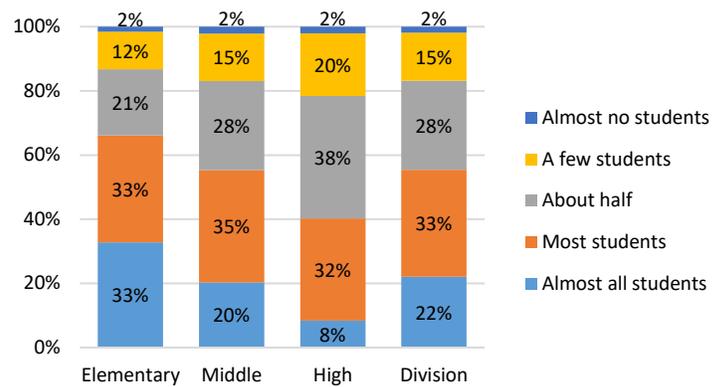
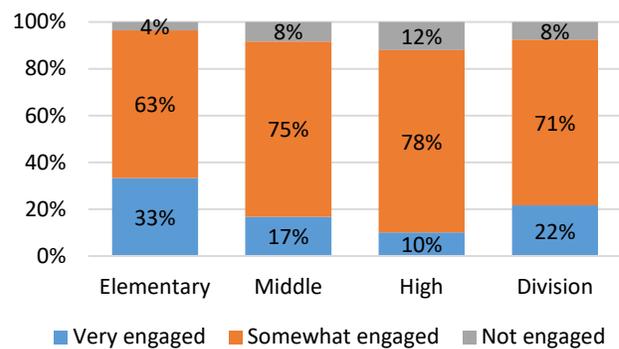


Figure 39 shows teachers’ perceptions of student engagement during remote learning. When analyzed by school level, at least 87 percent of teachers indicated that students who participated in remote learning were at least “Somewhat engaged” during the past week. Teachers’ perceptions of student engagement were highest at elementary school with 33 percent of teachers indicating their students were “Very engaged.”

Figure 39: Teacher Perceptions of Student Engagement With Remote Learning



Teachers, administrative staff, and TSTs were asked to provide feedback regarding the obstacles they encountered while delivering instruction during the school closure. The most prominent themes were issues associated with Schoology, student internet access, lack of parent resources regarding how to use applications, lack of student engagement, and a lack of usability for younger students.

Summary

By 2018-2019, the 1:1 DLI provided all VBCPS students in first through twelfth grade with a school-assigned device for their use, and kindergarten students had access to classroom devices. In addition, VBCPS assisted students and families with obtaining internet access if internet was unavailable at their home. The overall goal of the initiative was “To use digital learning as a pathway to personalized learning by increasing student flexibility with respect to when and how learning occurs.” This evaluation update was conducted as a result of a School Board approved recommendation from the November 2017 program evaluation of the Digital Learning Anchor Schools. The evaluation update focused on the progress of the initiative after expansion to all division schools, alignment with best practices, and progress toward meeting initial teacher and student outcomes of the initiative. Data for the evaluation update were collected from the departments of Human Resources, Teaching and Learning, and Technology; stakeholder surveys; and VBCPS communications.

To support the implementation and functioning of the 1:1 DLI, ITSs and TSTs must be adequately staffed in schools. A review of documents indicated that all schools had at least one full-time ITS focused on instructional technology support and TST focused on technology support. At least 85 percent of staff at each school level agreed that staffing was adequate to support their schools’ needs for instructional support as well as technical support related to the initiative. From 80 percent of high school students to 86 percent of elementary students agreed they were able to receive help with any problems related to their devices.

The alignment of the VBCPS 1:1 DLI to best practices in the literature was assessed based on staff perception data. Best practices included student-

centered learning, technology integration and immersion, professional learning, equity, effective leadership, stakeholder engagement, infrastructure, and usage policies. Staff agreement rates for questions related to student-centered learning, technology integration and immersion, professional learning, equity, and effective leadership were at least 80 percent at each school level for all staff groups surveyed. Levels of agreement regarding stakeholder engagement in planning and implementing the initiative and infrastructure to support the initiative were also relatively high with at least 77 percent of all staff groups at each school level agreeing with related survey items. When asked about usage policies, high percentages of staff at each school level were satisfied with the acceptable use policy (92% to 100%) and the device management policy (90% to 100%). Satisfaction with the content filtering policy (70% to 90%) and the lost or damaged device policy (72% to 93%) were more variable depending on the staff group and school level.

Teacher and student outcomes related to the 1:1 DLI were also assessed using perception data. Overall, at least 90 percent of teacher respondents at each school level indicated that they use the devices and digital resources to connect students to authentic learning experiences; empower students to choose their learning path through relevant and purposeful use of digital technology; provide students with personalized learning opportunities by having them use the digital tools; and that colleagues share digital resources, content, and ideas with one another to foster professional learning. Students’ perceptions of their outcomes were more varied, but agreement rates were most positive at the elementary school (67% to 92%) and middle school (71% to 88%) levels. Agreement rates for high school students responding to the survey were lower for each survey item regarding the initiative’s impact on them making more decisions about their learning, helping them have a more global view of the world, helping them better understand and show what they have learned, and helping them learn to use technology in responsible ways (63% to 80%). The percentage of students who indicated that they used their assigned device to work together on class assignments and projects with other students at their school was relatively low ranging from 49 percent at elementary school to 69 percent at high school.

Overall staff perceptions of the 1:1 DLI were very positive at each school level with a high percentage of staff reporting that the 1:1 DLI has been successfully implemented in their school (93% to 96% of teachers, 98% to 100% of administrative staff, and 96% of TSTs). Additionally, 92 to 96 percent of teachers at each school level, 96 to 100 percent of administrative staff at each school level, and 96 percent of TSTs across the division were satisfied with the 1:1 DLI. Students were also largely satisfied with using their assigned device with satisfaction rates ranging from 80 percent for high school students to 92 percent for elementary school students.

Although not initially a planned component of this evaluation update, the March 2020 COVID-19 school closure provided an opportunity to assess how the 1:1 DLI impacted students' learning experience at home. The implementation of the 1:1 DLI assisted in the transition from the classroom environment to the emergency learning plan and remote learning because students had a device and were provided access to a hotspot if necessary. Survey data indicated that at least 88 percent of students at each school level used their school-assigned device to complete their schoolwork, and from 75 percent of high school students to 91 percent of elementary school students agreed that having their school-assigned device helped them transition to learning from home. Of students who responded to the survey, at least 88 percent at each school level indicated that they had the support they needed to complete assignments during the school closure, and at least 87 percent at each school level were confident they could complete their assigned tasks for the remainder of the school year. From the teacher perspective, a majority of teachers indicated that at least half of their students had consistently participated in remote learning in the past week (78% at high school, 83% at middle school, 87% at elementary school), and at least 88 percent of teachers at each school level indicated that students were somewhat or very engaged during remote learning.

Endnotes

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- ² M. Robinson, personal communication, July 22, 2020.
- ³ Source: <https://www.vbcpsupport.com/internet-access/>
- ⁴ L. Hill, personal communication, August 4, 2020.
- ⁵ The TSTs were only surveyed regarding the 1:1 DLI. Due to the small number of TSTs in middle and high schools, survey results are only published for the division level.
- ⁶ Sell, G.R. et al. "A Meta-Synthesis of Research on 1:1 Technology Initiatives in K-12 Education." Institute for School Improvement, Missouri State University, April 30, 2012. p. 22.
https://education.missouristate.edu/assets/clse/Final_Report_of_One-to-One_Meta-Synthesis_April_2012_.pdf
- ⁷ Penuel, W.R. "Implementation and Effects of One-to-One Computing Initiatives: A Research Synthesis." Journal of Research on Technology in Education, 38:3, Spring 2006. p. 335. <http://files.eric.ed.gov/fulltext/EJ728908.pdf>
- ⁸ Topper, A. & S. Lancaster. "Common Challenges and Experiences of School Districts That Are Implementing One-to-One Computing Initiatives." Computers in the Schools, 30:346–358, 2013. p. 352.
http://www.egrps.org/documents/Tech%20Knowledge%20Base/Research/topper_lancaster.pdf
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- ¹⁰ Sung, Y.-T., K.-E. Chang, & T.-C. Liu. "The Effects of Integrating Mobile Devices with Teaching and Learning on Students' Learning Performance: A Meta-Analysis and Research Synthesis." Computers & Education, 95, March 2016.
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<http://www.intel.com/content/dam/doc/how-to-guide/education-virtualization-blueprint-for-elearning-guide.pdf>
- ¹³ Warschauer, M. et al. "Balancing the One-To-One Equation: Equity and Access in Three Laptop Programs." Equity & Excellence in Education, 47:1, 2014. p. 48. <http://education.uci.edu/uploads/7/2/7/6/72769947/balancing.pdf>
- ¹⁴ Court, S.C., & Janicki, H.L. (2017). Digital Learning Anchor Schools: Year-Two Developmental Evaluation. Virginia Beach, VA: Office of Planning, Innovation, and Accountability, Virginia Beach City Public Schools.
- ¹⁵ "Future Ready Schools: Building Technology Infrastructure for Learning." U.S. Department of Education, November 2014. p. 12. <https://tech.ed.gov/wp-content/uploads/2014/11/Future-Ready-Schools-Building-Technology-Infrastructure-for-Learning-.pdf>
- ¹⁶ Topper, A. & S. Lancaster. "Common Challenges and Experiences of School Districts That Are Implementing One-to-One Computing Initiatives." Computers in the Schools, 30:346–358, 2013. p. 352.
http://www.egrps.org/documents/Tech%20Knowledge%20Base/Research/topper_lancaster.pdf
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<http://www.intel.com/content/dam/doc/how-to-guide/education-virtualization-blueprint-for-elearning-guide.pdf>
- ²² "Future Ready Schools: Building Technology Infrastructure for Learning." U.S. Department of Education, November 2014. pp. 57-65. <https://tech.ed.gov/wp-content/uploads/2014/11/Future-Ready-Schools-Building-Technology-Infrastructure-for-Learning-.pdf>

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