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# Strategic Technology Plan 2020-2025

***"To empower high quality learning for all students within and beyond school walls"***

Approved August 25, 2020, and February 9, 2021

# Executive Summary

Washoe County School District's Strategic Technology Plan, 2020-2025, establishes an ambitious pathway to empower *high quality learning for all students within and beyond school walls*. Extensive consultation with stakeholders, notably the Strategic Technology Planning Task Force, guided the identification of priorities, and the development of goals and action steps. This process, along with comprehensive stakeholder surveys and focus groups, ensures this plan represents broad WCSD priorities.

The plan will be revised annually to ensure alignment with District strategic planning, learning and teaching, and operational needs. Written to identify current opportunities and needs, and establish desired outcomes, this plan focuses on the core business of WCSD: learning and teaching, supported by business operations and the technology needed for these purposes.

The goals of this plan represent twelve functional areas:

- Technology Governance
- Learning and Teaching
- Professional Learning and Training
- Distance Learning
- Devices and Hardware
- 1:1 Schools
- Technology Support
- Critical Business Systems
- Information Technology Infrastructure and Operations
- Safety and Security
- Sustainability
- Communication

Many of the action steps in this plan can be implemented without additional funding and resources and may be guided by the governance structure outlined. Additional funding sources will be required for full implementation of all elements. However, there is the potential for cost savings to accompany plan implementation, especially through action steps such as the establishment of a District-wide device refresh program.

# Contents


Executive Summary ..... 2

Introduction ..... 5

Background ..... 5

Plan Development ..... 6

Goals ..... 6

Mission, Vision, and Guiding Principles ..... 8

Mission ..... 8

Vision ..... 8

Guiding Principles ..... 8

Plan Structure ..... 9

Goals ..... 9

Action Steps ..... 9

Implementation and Timeline ..... 9

1. Technology Governance ..... 10

Goals ..... 10

2. Learning and Teaching ..... 14

Goals ..... 14

3. Professional Learning and Training ..... 16

Goals ..... 16

4. Distance Learning ..... 18

5. Devices and Hardware ..... 19

Goals ..... 19

6. 1:1 Schools ..... 21

7. Technology Support ..... 23

Goals ..... 23

8. Critical Business Systems ..... 26

Goals ..... 27

9. Information Technology Infrastructure and Operations ..... 28

Goals ..... 28

10. Safety and Security ..... 31

Goals ..... 31

11. Sustainability....33
Goals....33
12. Communication....35
Goals....35
Implementation Plan and Budget....36
Continuous Improvement and Evaluation....37
Glossary....38
Appendix A – Stakeholder Groups....39
WCSD Board of Trustees....39
Strategic Technology Planning Task Force....39
Strategic Technology Planning Work Groups....40
District Growth and Technology Work Group....41
Appendix B: Strategic Technology Plan Survey 2020: Report....42
Appendix C: Student Focus Group Results....57
Appendix D: Traner Middle School 1:1 Implementation Report....71

# Introduction

Technology empowers and enables learning and teaching for the modern world. In a highly interconnected globalized economy, students must be prepared to leave their K-12 experience ready for careers, colleges, and life. Technology is embedded within our daily lives. This strategic technology plan outlines how Washoe County School District (WCSD) will meet these demands and educate students for the 21st Century. The plan articulates a comprehensive mission and vision for technology in WCSD and addresses learning and teaching with technology along with business operations.

## Background

Washoe County School District (WCSD) is a Pre-K-12 district serving approximately 64,000 students in northeastern Nevada. Serving the cities of Reno and Sparks, and outlying areas of Washoe County, our student population is diverse, consisting of 56.1% minority students, 15.2% English learners (ELL), 13.9% students with special needs (IEP) students, and 47.0% of students receiving free or reduced-price lunch (FRL). The District consists of 104 schools, 41 of which are designated Title I. Of our 96 school buildings, 79 (82%) are greater than 20 years old. WCSD's annual general fund budget approaches $500 million.

The WCSD Office of Information Technology supports the technology needs of over 72,000 users. Technology is an increasing priority for teaching and learning and for operational needs. Several factors have significantly changed the technology landscape in WCSD over the past ten years. Since 2010, the number of WCSD-owned computer devices has risen from around 18,000 to over 68,000, a 378% increase over ten years. A significant shift toward schools' acquisition of mobile technologies has also occurred. Over the past three school years (2016-17 to 2018-19) schools in WCSD purchased 28,716 mobile devices, representing 92% of all device purchases.

Empowered by widely available wireless access among families and in the Reno-Sparks community, schools have sought to implement commercially available emerging technologies into educational practices. For instance, many schools are experimenting with curricular integration of augmented reality (AR) and virtual reality (VR) technologies. The District now supports five 1:1 schools with a device for each student and staff member for their use throughout the school day and at home.

Regarding mandates, technology use is deeply embedded in the Nevada Academic Content Standards. And in 2019, Nevada adopted K-12 content standards for Computer Science and Integrated Technology.[1] Ensuring students and staff are safe and secure is critical. Increasing threats to information and cybersecurity pose a significant risk to WCSD information technologies. The Federal and State legislative climate suggests continued prioritization of student data privacy.

Supporting these initiatives, however, has been challenging for the District given historical budget constraints, and requires significant intentionality and planning. Information technology operations

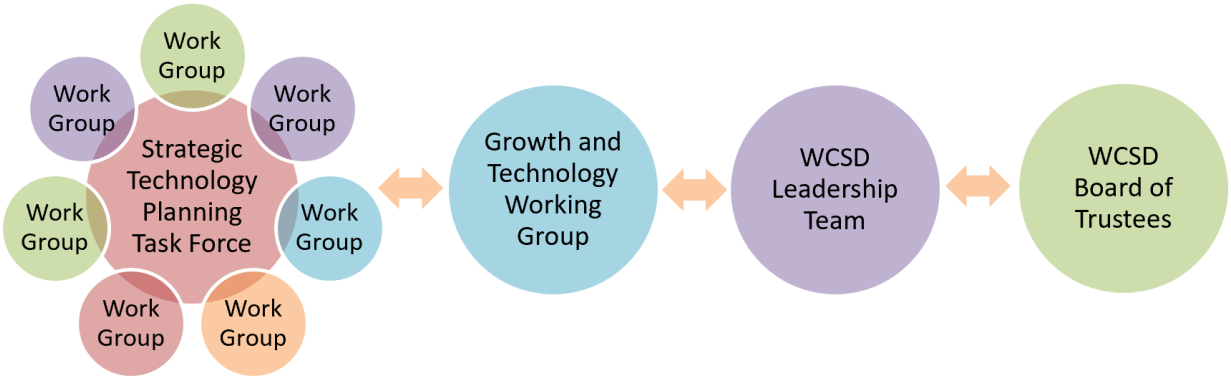
[1] http://www.doe.nv.gov/uploadedFiles/nde.doe.nv.gov/content/Nevada_Academic_Standards/Comp_Tech_Standards/NevadaAcademicContentStandards_forrev.pdf

must be sufficient to adequately serve the needs of students and teachers for operational, up-to-date, and technically sound equipment, software, and services. Yet, a 2016 audit demonstrated that technology operations in WCSD remain significantly under-resourced when compared to similar districts. A robust refresh strategy, incorporating device and software acquisition to supplement the recently funded infrastructure refresh program, would support many of the District's technology needs and streamline the delivery of technology services.

## Plan Development

This *WCSD Strategic Technology Plan, 2020-2025*, was prepared in a process of extensive consultation with stakeholders (See Appendix A). In October, 2019, a Strategic Technology Planning Task Force was constituted, representing a broad cross section of stakeholders. This task force met regularly between October, 2019, and March, 2020, with members of the task force leading topic-focused working groups. These working groups were charged with researching and recommending goals and strategies for each functional area of the overall plan. A writing group, made up of members of the task force and Office of Information Technology compiled the recommendations into a cohesive document. The WCSD Growth and Technology Working Group, made up of District leaders, oversaw the Task Force process. The plan development process is represented below, in Figure 2.

***Figure 2: Plan Development Process***




The WCSD Office of Accountability prepared and distributed a survey of key stakeholders, and prepared a report of findings (see Appendix B) which were incorporated into the task force recommendations. A series of student focus groups also contributed to the recommendations (see Appendix C).

## Goals

This plan is comprised of twelve overarching goals which, taken together, provide strategic direction for the management of technology in WCSD. These goals are:

- Technology Governance
- Learning and Teaching
- Professional Learning and Training
- Distance Learning
- Devices and Hardware
- 1:1 Schools

- Technology Support
- Critical Business Systems
- Information Technology Infrastructure and Operations
- Safety and Security
- Sustainability
- Communication

A section on implementation plan and budget outlines the necessary resources and timing for plan realization. Finally, a section on continuous improvement and evaluation ensures strategies are in place to monitor progress and provide governance groups with the necessary data and information to manage and control plan implementation.

# Mission, Vision, and Guiding Principles

## Mission

We are dedicated to providing innovative design, delivery, support, and adaptation of technologies for exceptional learning and teaching for all.

## Vision

Washoe County School District's Strategic Technology Plan will ensure equitable access to relevant and state of the art technology resources that support high quality student- and staff-centered learning, and effective school district operations to ensure career success and lifelong learning.

## Guiding Principles

***"To empower high quality learning for all students within and beyond school walls."***

Technology and connectivity are accessible, reliable, and available to all students and staff.

Digital Citizenship will be continuously practiced during all learning opportunities.

Technology is purposefully integrated to support clear learning goals defined by teachers and students.

Instructional leaders empower individual and collaborative use of technology in innovative, purposeful, and student directed ways.

Technology provides opportunities for rich multi-media collaboration and communication within and beyond the classroom.

Teachers and administrators actively explore and implement emerging trends in the effective use of technology for their potential to improve student directed learning.

Information and Communications infrastructure in the community and personal device use supports students' ability to work on solving real-world challenges with employers and community groups.

# Plan Structure

This plan is built around broad strategic priorities which, taken together, provide a holistic approach to ensuring that WCSD technology resources meet the academic and business needs of the District. In each section, a discussion of the strategic priority is followed by goals and action steps developed in consultation with stakeholder groups.

## Goals

The goals outlined in this plan are statements of a future desired state. Taken together, this plan's goals articulate specific improvements to the District's current efforts.

## Action Steps

In this plan, Action Steps identify specific strategies designed to achieve each goal. During plan development.

## Implementation and Timeline

The Implementation Plan section outlines the necessary activities, resources, timelines, and success criteria to achieve each action step.

# 1. Technology Governance

Washoe County School District will establish a Technology Governance Framework to align the acquisition, management, and use of District technologies with organizational goals and priorities. Through effective, efficient, and informed decision-making structures and processes, WCSD can ensure that technology meets the needs of students and staff, so our community and the District can better realize the value of its investments in technology. Effective technology governance ensures that timely technology decision making is undertaken in full consultation with relevant stakeholders and best meets the diverse needs of the District's students, staff, families, and our community.

## Goals

| **Goal 1.1** | **Implement a Technology Governance Framework to oversee decision-making related to technology acquisition, management, and use** |
|---|---|
| **Action Step 1.1.1** | Create a WCSD Technology Governance Group composed of District executive leaders to align technology acquisition, deployment, and implementation with District strategic priorities. |
| **Action Step 1.1.2** | Initiate a Technology Standards Governance Group, Data Governance Group, Security Governance Group, and Technology Advisory Group to effectively oversee District decision-making related to technology acquisition, management, and use. |
| **Action Step 1.1.3** | School Digital Learning Committees will establish purposeful site-level technology governance by preparing and annually reviewing and revising a Digital Learning Plan as part of School Performance Planning, and aligned to the District Strategic Technology Plan. |

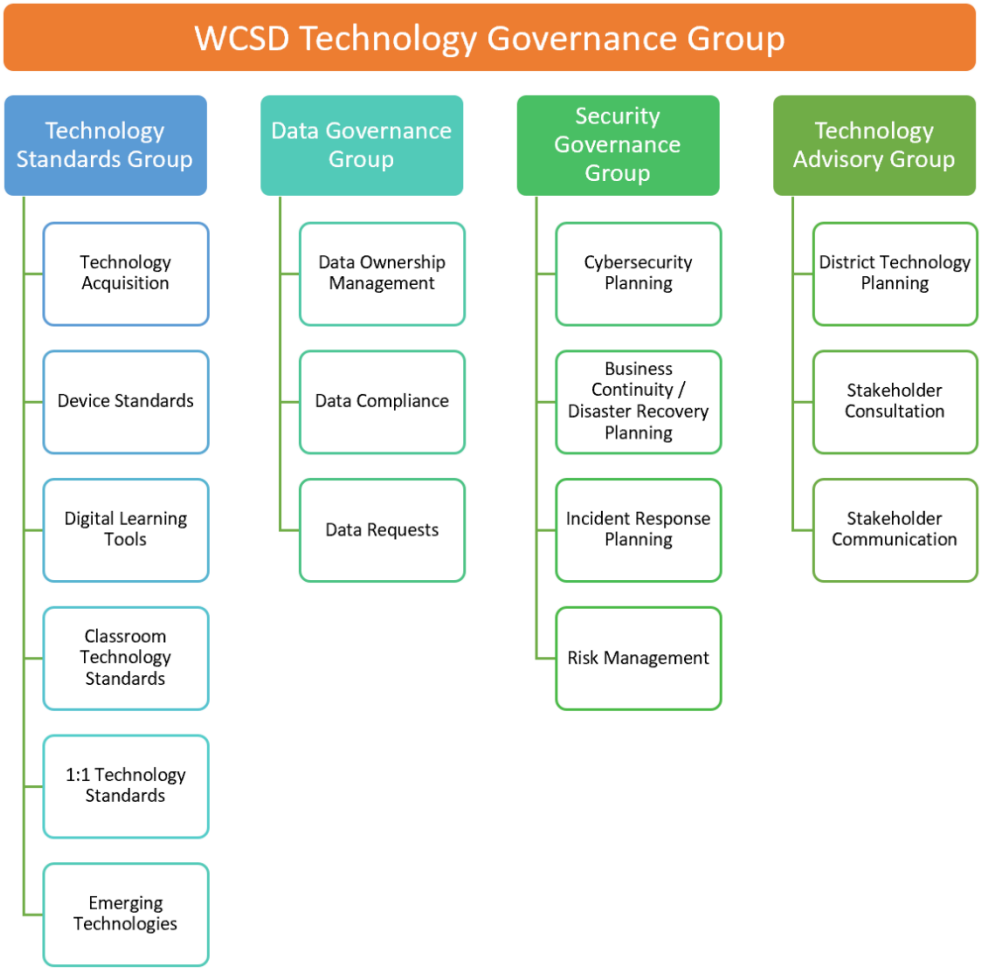
The Technology Governance Framework will establish a thorough, inclusive decision-making process through groups empowered to consider all stakeholders, available resources, equity, impact, and value of investment. Four key governance groups will undertake this work, outlined in Figure 1.

Collectively, the governance groups will

- oversee the implementation of and updates to the District Strategic Technology Plan,
- create policies, regulations, and procedures by which decisions related to the acquisition and management of technology best support District goals,
- determine priorities in allocating resources to technology initiatives,
- ensure meaningful stakeholder engagement and consultation occurs in making recommendations involving information technologies,
- ensure responsibility for management of technology is assigned appropriately among information technology staff, department staff, and end users, and that user needs related to information technologies are addressed in a timely manner.

School Digital Learning Plans, updated annually, will serve as site-level governance documents aligned to the District Strategic Technology Plan.

***Figure 1: Technology Governance Framework***




| **Goal 1.2** | **Ensure District data is appropriately managed and safeguarded** |
|---|---|
| **Action Step 1.2.1** | WCSD will establish a Data Governance Group tasked with overseeing data policies and practices, along with a Data Compliance Committee and Data Request Committee overseen by the Data Governance Group. |
| **Action Step 1.2.2** | WCSD will earn the Trusted Learning Environment (TLE) Seal[2] as a mark of distinction signaling that WCSD has taken strong and measurable steps to ensure the privacy of student data. |

WCSD values the trust of our students, staff, families, and community members, and is committed to safeguarding and appropriately managing the storage, use, sharing, and disposal of District data, records, and information. The WCSD **Data Governance Group** will oversee the development and management of policies, regulations, procedures, and practices related to all District data. The Group

[2] www.trustedlearning.org

will oversee department data ownership, procedures by which data may be requested by internal and external stakeholders, review and approval of vendors requiring access to District data, review and approval of requests for procurement of software, digital tools, and hardware which utilize District data, and oversight of the Data Compliance and Data Request Committees.

The **Data Compliance Committee**, under the oversight of the Data Governance Group, will review and approve or deny all requests for the procurement of software, digital tools, and hardware which utilize District data. Reviewing these tools and services prior to purchase will ensure that appropriate data privacy and security practices are in place prior to implementation.

The **Data Request Committee**, under the oversight of the Data Governance Group, will review and approve or deny all external data requests that contain personally identifiable information (PII). Reviewing all data requests will ensure that all data sharing occurs in the advancement of District priorities, is in compliance with Federal and State laws and District policies and is appropriately managed. The Committee will establish procedures for internal data requests to facilitate timeliness of data access for approved internal requestors.

The **Trusted Learning Environment (TLE) Seal** is a mark of distinction signaling that K-12 districts have taken strong and measurable steps to ensure the privacy of student data. Earning this seal will demonstrate to our community that WCSD takes student data privacy seriously and has in place a comprehensive strategy informed by established best practices to protect this data.

| **Goal 1.3** | **Technologies acquired by WCSD will conform to established standards to best meet student and staff needs, and will be acquired purposefully in full consultation with stakeholders** |
|---|---|
| **Action Step 1.3.1** | WCSD will establish a Technology Standards Governance Group to create and manage standards for devices, digital learning tools, classroom technologies, technology acquisition, 1:1 technologies and procedures, identification and acquisition of emerging technologies, and necessary exceptions to these standards. |

Aligning District acquisition of technologies to meet agreed-on needs for students and staff provides cost and efficiency benefits and better empowers the use of technology in schools and departments. The establishment of clear standards for technologies enables streamlined purchasing, support, and professional learning focused on District technologies. A Technology Standards Governance Group will oversee District standards, including a robust process of stakeholder engagement in decision making.

| **Goal 1.4** | **Ensure District information and cybersecurity operations support District operations and reasonably protect student and District data and technology systems** |
|---|---|
| **Action Step 1.4.1** | WCSD will continue and strengthen a Security Governance Group tasked with overseeing security policies and practices, cybersecurity planning, business continuity and disaster recovery planning, incident response planning, and identifying, managing, and mitigating risks related to District technologies. |

| | |
|---|---|
| **Action Step 1.4.2** | A comprehensive information and cybersecurity plan, overseen by the Security Governance Group, will guide all District security operations. |

Protecting WCSD from threats to District technology is critical, especially as school districts are increasingly targeted with cyber-attacks. Ensuring that appropriate consideration can be given to information and cybersecurity needs requires effective governance. A Security Governance Group will oversee security-related decisions to establish security operations, identify risks, plan for business continuity, disaster recovery, and security incidents, and mitigate risks.

| **Goal 1.5** | **Ensure that stakeholders are empowered to provide regular, purposeful input to District technology planning** |
|---|---|
| **Action Step 1.5.1** | WCSD will continue and strengthen the Technology Advisory Group (TAG) as a representative body of stakeholders providing input and recommendations related to District technology decisions. |
| **Action Step 1.5.2** | The District Strategic Technology Plan will be reviewed annually in a process of stakeholder consultation overseen by the Technology Advisory Group. |

Stakeholder engagement is critical to establishing technology priorities, identifying needs related to technology, ensuring the needs of technology users are met, and remaining current with future priorities and needs. A Technology Advisory Group (TAG) will oversee stakeholder engagement and annual revisions to the District Strategic Technology Plan. This group will include stakeholders representing staff and the community, and will seek regular and meaningful stakeholder input, study the impact of adopted and future technologies, identify District needs related to technology, and identify needs for future District technology planning, stakeholder consultation, and stakeholder communication.

# 2. Learning and Teaching

Preparing all students to live, learn, communicate, and collaborate in a digital, 21st Century world requires learning with, and teaching through technology. By providing regular access to student-centered technologies, WCSD will support learners to become proficient, responsible digital citizens[3] capable of using technology for a wide range of applications and purposes.

WCSD stakeholders want technology to be a regular, meaningful component of learning and teaching. A survey of WCSD families and staff conducted in January 2020 found that 75.7% of respondents stated that technology in the classroom is "essential."[4] The same survey found that 80.6% of respondents felt technology skills are "very" or "extremely" important for students to be ready for college or a career.[5] Among students, participants in a series of focus groups conducted in February and March, 2020, students felt that classroom technology "made learning more fun and engaging," and offered several benefits to learning, including "prompt feedback, options for self-paced learning, and collaboration with teachers and other students."[6]

Through this Strategic Technology Plan, utilizing available technologies, students will demonstrate ownership of learning to enhance their engagement with content and curriculum. Students will learn through their use of technology in meaningful ways, not merely through direct teaching of discrete skills. Digital curriculum resources, supported by engaging instructional strategies, will be available to all students and staff. All teachers will be provided with increased opportunities to engage students with technology through feedback, options for self-paced learning, and collaborative instructional strategies.

## Goals

| **Goal 2.1** | **All students will have regular, meaningful, opportunities to engage with content through student-centered technologies, integrated within regular instruction** |
|---|---|
| **Action Step 2.1.1** | Instruction will regularly integrate the technology components of all Nevada Academic Content Standards, including *Nevada Academic Content Standards for Computer Science and Integrated Technology*. Students will strengthen technology skills organically through authentic experiences with technology. Lesson planning will regularly include student use and choice of technology and 21st Century skills. |
| **Action Step 2.1.2** | Essential instructional resources for daily student learning will be shared digitally through Teams to empower distance learning for students unable to be physically present in classrooms. |
| **Action Step 2.1.3** | A student technology skills inventory will assist teachers in identifying areas of need for students. |

[3] Digital citizenship goals are outlined in the Safety and Security section of this plan.
[4] Parent / teacher tech survey, at Appendix xx.
[5] Parent / teacher tech survey.
[6] Student focus groups report. At Appendix xx.

| Goal 2.2 | **Students and teachers will have equitable and regular access to an NVACS-aligned digital curriculum through which they may access and use quality instructional materials, including units and lesson-building resources, and interdisciplinary resources where appropriate. This curriculum fosters the use of modern technologies, and the development of 21st Century Competencies** |
|---|---|
| **Action Step 2.2.1** | A comprehensive set of K-12 *Digital Curriculum Notebooks*, containing high-quality, vetted, NVACS-aligned instructional materials and resources will be available to staff through Teams. |
| **Action Step 2.2.2** | *Digital Curriculum Notebooks* will facilitate the instructional integration of essential instructional strategies for key District learning priorities, including Social Emotional Learning, Culturally Responsive Practices, 21st Century Learning, English Language Development, Family-School Partnerships, Gifted and Talented Education, Universal Design for Learning, and grade-appropriate technology skills. |
| **Action Step 2.2.3** | Adoptions of core curriculum materials will include digital materials able to be fully integrated into the *Digital Curriculum Notebooks* and accessible to students in classrooms and Distance Learning settings. |

| Goal 2.3 | **A comprehensive, functional, and accessible set of digital learning tools will empower meaningful student learning** |
|---|---|
| **Action Step 2.3.1** | A core suite of District-owned, supported, and integrated digital tools for collaboration and productivity will provide students and staff with a single District-wide learning platform. |
| **Action Step 2.3.2** | A comprehensive list of safe, secure, and FERPA, CIPA, and COPPA compliant digital learning tools will provide digital learning functionality to meet learning and teaching needs. A process for submitting and approving these tools will be accessible to staff. |
| **Action Step 2.3.3** | Technologies and digital tools acquired will meet the needs of all students, including those with special needs. To the maximum extent possible, the core suite of digital learning tools will meet the needs of all students, including for accessibility and assistive purposes. Assistive technologies will be acquired for specific needs that cannot be met through core tools. |
| **Action Step 2.3.4** | Emerging technologies of potential value to instructional programs will be identified, vetted for NVACS and instructional alignment, and implemented in a timely manner. |

# 3. Professional Learning and Training

Achieving digital learning outcomes for students requires comprehensive professional learning support for teachers. Ensuring teachers are well prepared to teach and facilitate learning through technology requires a thoughtful, system-wide approach to technology professional learning.

Consistent integration of technology in instruction helps students develop technology skills, digital citizenship, and 21st Century Competencies. However, through a series of focus groups conducted in February and March, 2020, students reported that technology use in WCSD classrooms varies significantly from classroom to classroom.[7] Students reported wanting student-owned cellphones to be accessible for certain learning opportunities, especially for research and formative assessments.[8] Further, classroom practices around technology use, along with consequences for misuse, have been inconsistent across the District. Establishing consistent District-wide understanding that student and staff technology use across all content areas and grade levels is important to student success.

The goals below establish the necessary professional learning and training needed to support digital learning and teaching. Importantly, meaningful professional learning for staff also requires standardization of policies and practices around students' use of technology for learning.

## Goals

| **Goal 3.1** | **All staff will have the necessary professional learning available at the point of need to support online, blended, and face-to-face learning environments** |
|---|---|
| **Action Step 3.1.1** | Differentiated formal and informal professional learning opportunities will be available to increase their implementation of best practices for teaching in online and blended classroom environments, including the 21st Century Educator Badge program. |
| **Action Step 3.1.2** | Online resources, such as videos and guides, will be available to support best practices in the use of core technology tools, including Office 365 and Teams, and approved digital learning tools to advance student learning. |
| **Action Step 3.1.3** | Training and online resources will be available to support the use and personalization of Digital Curriculum Notebooks, and the use of Teams for providing students with 24/7 access to learning materials. |
| **Action Step 3.1.4** | Facilitated Teacher Communities (in Teams) will foster professional learning communities and collaboration among educators centered on meaningful technology use and online and blended practices. |

| **Goal 3.2** | **Professional learning opportunities will support direct student use of technology, including personal devices, and enhance student and staff collaboration through technology** |
|---|---|
| **Action Step 3.2.1** | All teacher professional learning opportunities will consider appropriate student use of technology and identify strategies to empower students to use technology themselves. |
| **Action Step 3.2.2** | Professional learning opportunities will, whenever possible, support classroom use of digital technologies, including the use of Teams for providing resources |

[7] Student focus group report, at Appendix xx.
[8] Student focus group report.

| | |
|---|---|
| | and for collaborative learning. |

| **Goal 3.3** | **Support around classroom policies and procedures will empower appropriate student-centered use of technology that meaningfully engages students with content** |
|---|---|
| **Action Step 3.3.1** | Revise and establish policies and regulations to support consistent practices around student use of technology to support learning. |
| **Action Step 3.3.2** | Standardize expectations for students' access to and use of personal technologies, such as cellphones, tablets, and laptops. |
| **Action Step 3.3.3** | Provide staff with clear guidance on supporting students' appropriate and responsible use of technologies, including personal technologies, to support and enhance student ownership of learning |

# 4. Distance Learning

District must have an option for families to receive high quality standards-based instruction without coming into schools. Platforms such as our NorthStar Academy, Edgenuity, and On-line Curriculum Planning Guides meet this requirement.

a. Instruction must be supported daily by qualified certified teachers.

b. Students must have access to devices and the internet.

c. Teachers must receive ongoing professional learning support.

d. Requirements of specialized learning (e.g. IEP compliance) must be met.

e. Students eligible for Free/Reduced Priced Lunch must have access to food.

## Goals

| **Goal 4.1** | **Support the technology needs of all students and staff when utilizing distance learning** |
|---|---|
| **Action Step 4.1.1** | Establish a reliable data base of current student devices that includes individual school inventories of devices, students access to home devices and ongoing plan to meet individual student needs. |
| **Action Step 5.1.2** | Research and implement additional internet service for high need students who do not have any internet service in their resources in their residence. |

# 5. Devices and Hardware

Technology used by students and staff should be available when and where necessary, and functional to meet the needs of users. WCSD students and staff have expressed the need for improvement in each of these areas. In a series of focus groups conducted in February and March, 2020, students reported frustration with slow computers in many locations. For instance, one student noted that, "In STEM classes, we have amazing computers that run quickly, but in others we have slow laptops that take forever to load. A lot of technology issues slow down learning."[9] From student focus groups: Slow computers are frustrating.

Similarly, a 2020 survey of teachers, administrators, and education support professionals found that aging technology is a concern for staff. When asked about the top barriers to the effective use of technology at their schools, respondents reported "Devices and technology for students are outdated or not functional," as the most frequent response.

These concerns can only be fully addressed through a District-wide technology refresh program. Unfortunately, WCSD has experienced a consistent lack of funding for a centralized refresh cycle for student and staff technologies, including student devices, teacher computers, and digital displays. This has resulted in schools acquiring technology on a school-by-school basis with limited funds identified at sites. Funding inequities have caused disparities in technology access across schools. It has also resulted in schools continuing to use technology that is old, obsolete, and out-of-support, creating security and usability concerns. For instance, unsupported technology often is unable to run District standard applications and digital tools. Aging equipment also places a significant support burden on school staff and IT technicians.

An important strategy to deploy and effectively support technology devices equitably and sustainably in large organizations is standardization, which would allow the Office of Information Technology to utilize limited support resources more efficiently. At the same time, device choices should meet the learning and teaching needs of students and teachers, along with the needs of administrative staff.

The goals below move WCSD toward a more equitable, sustainable means of providing technology for digital learning.

## Goals

| **Goal 5.1** | **Support the technology needs of all students and staff by moving toward a centralized device refresh program** |
|---|---|
| **Action Step 5.1.1** | Establish a four-year District-wide device refresh schedule for all students and staff, based on classroom technology standards, to increase compatibility, reliability, functionality, and productivity of devices, and ensure out-of-support devices and equipment are efficiently removed from service and replaced. |
| **Action Step 5.1.2** | Implement a District-wide centralized program in which standard classroom |

[9] Student technology survey.

| | |
|---|---|
| | technology equipment is refreshed according to an established schedule. |
| **Action Step 5.1.3** | Supplement the District-wide device refresh by seeking a range of funding opportunities to acquire technologies for specialized purposes and emerging technologies. |

| **Goal 5.2** | **Improve functionality and support for WCSD technologies through the continuation and expansion of standardized device acquisition, management, and support** |
|---|---|
| **Action Step 5.2.1** | Establish and regularly update a list of use cases for WCSD devices—including computers, displays, printers, copy machines, scanners, projectors, and document cameras—compatible with District standard operating systems, management systems, and software, applications, and approved digital tools. Technologies acquired will met the needs of all students, including students with special needs. To the extent possible, standard technologies will meet the needs of special needs students, minimizing the acquisition of specialized technologies. |
| **Action Step 5.2.2** | Establish and maintain a standard list of District operating systems and associated software to standardize on as few platforms as possible to maximize efficiency and minimize support costs. |
| **Action Step 5.2.3** | Maintain a modern device catalog to ensure that all devices purchased in WCSD meet necessary standards for students and staff, meet established use cases, and are compatible with standard operating systems. Case-by-case exceptions will be rare, based on unmet use cases. |
| **Action Step 5.2.5** | Establish a process by which devices at end-of-support or too old to update will be removed expeditiously from District service. |

| **Goal 5.3** | **Centralized management of all WCSD devices will support schools digital learning and teaching in schools through provision of core and approved digital tools** |
|---|---|
| **Action Step 5.3.1** | Continue centrally supported device management systems for student and staff Windows and iOS devices to push applications and provision, configure, manage, and update devices via central consoles. Management systems will allow for standard imaging, image maintenance, application deployment, patch management, remote control, and troubleshooting. |
| **Action Step 5.3.2** | Establish and update twice each year of a central inventory system aligned to District needs that facilitates device tracking by schools and departments, and consolidates the purposes of inventories for IT devices, purchases, schools, and departments. Inventories are a shared responsibility between each school and the IT department. |

| **Goal 5.4** | **Classroom technology standards will outline, by grade bands, desired technologies for WCSD classrooms to guide technology purchasing and identify criteria for equitable student and staff technology access** |
|---|---|
| **Action Step 5.4.1** | Through a process of stakeholder input, WCSD will adopt minimum technology standards for classrooms, including student devices, staff devices, digital displays, and other devices. |

# 6. 1:1 Schools

Washoe County School District defines 1:1 schools as "whole-school technology-empowered learning and teaching programs in which every student and instructional staff member has a device issued to them for their own use 24/7." WCSD currently supports five 1:1 schools. Traner Middle School piloted WCSD's first 1:1 program, supported by the *Nevada Ready 21* program, in the 2018-19 school year. As part of the grant requirements, WCSD conducted thorough evaluation of this pilot (see Appendix D), which informed best practices in three new schools (Poulakidas Elementary School, Desert Skies Middle School, and Sky Ranch Middle School) which opened as 1:1 schools in 2019-20. Vaughn Middle School is WCSD's fifth 1:1 school, utilizing technology acquired and sustained through grant funding over the course of several years. Marce Herz Middle School will open as WCSD's sixth 1:1 school in 2020-21.

The evaluation report for Traner's program demonstrated several successes and implementation barriers.[10] For instance, Traner students experienced lower absenteeism rates, along with student reports of an increase in student respect and a decrease in bullying compared to the previous school year. WCSD Climate Survey data also demonstrated an improvement in student engagement. Implementation barriers included unfamiliarity with the technology, some inappropriate uses of technology, and unclear guidelines for technology use.

Despite barriers, the 1:1 program at Traner was received favorably. A subsequent series of student focus groups, conducted in 2020, found that 96% of high school students were supportive of one-to-one initiatives where they would be issued a laptop for their own use.[11] For instance, "Students thought devices would help them stay organized, make their homework assignments easier to monitor, and help students who did not have access to technology at home." Concerns expressed were largely logistical and procedural, including fear of loss or damage, other family members using the device, forgetting the device at home, or fear of overusing the computer for non-academic purposes.

The goals below outline a plan to sustain WCSD's existing 1:1 schools as educational environments that have identified clear student outcomes related to technology use, and expand opportunities for additional schools to implement 1:1 programs.

## Goals

| **Goal 6.1** | **Continue currently operating 1:1 programs, ensuring sustainable resources to provide the necessary supports** |
|---|---|
| **Action Step 6.1.1** | Sustain devices and technology at existing 21st Century middle schools according to an established refresh schedule, including an ongoing 10% buffer stock. |
| **Action Step 6.1.2** | Provide insurance for devices to ensure 1:1 schools can appropriately sustain technology inventories. |
| **Action Step 6.1.3** | Ensure a robust inventory system, Destiny Resource Manager, enables schools to effectively and efficiently track devices checked out to students. |

[10] Traner 1:1 Evaluation
[11] Student focus group report

| Goal 6.2 | Learning and teaching in 1:1 schools supports the needs of all students |
|---|---|
| **Action Step 6.2.1** | Ensure students have the required skills to learn in a 1:1 environment by ensuring regular Digital Citizenship education and the Nevada Integrated Technology and Computer Science Standards are regularly and consistently embedded in learning and teaching and in professional learning and PLCs. |
| **Action Step 6.2.2** | Provide supports for parents with students in 1:1 schools, including updated resources and learning opportunities relevant to technology-enabled learning, such as through Parent University. |
| **Action Step 6.2.3** | Ensure families have resources for home Internet connectivity, including support for signing up for broadband service, and hotspots for checkout to families in need. |

| Goal 6.3 | Continue to meet the unique needs of all existing 1:1 schools through a system of supports for current and new 1:1 schools |
|---|---|
| **Action Step 6.3.1** | Continue to support a full time 1:1 Technician will serve the basic technology needs at each 1:1 school. |
| **Action Step 6.3.2** | Provide a dedicated certified 21st Century Coach at each 1:1 school to coordinate the logistics of 1:1 technologies, and provide learning and teaching support for instructional staff. |
| **Action Step 6.3.3** | A dedicated 1:1 schools coordinator in the 21st Century Learning Department will coordinate the unique needs of 1:1 schools and standardize supports necessary to sustain viable 1:1 programs, including standard policies and practices across schools. |

| Goal 6.3 | Continue studying the efficacy of 1:1 schools |
|---|---|
| **Action Step 6.3.1** | Evaluate 1:1 school implementations annually to measure progress and identify benefits and challenges of this model in WCSD, including in comparison to national research and best practices. Continue utilizing the WCSD climate survey, focus groups, and other appropriate measures. |
| **Action Step 6.3.2** | Additional technologies – monitors, screencasting capacity, charging alternatives |

# 7. Technology Support

In a 2020 survey, the most commonly reported barriers to using technology by teachers and administrators, other than access to sufficient technology, were that "Devices and technology for students are outdated or not functional," "My own office or classroom computer or laptop is outdated or not functional, " and that there are "Insufficient support staff on-site or in the district to help troubleshoot technology issues."[12] The same survey found that "Just over 40% of school staff reported that their on-site technology support was completely or mostly adequate for their schools' needs."[13] It appears clear that support resources for technology in WCSD are inadequate to meet the increasing demand and to provide adequate, timely resolution of technology issues.

Since 2010, the number of computer devices of all types in WCSD has quadrupled, from around 18,000 to over 68,000. While many of these devices are old, out-of-date, or unsupported, the technical support resources provided by the District have remained largely unchanged. Lack of resources and older devices frustrate both instructional staff, who seek to support student technology needs through meaningful learning and teaching, and support staff, who feel they cannot adequately perform their function of ensuring technology is operational for students.

The goals presented here outline improvements in the existing inadequate technology support structure. Centered on information technology service management (ITSM) principles, this approach differs from the complementary priorities of systems and network management presented in other sections of this plan, by focusing directly on the needs of staff and students.

## Goals

| **Goal 7.1** | **Increase capacity to provide timely, professional technical support** |
|---|---|
| **Action Step 7.1.1** | Continue to use best practices, such as the Information Technology Infrastructure Library (ITIL), as processes for effectively and efficiently addressing user needs. |
| **Action Step 7.1.2** | Evolve and expand the capacity of the existing service management ticketing system to track and appropriately route service requests.<br>• Increase IT service desk capacity to ensure that 90% of service requests are entered on the first user contact.<br>• Establish an online service desk with live troubleshooting capacity to address user requests immediately.<br>• Expand the ability for users to enter their own service tickets through an online portal. |
| **Action Step 7.1.3** | Through the Technology Advisory Group (TAG), establish and communicate clear and appropriate service levels for service desk and technical support to inform staffing and resource levels. |
| **Action Step 7.1.4** | Provide regular, dedicated on-site technical support for all schools.<br>• Revise the role of the Educational Technology Specialist (ETS) position to better meet the technology support needs of schools, including the capacity to solve increased and more complex issues.<br>• Expand ETS positions to serve each elementary, middle, and high |

[12] Staff tech survey.
[13] Staff tech survey.

| | |
|---|---|
| | schools with full-time dedicated support. |
| **Action Step 7.1.5** | Establish a cadre of appropriately trained 21st Century teacher leaders at each site to oversee technology strategy and technical support needs at each site. |

| **Goal 7.2** | **WCSD students and staff will have enough functional devices to meet their educational and business needs** |
|---|---|
| **Action Step 7.2.1** | As part of a District-wide device refresh program, ensure that devices are up to date with updates and application deployments, and can be replaced within a single business day when needed. |
| **Action Step 7.2.2** | Complete the District-wide deployment of device management systems, including a single Mobile Device Management (MDM) solution for all mobile devices. |
| **Action Step 7.2.3** | As part of a District-wide device refresh program, centralize the acquisition, allocation, distribution, and deployment of District devices for all schools and departments. |

| **Goal 7.3** | **Empower all students and staff to resolve technology issues at the point of need** |
|---|---|
| **Action Step 7.3.1** | Establish a course list and schedule of professional learning offerings focused on increasing staff capacity to resolve technology issues. Provide schools with opportunities to participate in technical training, such as basic troubleshooting techniques, offered by IT and site-based technical support personnel. |
| **Action Step 7.3.2** | Provide a comprehensive set of technical resources to staff to ensure ready access to information about solutions to common technology problems. These resources include:<br>• an updated list of Frequently Asked Questions (FAQs) addressing common technology issues,<br>• user-focused self-help documents for common technology issues that employees can readily fix on their own,<br>• guidelines for supported District technologies, focused on assisting users to address initial troubleshooting issues, and to quickly identify the WCSD department responsible for support escalations. |
| **Action Step 7.3.3** | Create a user-accessible, crowd-sourced solutions hub for technology issues experienced and solved by users. |
| **Action Step 7.3.4** | At each site, establish procedures for addressing site-specific technology issues, including:<br>• site inventories and locations of devices,<br>• considerations for specialized technologies used at each site, and<br>• logs of site-specific technology issues and known fixes. |

| **Goal 7.4** | **Increase the effectiveness of IT supports provided by students and staff at sites and by IT technicians** |
|---|---|
| **Action Step 7.4.1** | Provide a comprehensive training curriculum for all staff and students with responsibility for supporting WCSD technologies. |
| **Action Step 7.4.2** | Establish procedural guidelines for all staff and students with responsibility for |

| | |
|---|---|
| | supporting WCSD technologies. |
| **Action Step 7.4.3** | Ensure that IT staff and all staff and students with responsibility for supporting WCSD technologies have regular, dedicated time and resources within the contract day to participate in technical training, exploration of relevant emerging technologies, and collaboration with others providing similar supports. |

# 8. Critical Business Systems

WCSD's critical business systems ensure that educational and business goals can be met through a suite of systems that are appropriately integrated and interoperable. The District uses a variety of administrative software applications, including vendor-provided and supported solutions and a variety of District-developed and maintained solutions. Important systems include:

- *BusinessPLUS*, the District's ERP (Enterprise Resource Planning) system,
- *Infinite Campus*, our Student Information System (SIS),
- *Blue Bear SchoolBooks*, a bookkeeping program used to track the collection, disbursement and management of Student Activity Fund accounts at each school site,
- *OnBase*, a document management system that is the District's legal repository for Special Education and other types of student records,
- *SearchSoft*, which manages job postings and job applications for Human Resources,
- *MyPGS*, for employee performance evaluations and rubrics, scheduling and tracking of professional development courses,
- *Versatrans*, a student transportation technology suite,
- *WebSMARTT*, for Nutrition Services management,
- *Rocket Scan*, which manages Free and Reduced Meal applications,
- *MySchoolBucks*, which manages online payments for school meals,
- BIG, the Business Information Gateway, which serves as WCSD's Data Warehouse and provides reporting on academic data online such as graduation rates, student demographics, student performance measures, and social and emotional learning skills,
- *Online Interactive Budget*, for transparent community access to WCSD budget information,
- *Online Checkbook*, for transparent community access to vendor payments and payroll information,
- *Bid Online*, which provides a venue for appropriately soliciting vendor services, and
- *Contract Review*, which provides a workflow and information for teachers and the community on District-approved educational applications and digital tools.

District staffing levels are lean and do not allow enough personnel to be released from their daily responsibilities for the due diligence warranted in an organization of our size and complexity. For instance, planning for the continuity of business operations during an emergency has not been adequately addressed. Consequently, IT is required to make assumptions as to the desired state of core business systems without sufficient input from application owners and District leadership.

The positive side of our current systems is that they are largely cost effective and staff is very familiar with the processes already in place. District personnel make good use of limited resources and manage to get the basic job done with a variety of software applications, many of which would be characterized as legacy systems. IT has successfully developed some homegrown applications and has staff that are able to capture or connect to data that may exist in disparate systems.

However, many processes seem designed to meet the requirements of the system rather than the needs of the District's users. It is important and often mandatory to undertake and complete these processes but ideally they should not distract users from accomplishing their primary functions. Users often report

frustration with inefficiencies in some systems, such as the number of screens and menus required to complete tasks.

The goals outlined here establish how WCSD can move toward more robust, sustainable, operation of critical business systems to support efficient District operations.

## Goals

| **Goal 8.1** | **Establish an integrated, interoperable infrastructure of finance, human resources, and business operations systems to best meet the District's evolving needs** |
|---|---|
| **Action Step 8.1.1** | Conduct a comprehensive, detailed needs assessment, cost-benefit analysis, and process engineering project for the District's Enterprise Resource Planning (ERP) and other business systems in Finance, Human Resources, and Central Operations. |
| **Action Step 8.1.2** | Continue moving toward and sustaining cloud hosting for all critical business systems to best ensure availability, functionality, and accessibility. |
| **Action Step 8.1.3** | Ensure staffing levels and resources in operational units and IT are appropriate to adequately support systems and defined service levels. As systems are updated, enhanced, and replaced, and as new programs are implemented, ensure staffing and resources are allocated appropriately. |

| **Goal 8.2** | **Continue incremental improvements in critical business systems to address areas of need** |
|---|---|
| **Action Step 8.2.1** | Conduct mapping of manual and electronic business processes to identify areas to maximize efficiency and reduce burdens on school and department administrative personnel. |
| **Action Step 8.2.2** | Continue to develop improved reporting capability and dashboards to support timely decision making for administrative functions. |
| **Action Step 8.2.3** | Explore and develop automation of routine and widely used manual business processes to minimize the use of workarounds, such as spreadsheets and paper processes, to accomplish day-to-day tasks. |

| **Goal 8.3** | **In conjunction with the District Business Continuity / Disaster Recovery planning process, define and establish clear continuity expectations and service levels for all business processes, systems, and operations** |
|---|---|
| **Action Step 8.3.1** | Assign business owners for all critical business systems, with clearly defined and documented roles and functions. |
| **Action Step 8.3.2** | Define and document clearly established and agreed upon service levels for all critical business systems. |
| **Action Step 8.3.3** | Support District needs for data use to improve business and educational outcomes through business intelligence analysis and reporting. |
| **Action Step 8.3.4** | Support effective monitoring and decision-making through continued development of the District's Data Warehouse, and expand data visualization capacity, such as through IT dashboards. |

# 9. Information Technology Infrastructure and Operations

WCSD operates one of the largest computer networks in Northern Nevada, serving over 72,000 users. Learning and teaching with technology, and the continued operation of critical business systems depend on robust systems support, reliable information systems, widespread Internet connectivity, IT infrastructure, and responsive technical support. Meeting the rapidly changing technology needs of the District requires ongoing support, routine maintenance, regular system evaluations, and adaptability to new functions and user requirements.

The goals below support the availability and continuity of IT operations to ensure that end user experiences meet expectations.

## Goals

| **Goal 9.1** | **Maintain support for a comprehensive education architecture to provide access and information needed by users** |
|---|---|
| **Action Step 9.1.1** | Maintain and continue to support and regularly update core business systems, such as the Student Information System (SIS), Enterprise Resource Planning (ERP) system, Human Resources management System (HRMS), Special Education, Parent Notification, Data Warehouse, Website Content Management, Security, Communication and Collaboration, and Identity Management systems. |
| **Action Step 9.1.2** | Ensure significant information technology projects are effectively incorporated into a comprehensive education architecture through thorough planning and monitoring using effective project management principles, and appropriately resourced. |
| **Action Step 9.1.3** | Ensure that all IT staff are adequately trained to support all District systems, and that this training reflects the rapidly evolving nature of District technologies. |
| **Action Step 9.1.4** | Establish sustainable ongoing resources for existing programs and all new programs to maintain necessary business continuity and service levels, technical redundancy where necessary and documentation processes to ensure appropriate failover and succession planning. |

| **Goal 9.2** | **Maintain network capacity needs for LAN, WAN, and Internet connectivity to provide a robust, equitable experience district-wide, and monitor and expand capacity to anticipate and meet future needs** |
|---|---|
| **Action Step 9.2.1** | Maintain a nine-year Infrastructure Refresh Plan for all network services, moving toward a five-year cycle as possible to ensure a high level of availability and functionality as designed and the provision of connectivity for supported platforms to meet the needs of students and staff. As new schools are built, increase refresh funding to maintain the refresh cycle. |
| **Action Step 9.2.2** | All District sites will have up-to-date network infrastructure, including 1:1-level wireless connectivity to support 21st Century schools. Established Internet connectivity standards will ensure adequate maintenance of up-to-date wired and wireless networks to meet or exceed bandwidth capacity per student requirements as established and updated by the FCC. |
| **Action Step 9.2.3** | Maintain published hardware standards for internal network, Local Area |

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|---|---|
| | Network (LAN), Wide Area Network (WAN), security cameras, Voice over Internet Protocol (VoIP), data storage, and wireless. Continuously measure and monitor wired and wireless networks to ensure connectivity for users and anticipate future resource needs. |

| **Goal 9.3** | **Increase site technology functionality, efficiency, management, usability, and reliability by maintaining and increasing cloud-based technology management and functionality** |
|---|---|
| **Action Step 9.3.1** | by converting all school labs from Active Directory/SCCM to Azure AD/Intune enrollment. |
| **Action Step 9.3.2** | Enroll all iOS devices into Intune for remote/cloud management. |
| **Action Step 9.3.3** | Provide added cloud-based resources, such as Windows Virtual Desktop, Cloud Print Solutions, and Media Streaming solutions. |

| **Goal 9.4** | **Increase user security and functionality for cloud services through Azure Modern User Management and Functionality** |
|---|---|
| **Action Step 9.4.1** | Expand user access to cloud-based security features through Multi-Factor Authentication and Self-Service Password Reset for all staff. |
| **Action Step 9.4.2** | Increase security practices around Identity and Authentication processes, such as by converting current device assigned policies in Group Policy and Intune to user assigned policies. |
| **Action Step 9.4.3** | Improve and expand single-sign on functionality for users through expanded use of our current SSO environment. |
| **Action Step 9.4.4** | Provide increased user access to software and applications by increasing the functionality of self-servicing applications for users. |
| **Action Step 9.4.5** | Increase the capacity for site support of technology, software, and applications by implementing role-based administration for technicians and school administrators. |

| **Goal 9.5** | **Establish clear physical security and safety procedures for all IT equipment locations at WCSD sites, ensuring access to equipment only as required** |
|---|---|
| **Action Step 9.5.1** | All IT equipment will be physically secured in conditions that conform to applicable building code and fire requirements to ensure appropriate data security and to reduce exposure to equipment damage and overheating. Restrict access to IT equipment rooms and cabinets only to authorized personnel, including through maintenance of camera systems in data centers. |
| **Action Step 9.5.2** | Reduce the potential for damage to IT equipment in equipment rooms at all sites by establishing clear protocols for restricting flammable, combustible, and other unapproved items and materials in IT equipment rooms, and providing adequate clearance and ventilation. |

| **Goal 9.6** | **Maintain the Voice over Internet Protocol (VoIP) platform as the standard** |
|---|---|

| | phone system for WCSD and complete installations at all legacy phone sites |
|---|---|
| **Action Step 9.6.1** | Convert remaining PBX schools and sites to the WCSD VoIP platform. |
| **Action Step 9.6.2** | Update phones and platform hardware/software as devices reach end of life, in alignment with Infrastructure refresh projects. Standardize on phone models designed to meet Classroom and Administrative functions (Lines/Features). |
| **Action Step 9.6.3** | Expand VoIP functionality, adding mobility features as feasible to allow users to continue using the WCSD phone system when outside the District network. |

| **Goal 9.7** | **Continuously research, innovate, test, and adopt technical solutions to improve the effectiveness and efficiency of enterprise IT systems.** |
|---|---|
| **Action Step 9.7.1** | Continue a process for reporting, tracking, and resolving problems and technical issues to improve system performance, efficiency, and effectiveness. |

# 10. Safety and Security

The safety and security of students and staff when using technology is paramount in the modern world. The nature and scale of security threats to school districts has increased substantially in recent years. Effectively securing District technology systems and resources requires a systematic approach focused on appropriately balancing the confidentiality, integrity, and availability of District data through an established process of risk management.

Overseen by the Technology Governance structure outlined in this Plan, two key components of safety and security serve to protect WCSD users and information systems. First is a robust information and cyber security program. This program is focused on reactive tactical security functions to protect the District from imminent threats, and comprehensive strategic security planning to ensure security procedures effectively anticipate and respond to the changing cybersecurity landscape.

A second component of effective safety and security is support for effective user-level security practices of staff and students to maximize the District's security posture. User education, such as a Digital Citizenship curriculum for students and resources and classes for staff and families, helps to elevate good security practices and cyber hygiene. Consideration of classroom management tools and monitoring of students' online activity may further protect students.

Ultimately, all District technologies and technology systems should be appropriately secured and monitored to protect District data and to prevent undesirable impacts on the District network.

## Goals

| **Goal 10.1** | **An Information and Cybersecurity Program will focus on tactical response to cybersecurity threats, strategic security planning, and user education to protect District users and technologies** |
|---|---|
| **Action Step 10.1.1** | A comprehensive Information and Cybersecurity Plan, revised annually, and overseen by the Security Governance Group, will outline and guide all District security functions and ensure appropriate risk management and mitigation efforts. |
| **Action Step 10.1.2** | A security Incident Response Plan and associated procedures will ensure systems and resources are in place to anticipate, manage, and recover from, report, and document technology-related security incidents. |
| **Action Step 10.1.3** | A Business Continuity / Disaster Recovery Plan, developed in concert with District departments, will minimize impact on critical District technology systems during an incident or disaster by establishing service levels for District services through a Business Impact Analysis, and identifying recovery mechanisms and procedures. |
| **Action Step 10.1.4** | Security audits will be regularly scheduled and conducted, with independent, external audits conducted every 18 months, and internal audits conducted every 12 months. |

| **Goal 10.2** | **Ensure students, staff, and families have the support to learn to act safely and appropriately when using technology, including when online** |
|---|---|
| **Action Step 10.2.1** | A comprehensive, up-to-date Digital Citizenship curriculum will provide students, teachers, and families with resources to learn to navigate the online |

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|---|---|
| | world, and ensure compliance with relevant legislation, such as the Children's Internet Protection Act (CIPA). |
| **Action Step 10.2.2** | A program of security education, including resources for students, teachers, and families will ensure that users of District technologies are knowledgeable about security risks and the actions they can take to reduce risk. |

| **Goal 10.3** | **Students and staff are protected by technology systems for identifying and managing inappropriate or concerning behaviors** |
|---|---|
| **Action Step 10.3.1** | An online monitoring solution will alert District staff to concerning online activity, including signs of cyberbullying, suicidal ideation, self-harm, violence, and drug use, while using District technologies. |
| **Action Step 10.3.2** | Classroom management software will be available for deployment as needed, including controls to assist teachers to effectively manage student use of classroom technologies. This solution will allow for live views of student screens on the teacher's computer, distribution of websites and teaching tools, temporarily locking student screens and keyboards, displaying the teacher's screen on all students screens, and reasonably limiting students' inappropriate use of devices. |

# 11. Sustainability

Sustaining technology initiatives is an expensive exercise. Yet, it is clear that our community firmly values the role of technology in education, and that up-to-date technology is critical for providing a variety of District services. In a 202[14] survey of administrators, teachers, education support professionals, families and community members, 67% of respondents reported feeling that, "technology in the classroom is essential [and] should be a funding priority for the District." Additionally, in answer to the question, "Among all the skills students need to be ready for college or a career, how important are technology skills[15]" 80.6% of respondents reported that these skills are "extremely" or "very" important. A further 15.6% responded that these skills are "moderately" important.[16]

Unfortunately, WCSD has largely relied on non-General Fund sources to support technology needs. In Fiscal Year 2018-19, for instance, of $6,767,155 expended on user technologies, only $504,551, or 7.5%, utilized the General Fund. The remaining $6,262,604 was made up primarily of bond funds (41%), and grant funds (38%), with the remainder utilizing Student Activity Funds (8%), Government Services Tax funds (4%), or other sources.

While these sources have provided important resources for schools, they are not sustainable sources of technology funding, and WCSD consequently has a decentralized model of technology acquisition. This leads to significant support concerns for IT, and creates significant inequities in technology access for students and staff.

The goals below outline a process by which WCSD can better sustain technologies for learning and teaching and for business operations, such that inequities are minimized, technologies are refreshed adequately, and students and staff have the technology they need.

## Goals

| **Goal 11.1** | **Direct funding for technology, whenever possible, toward establishing and sustaining District-wide refresh programs, such as for devices and IT infrastructure** |
|---|---|
| **Action Step 11.1.1** | Maintain clear, multi-year budgeting for a centralized device acquisition, distribution, and deployment (refresh) cycle to articulate District device and technology needs. |
| **Action Step 11.1.2** | Maintain clear multi-year budgeting for the District Infrastructure Refresh program, and seek to reduce equipment replacement cycle to match industry standards. |

| **Goal 11.2** | **Seek philanthropic partnerships to support learning and teaching with technology** |
|---|---|
| **Action Step 11.2.1** | Ensure that community partners have updated information on WCSD's technology needs to meet learning and teaching standards and expectations to effectively communicate needs. |

[14] Staff survey.

[16] Staff survey.

| | |
|---|---|
| **Action Step 11.2.2** | Work with community partners and the Education Alliance of Washoe County to establish an endowment program specifically targeting sustainable funding for student and teacher technology. |
| **Action Step 11.2.3** | Establish and maintain partnerships with community organizations seeking to support the technology needs of WCSD families and students, such as through device donation and refurbishment programs. |

| **Goal 11.3** | **To the extent possible, utilize grant funding to explore innovative and specialized technologies, rather than to fund refresh programs** |
|---|---|
| **Action Step 11.3.1** | Ensure that all grant funds sought by WCSD for technology support established device standards or innovative and specialized technologies with a clear, communicated purpose. |
| **Action Step 11.3.2** | Specialized programs funded and sustained through non-General Fund sources will include a plan for sustaining these programs. |
| **Action Step 11.3.3** | Emerging technology programs will articulate a clear plan to ensure the programs inform District-wide practice. The Technology Advisory Group (TAG) will monitor emerging technology programs to inform practices that may benefit the District as a whole. |

| **Goal 11.4** | **Maintain positive, focused partnerships to maximize efficiencies and identify future solutions** |
|---|---|
| **Action Step 11.4.1** | Continue to work with channel partners to ensure WCSD obtains competitive pricing for technologies and ensure appropriate vendor support. |
| **Action Step 11.4.2** | Regularly work with existing and potential vendors to identify, test, and pilot technology solutions that support Plan goals and have cost-saving and efficiency potential. |
| **Action Step 11.4.3** | Continue maximizing E-Rate reimbursements through careful planning and budgeting of technology purchases and refresh. |

# 12. Communication

Engaging regularly and meaningfully with stakeholders around goals and progress is critical to the success of this plan. WCSD has a robust system in place for direct communication with internal and external stakeholders in our community using a variety of digital communication tools, community partnerships, and via our large network of media partners. WCSD has a community input infrastructure and methodologies and will continue to adapt these in a manner that best complements the needs of this plan.

The goals below outline appropriate, reliable, ongoing two-way communication with the appropriate stakeholders.

## Goals

| **Goal 12.1** | **Maintain effective communications systems and strategies to meaningfully communicate with stakeholders around the goals and progress of the District Strategic Technology Plan** |
|---|---|
| **Action Step 12.1.1** | Utilize a variety of means, including the WCSD website, social media, and traditional media, to regularly share with external audiences the goals and progress of the District Strategic Technology Plan, including highlights and updates, FAQs related to the plan, and upcoming and ongoing opportunities for stakeholder input. |
| **Action Step 12.1.2** | Utilize a variety of internal communications channels to share the goals and progress of the District Strategic Plan with internal audiences. |

| **Goal 12.2** | **Regularly engage with stakeholder groups to gauge progress and inform continuous improvement processes** |
|---|---|
| **Action Step 12.2.1** | Through the WCSD Technology Advisory Group (TAG) establish a process of regular consultation and engagement with stakeholder groups—including students, teachers, families, administrators, department staff, and community members—centered on plan goals and progress. |
| **Action Step 12.2.2** | Establish a variety of formal feedback channels, focused on the needs of stakeholders, to allow for regular internal and external stakeholder input. |

| **Goal 12.3** | **Continue to provide, maintain, and expand access to communication tools, including via mobile devices** |
|---|---|
| **Action Step 12.3.1** | Continue to develop the capacity and functionality of the WCSD Mobile App and other options to best meet the needs of students and families. |

# Implementation Plan and Budget

# Continuous Improvement and Evaluation

# Glossary

# Appendix A – Stakeholder Groups

Thank you to the following stakeholder groups who contributed time, effort, and expertise to the development of this plan.

## WCSD Board of Trustees

Malena Raymond, President
Angela D. Taylor, Ph.D., Vice President
Andrew Caudill, Clerk
Katy Simon Holland
Scott Kelley
Ellen Minetto
Jacqueline Calvert

## Strategic Technology Planning Task Force

Mary Alber, Community Representative
Mark Anderson, Business Representative
Valerie Bayard de Volo, High School Assistant Principal
Robert Carson, Office of Business and Finance
Lalita Cole, Elementary School Teacher
Kaitlynn Cooper, High School Teacher
D'Lisa Crain, Department of Family School Partnerships
Laura Davidson, Department of Research and Program Evaluation
Mike Doering, Office of Strategies
Jamie Garaventa, Elementary School Teacher
Mike Gifford, Middle School Principal
Terra Graves, Department of 21st Century Learning
Rick Harris, Special Projects Administrator
Josh Hartzog, Department of Signature Academies and Career and Technical Education
Laurel Iinuma, Office of Information Technology
Christopher Keenan, High School Teacher
Marissa McClish, Office of Human Resources
Lisa McNeill, APTA Representative
Joseph Medulla, Office of Information Technology
Juan Palacios, Middle School Teacher
Laura Petersen, Middle School Teacher
Charles Rahn, Office of Communications and Community Engagement
Michelle Rutherford, High School Teacher
Jeff Sabo, Office of Information Technology
Brandy Scarnati, Higher Education Representative
Eric Scheetz, Business/Community Representative
Reid Schlesener, Department of Information Security
Dan Schreiber, Middle School Dean
Robert Sidford, Office of Information Technology
JT Stark, Office of Accountability

Rick Stevens, Business/Community Representative
Sean Whisler, Elementary School Principal
Shaquana Wilks, Parent Representative
Tiffany Young, Department of Equity and Diversity
Tami Zimmerman, Department of Capital Projects

## Strategic Technology Planning Work Groups

### Vision and Mission

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Lalita Cole
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Juan Palacios
Tiffany Young
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### Professional Learning and Training

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Mark Mathers, Chief Financial Officer
Tony McMillen, Director of Construction and Project Management
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Troy Parks, Lead Area Superintendent
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# Appendix B: Strategic Technology Plan Survey 2020: Report

## STRATEGIC TECHNOLOGY PLAN SURVEY 2020: REPORT OF FINDINGS

### Background

In SY 2019-20, WCSD began work to develop a Technology Strategic Plan to help ensure all students and staff have access to the technology and technology skills they need to be successful. To inform this plan, WCSD sought input from staff, families, and community members through an online survey about the barriers to using technology at home and in classrooms, and recommendations for improving student technology use in the future.

Of the 25,312 staff and families who received the survey directly, 2,731 families, staff, and community members completed the survey. Survey respondents were asked to indicate their role. Response rates for each role type were as follows:

- 10.8% overall (n = 2,731)
- 15.8% of staff (n = 1,689)
  - 1,138 Teacher/Certified
  - 145 Administrators
  - 308 Education Support Professionals
  - 98 Central Office Staff
- 8.9% of families (n = 1,267)
  - n = 53 families completed in Spanish
- n = 56 community members
- 242 school staff were also parents/guardians

A total of 51.3% of school staff worked at an elementary school, 17.2% worked at a middle school, and 24.2% worked at a high school. An additional 7.2% worked at another school configuration. One-third (31.1%) of staff respondents worked at a Title I School.

Nearly 40% (39.8%) of families had children in grades K-2, 37.2% in grades 3-5, 44.7% in grades 6-8, 38.3% in grades 9-12, and 6.8% in Other grades (pre-K or post-12th).

#### SURVEY METHOD

All district staff (N = 10,688) received an email from the Chief Information and Innovation Officer on January 21, 2020 inviting them to respond to the survey. One additional reminder was sent on February 6th, and the survey closed on February 12th. A random sample of 14,624 families comprising one-third of all district families with email addresses also received an email invitation and reminder to complete the survey via BlackBoard Connect during that same period. The technology committee opted to use a random sample of families to reduce survey burden and ConnectEd calls to families as three other district-sponsored surveys were in the field within the same two months. The survey was also available to the public via a link on the main WCSD home page and advertised via the Interim Superintendent weekly message.

# Results

## All Respondents (N = 2,731)

All respondents, including administrators, teachers, education support professionals, families, and community members, received four identical questions, before branching into role-specific questions. The first two questions asked about the importance of technology in the classroom (Figure 1) and the importance of technology skills for students' college and career readiness (Figure 2). The vast majority of respondents felt technology skills were extremely or very important to college and career readiness (80.6%), and 75.7% believed technology in the classroom was essential.

Figure 1. All survey respondents' attitudes towards the question "I feel technology in the classroom is..." (N = 2,715)

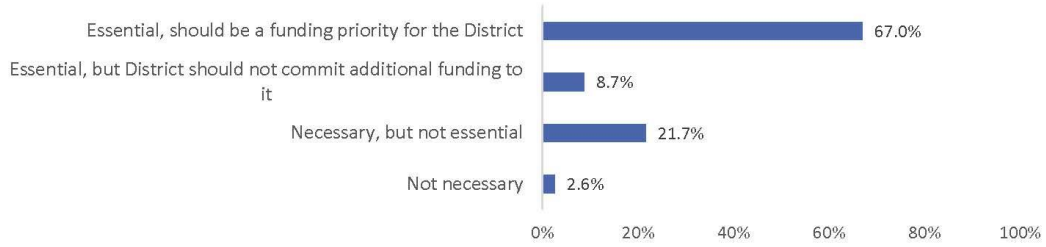
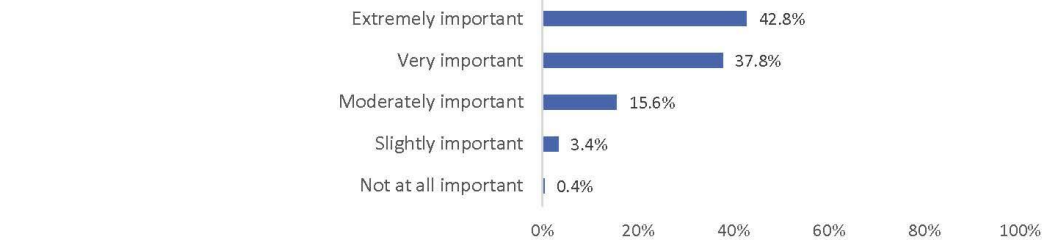



Figure 2: All survey respondents' attitudes towards the question "Among all the skills students need to be ready for college or a career, how important are technology skills?" (N = 2,724)



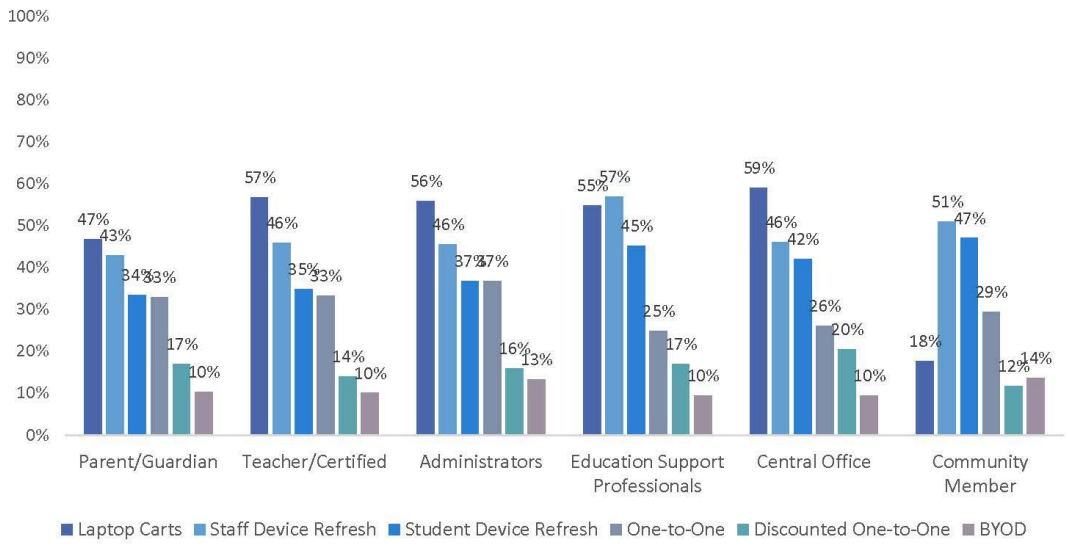
All survey respondents were also asked to respond to a series of proposals for future technology funding in the district. Table 1 reports the results of these questions. A total of 84.3% of respondents listed having more accessible laptop or iPad carts in their top three choices for technology funding, followed by refreshing staff devices (71.9%), and refreshing student devices (70.1%). Funding a Bring Your Own Device (BYOD) initiative was least supported, with nearly a third of respondents (29.8%) indicating they did not support that option at all.

Table 1.
Respondents' preferences for technology funding (N = 2,393).

| | 1= Most likely to support | 2 | 3 | 4 | 5 | 6 = Least likely to support | Do not support this option at all |
|---|---|---|---|---|---|---|---|
| All students having regular access to a device at school to use in the classroom ("More Accessible Laptop or iPad Carts"). | **52.1%** | 19.7% | 12.5% | 6.8% | 3.2% | 3.1% | 2.5% |
| Refreshing existing outdated computers, laptops, or tablets for staff ("Staff Device Refresh"). | **45.9%** | 14.9% | 11.0% | 7.5% | 6.6% | 8.0% | 6.1% |
| Refreshing existing outdated laptops, computers, or tablets for students ("Student Device Refresh"). | **36.1%** | 18.6% | 15.3% | 11.5% | 7.1% | 6.2% | 5.1% |
| All students receiving a district-issued laptop or tablet for use in the classroom and at home ("One-to-One"). | **32.1%** | 13.1% | 12.6% | 11.8% | 8.9% | 9.0% | 12.5% |
| All students receive a discounted laptop or tablet for use in the classroom and at home ("Discounted One-to-One"). | **15.9%** | 13.4% | 16.2% | 15.5% | 12.0% | 12.4% | 14.5% |
| All students being allowed to bring their own laptop or tablet to school for use in the classroom ("Bring Your Own Device"). | **10.6%** | 8.8% | 9.6% | 10.4% | 9.1% | 21.6% | 29.8% |

As Figure 3 indicates, these findings largely hold across role types, with families, teachers, administrators, and Central Office Staff all selecting laptop carts and staff and student device refreshes as their number one preferred use of spending for technology.

Figure 3. All survey respondents' top preference for technology funding, by role




All respondents were asked one final question about whether they had any additional comments about technology in WCSD. A total of 846 survey-takers (31% of all respondents) provided an open-ended comment. The following summary describes the primary themes that emerged from an analysis of these open-ended comments. Themes are listed in order of the frequency with which they appeared.

## Negative Comments about Technology in WCSD

1. Concerns about use of technology in school
    - Concerns about health of students having too much screen time/addiction (especially elementary students)
    - Students misuse technology in the classroom and are often distracted by it
    - Using/overusing technology harms instruction
    - Fears about students losing writing skills, social skills, organizational skills etc. if required to use too much technology
    - Students can easily access inappropriate content at school

2. Concerns about Bring Your Own Device or One-to-One Initiatives
    - District needs to better research how to roll out these initiatives effectively
    - Initiatives do or may enhance inequities between schools and students
    - Concerns about whether students are responsible enough to care for devices
    - Monitoring students' technology use at schools is/would be challenging for staff
3. Concerns about technology inequities across schools
    - Title I and new schools have access to better technology than non-Title I, older schools
    - Parent fundraising groups responsible for funding technology
4. Staff and student devices are very outdated
    - Staff report that their devices are very old and not effective for classroom use
    - Staff report that student devices are too slow or ineffective for classroom use
5. Frustration that many applications, devices, or software are blocked by IT/ district-endorsed products are not effective
    - Microsoft Teams/Office 365 is not an effective product
    - Google products were effective and staff are frustrated they are no longer supported
    - Apple products are not well supported
    - Many other applications are not supported by district
    - The approval process for applications is slow or not effective
6. Need more/faster IT support at schools
    - Insufficient IT support at schools
    - District IT support is not efficient or effective
7. Cost concerns about technology
    - Spending money on technology is not a good use of district funds given other budgetary needs

## Positive Comments about Technology in WCSD

1. Technology skills are important and should be better supported/funded by district
    - Students need strong instruction in technology to be college and career ready
    - It is critically important for students to have equitable access to technology
    - Students should receive a device from the district

## WCSD Staff Responses (N = 1,689)

Teachers, Administrators, and Education Support Professionals were asked to select the top three barriers to effective use of technology at their schools. Figure 4 below reports the results of this question. Teachers and administrators were most likely to report that devices for students were not functional (60.2%) or not available to them when needed (54.3%), while Education Support Professionals were most likely to report that their own staff device was outdated or not functional (54.7%).

An additional 97 school staff described additional barriers to using technology in their school or classroom through an open-ended comment section. Listed barriers included the following:

- Slow bandwidth/WiFi
- District barriers to using specific platforms or applications, including lengthy approval processes, and lack of support for certain products (e.g., Apple)
- Lack of responsiveness from IT for broken or non-functioning devices
- Managing discipline issues around technology
- Lack of devices for students and equitable devices across schools

Figure 4. Teachers/Administrators' and Education Support Professionals' top 3 reported barriers to using technology

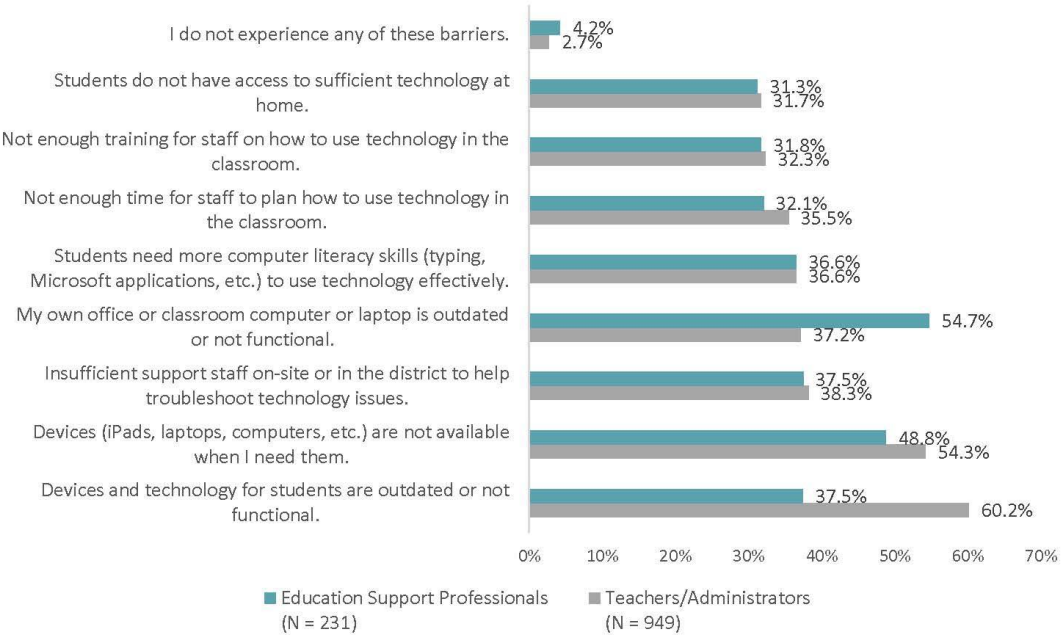
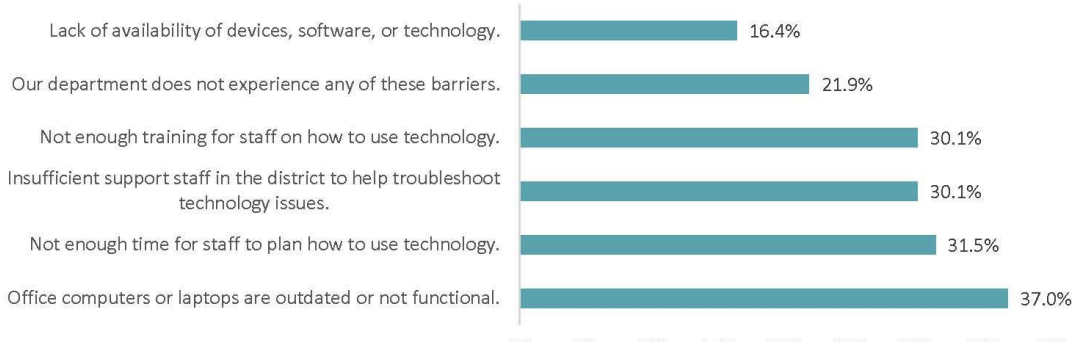


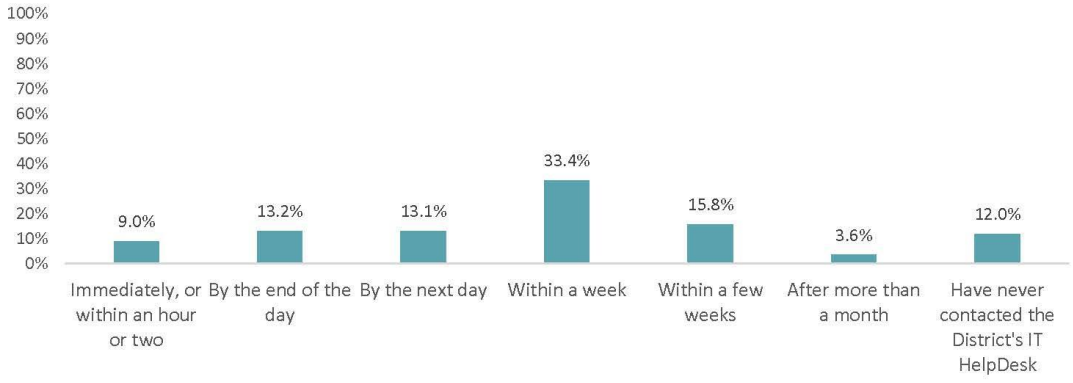
Figure 5 displays the results of parallel questions asked of Central Office staff about barriers to using technology. A total of 37% reported that their office computer or laptop was outdated or not functional. Additional barriers were provided in 11 open-ended comments and included frustrations with Microsoft Teams' functionality and slow internet.

Figure 5. Central Office Staff's top 3 reported barriers to using technology (N = 73)



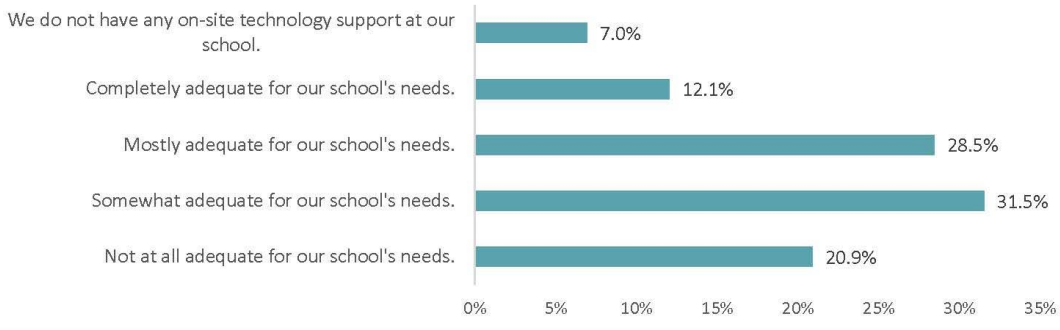

Teachers, Administrators, Education Support Professionals, and Central Office staff were asked how quickly they typically received support for a device or internet when they contacted the IT HelpDesk (Figure 6). The majority of staff reported that they received a response within a week.

Figure 6. Staff's perception of how quickly the IT HelpDesk responds when contacted (N = 1,260)



School Staff (excluding Central Office) responded about the adequacy of their on-site technology support (supported **not** provided by the IT Department; Figure 7). Just over 40% of school staff reported that their on-site technology support was completely or mostly adequate for their schools' needs.

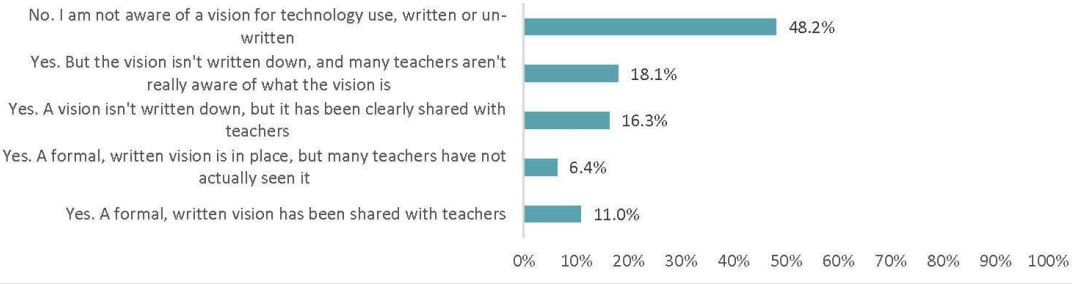
Figure 7. School staff's perception of the adequacy of their on-site technology support (N = 1,176)




***Additional Teacher and Administrator Results***

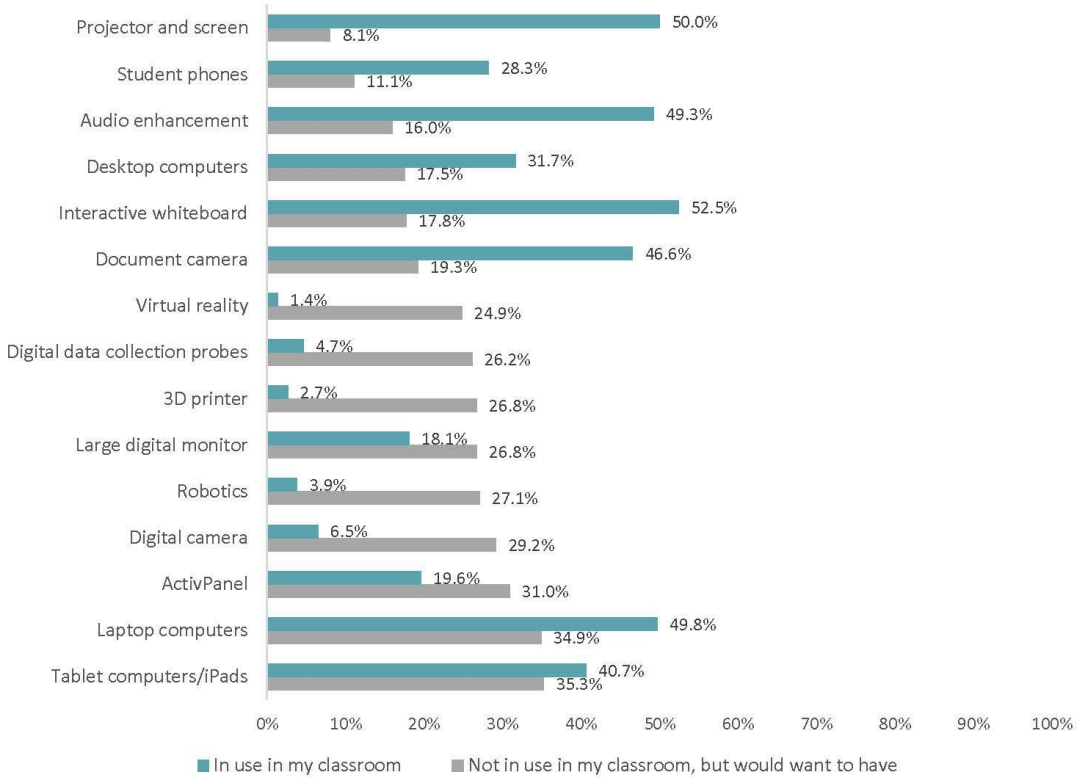
Teachers and administrators received several additional questions specific to their roles. First, they were asked whether their school had a vision for how technology should be used by students and teachers to improve teaching and learning in place (Figure 8). Nearly half of all respondents (48.2%) indicated that they did not have a vision for technology in place. Teachers were more likely to report not having a vision in place (50.6%) compared to administrators (28.2%).

Figure 8. Does your school have a vision for how technology should be used by students and teachers to improve teaching and learning? (N = 1,047)



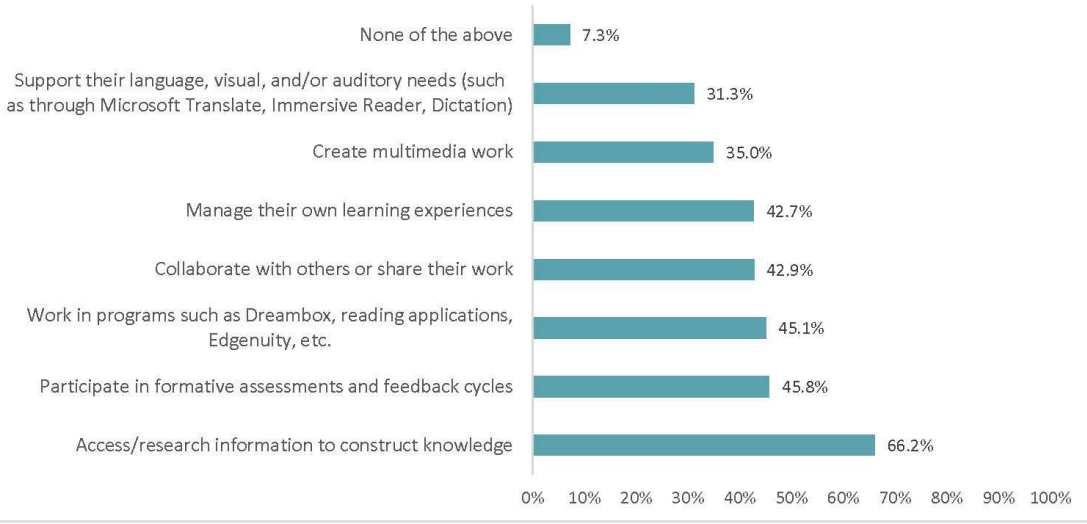
Teachers were presented a list of technologies and asked to indicate if they currently had them in their classroom, or if they would want them. Figure 9 below reports the results of these analyses. Teachers most wanted tablet computers/iPads, laptops, and ActivPanels in their classroom. Fifty-two teachers also left open-ended comments about technology they wanted in their classes. The majority of requests included more functional versions of the devices they do have, including their staff computer, student laptops, and ActivBoards/projectors.

Figure 9. Technology teachers have or want in their classroom (N = 856)




Teachers responded to a series of questions about how students use technology in their classroom (Figure 10). Two-thirds of teachers reported that their students used technology to access/research information for knowledge construction. Another 13.1% (n = 112) of teachers listed other ways they used technology. "Other" uses frequently included word processing and writing, digital textbooks, practice assessments, and various supplemental instructional applications.

Figure 10. How students use technology in teachers' classrooms (N = 854)




Teachers reported on a series of questions about how they used technology to drive instruction in their classrooms (Table 2). Teachers most frequently reported using technology to manage student data (83.9%), but the large majority (74.1%) reported the technology students had to use was not up-to-date.

Table 2. Percentage of teachers who agree with statements about their use of technology and whether they have the support for technology use in their classroom (N = 858).

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | **Total % Agree/ Strongly Agree** |
|---|---|---|---|---|---|---|
| I use technology to help me manage student data (e.g., using electronic gradebooks, Excel, BIG Data Warehouse, etc.) | 2.5% | 6.2% | 7.5% | 40.5% | 43.4% | **83.9%** |
| When designing my lessons, I usually think about whether technology could enhance my teaching or student learning. | 4.4% | 8.7% | 17.4% | 43.6% | 25.9% | **69.5%** |
| I regularly use technology to enhance learning in my classroom. | 4.1% | 12.0% | 14.9% | 42.1% | 26.9% | **69.0%** |
| I use technology (besides email) to collaborate with my colleagues. | 5.3% | 14.0% | 15.2% | 38.5% | 27.0% | **65.5%** |
| The technology my students use is up-to-date. | 25.8% | 32.3% | 16.0% | 20.1% | 5.7% | **25.9%** |

Administrators were asked a parallel set of questions about how many of their teachers used technology in various ways to support their instruction (Table 3). Administrators largely agreed with teachers' self-reported use of technology in the classroom, including that their teachers used technology most often to manage student data, and that the majority thought about how technology could enhance learning. Administrators also believed very few teachers had technology for student use that was up-to-date.

Table 3. Administrator attitudes about the proportion of teachers who are using technology in the classroom or have sufficient support for using technology in the classroom (N = 94)

| | None or Nearly None | Some | About Half | Most | All or Nearly All | **Total % Most/ Nearly All** |
|---|---|---|---|---|---|---|
| Use technology to help them manage student data (e.g., using electronic gradebooks, Excel, BIG Data Warehouse, etc.) | 5.3% | 6.4% | 11.7% | 31.9% | 44.7% | **76.6%** |
| Regularly think about whether technology could enhance their teaching or student learning. | 2.1% | 11.7% | 17.0% | 53.2% | 16.0% | **69.1%** |
| Regularly use technology to enhance learning in their classroom. | 2.2% | 16.3% | 17.4% | 47.8% | 16.3% | **64.1%** |
| Feel comfortable planning for class sessions that involve students using technology during instruction. | 2.1% | 14.9% | 25.5% | 44.7% | 12.8% | **57.4%** |
| Have sufficient technology support on-site or from the District to use technology well in their classroom. | 24.7% | 29.0% | 10.8% | 26.9% | 8.6% | **35.5%** |
| Have sufficient technology in their classroom to meet instructional needs. | 16.0% | 34.0% | 20.2% | 21.3% | 8.5% | **29.8%** |
| Have technology for student use that is up-to-date. | 18.1% | 43.6% | 16.0% | 11.7% | 10.6% | **22.3%** |

Finally, teachers and administrators responded to four identical questions about technology behaviors among students at their school (Table 4). Nearly 40% of teachers and administrators were unclear about the rules and policies around technology for students at their school, and less than half (46.3%) agreed that the behavior policies were enforced equally by staff across the school.

Overall, only 22.2% of teachers and administrators reported that they spent a lot of time dealing with students' misuse of technology. However, this varied substantially by school level and role. Roughly 43.1% of teachers in high school and 37.2% of teachers in middle school agreed that they spent a lot of time dealing with technology misuse, compared to just 7.3% of teachers in elementary school. Twenty percent of middle school administrators and 22.2% of high school administrators reported spending a lot of time dealing with student technology misuse, compared to just 2.2% of elementary administrators.

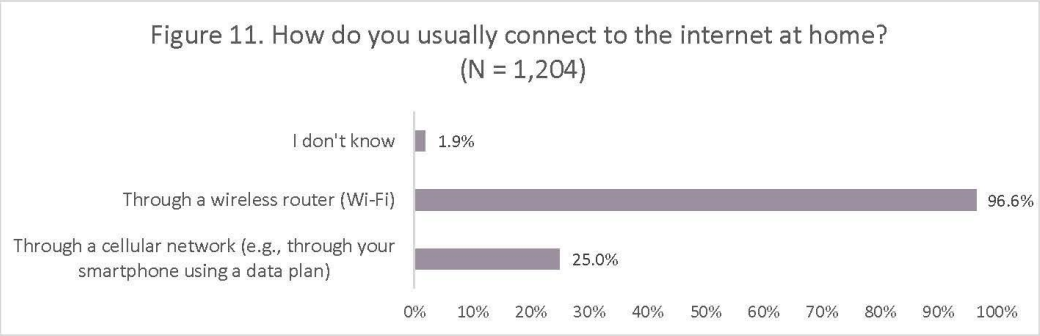
Table 4. Percentage of teachers and administrators who agree with statements about technology behavior at their schools (N = 953).

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | **Total % Agree/Strongly Agree** |
|---|---|---|---|---|---|---|
| I have/most teachers have strong classroom management strategies for using technology with students. | 0.7% | 5.6% | 19.6% | 51.2% | 22.9% | **74.1%** |
| The behavior rules and policies around technology use by students are clear at my school. | 5.2% | 14.4% | 19.9% | 43.7% | 16.8% | **60.4%** |
| There is consistent enforcement of technology behavior policies and rules across staff at my school. | 9.2% | 19.6% | 24.8% | 35.0% | 11.3% | **46.3%** |
| I spend a lot of time dealing with students' misuse of technology at my school. | 18.2% | 36.3% | 23.3% | 13.6% | 8.6% | **22.2%** |

## Family Survey Results (N = 1,204)

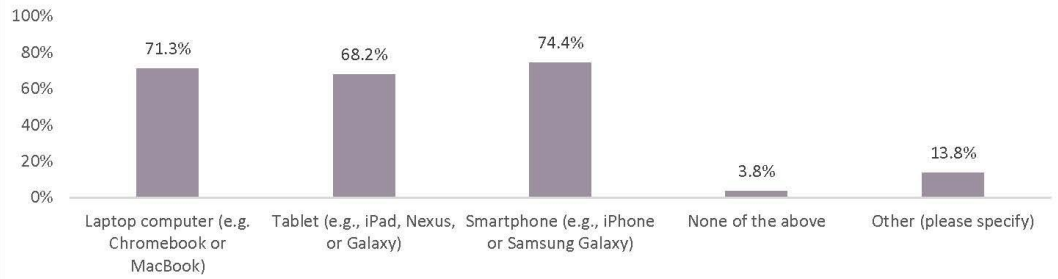
Nearly all families (96.8%) reported that they had consistent internet access at home. The vast majority of families reported having a wireless router (Figure 11).

Figure 11. How do you usually connect to the internet at home? (N = 1,204)



When asked what type of devices their children used at home, most families indicated they used laptops, tablets, or smartphones (Figure 12).

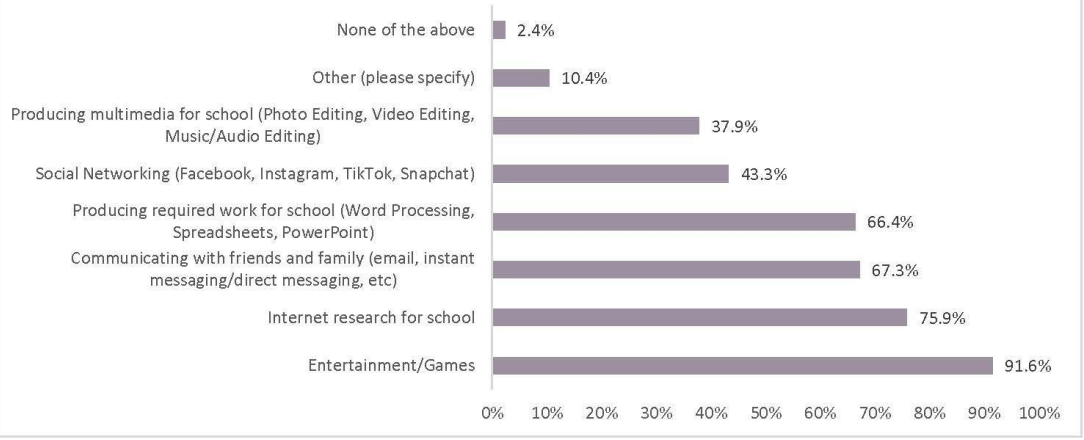
Figure 12. Devices families report their children use at home outside of school (N = 1,192)

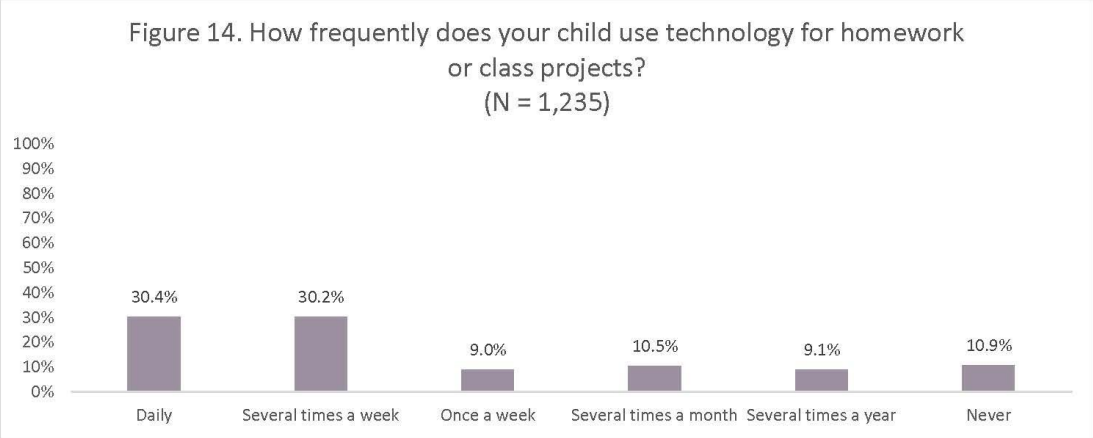



Families were also asked how their children used technology at home (Figure 13) and how frequently their children used technology for homework or class projects (Figure 14). Most families indicated that their child used technology for school at least weekly (69.6%). Additional devices children used included desktop computers, Smart televisions, and gaming consoles like Xbox.

Nearly all families (91.2%) reported that their children used technology for entertainment or games, and three-quarters of families reported their child used technology for internet research at school (Figure 13). Another 9.7% of families responded through an open-ended comment that their children also used technology to play educational games, for instruction supplementation (e.g., Dreambox, IXL, etc.), or reading.

Figure 13. Ways technology is used by children according to their families (N = 1,192)






Finally, families were asked a series of questions about their child's use of technology at home and at school (Table 5). Nearly two-thirds of families (63.0%) indicated that they would support the use of district funding to increase the use of technology in school and that they had a good understanding of how their child used technology at school. Only 15.7% of families agreed or strongly agreed that their children used too much technology at school, though nearly a third thought they used too much technology at home.

Table 5. Family attitudes towards their children's use of technology in and out of school (N = 1,210).

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | **Total % Agree/ Strongly Agree** |
|---|---|---|---|---|---|---|
| I would support the use of district funding to increase technology use in the classroom. | 8.9% | 10.4% | 17.6% | 36.7% | 26.3% | **63.0%** |
| I have a good understanding of the ways my child(ren) uses technology at school. | 3.3% | 16.2% | 17.6% | 46.7% | 16.3% | **63.0%** |
| Having consistent access to technology at school is critical to my child(ren)'s learning experience. | 7.7% | 12.8% | 20.0% | 36.7% | 22.8% | **59.5%** |
| My child(ren) is learning technology skills in school that will be necessary for college or a career. | 5.1% | 11.3% | 25.6% | 38.5% | 19.5% | **58.0%** |
| My child(ren)'s technology access in school is sufficient. | 6.6% | 17.4% | 24.7% | 39.3% | 11.9% | **51.2%** |

| | | | | | | |
|---|---|---|---|---|---|---|
| My child(ren) uses too much technology at home. | 9.4% | 29.8% | 26.2% | 28.0% | 6.7% | **34.7%** |
| My child is learning technology skills in school they might not otherwise learn. | 12.5% | 25.2% | 29.5% | 26.8% | 6.0% | **32.8%** |
| My child(ren) uses too much technology at school. | 15.3% | 35.2% | 33.9% | 8.6% | 7.1% | **15.7%** |

## Community Respondents' Results (N = 25)

Community members were asked a series of questions about the use of technology in the classroom. Table 6 below reports the results of this series of questions. Nearly three-quarters believed technology is a necessary part of everyday life, but only half believed teachers should incorporate more technology into their classroom teaching.

Table 6.
Community members' attitudes towards technology in the classroom (N = 25).

| | Disagree | Strongly Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | **Total % Agree or Strongly Agree** |
|---|---|---|---|---|---|---|
| Technology is a necessary part of everyday life and work and should be reflected in classroom teaching. | 4.0% | 4.0% | 20.0% | 40.0% | 32.0% | **72.0%** |
| Exposure to technology skills in K-12 education is critical to students' college and career readiness. | 12.0% | 4.0% | 12.0% | 32.0% | 40.0% | **72.0%** |
| Technology is a great way to engage students in the learning process. | 4.0% | 12.0% | 24.0% | 36.0% | 24.0% | **60.0%** |
| Teachers should incorporate more technology into their classroom teaching. | 16.0% | 16.0% | 20.0% | 24.0% | 24.0% | **48.0%** |

# Appendix C: Student Focus Group Results

## STRATEGIC TECHNOLOGY PLAN: STUDENT FOCUS GROUP RESULTS

### Executive Summary

In SY 2019-20, WCSD began work to develop a Technology Strategic Plan to help ensure all students and staff have access to the technology and technology skills they need to be successful. To inform this plan, WCSD sought input from students in elementary, middle, and high school through a series of 14 focus groups (four in elementary, four in middle, and six in high school) with 150 students. Questions asked students how they used technology in classrooms and at home, their attitudes towards the technology behavior policies at their school, and their attitudes towards one-to-one initiatives. Focus groups were conducted by staff in the Office of Accountability and by the WCSD Special Projects Administrator. Notes were summarized into major themes that arose across multiple groups.

#### Key Findings

**Technology use varies widely across schools and classrooms.** Some students reported using technology daily, while others reported going months without technology use in their classes.

**Classroom technology makes learning more fun, and sometimes helps with learning.** As long as technology functioned properly and was monitored effectively, students thought technology in their classroom made learning more fun and engaging (games especially). They also believed it offered a variety of benefits to student learning including:

- Prompt feedback;
- Options for self-paced learning; and
- Collaboration with teachers and other students.

**Policies around students' use of personal devices vary widely by classroom.** Students reported some teachers forbid any phone use in the classroom, with some teachers collecting the phones every day to prevent student use. Fewer reported that there were no rules around technology use, and students could use devices freely.

**Students think phones should be allowed in classrooms, but left on silent, used for learning, and embedded in schools' PBIS plans.** Students believed phones should be accessible for some student learning (especially for research and formative assessments) and for emergencies.

**Some students' families have rules about technology use, but most have access to and use technology at home (especially cell phones).** Students describes several concerns about technology (bullying, distraction), but value that it helps with self-expression, learning in new ways, and connecting with others.

#### FOCUS GROUP METHOD

Six schools were selected to participate in the focus groups conversations between February 11, 2020 and March 12th, 2020:

- Duncan Elementary
- Van Gorder Elementary
- O'Brien Middle
- Shaw Middle
- Reed High
- Sparks High

Schools were selected because they represented a range of student demographics and had varying levels of technology access at school.

Administrators selected students for participation who represented a range of demographics and backgrounds. Focus groups were conducted either during lunch or morning advisory. Food was provided to all participating students. Families were notified about their child's participation via passive consent.

# STRATEGIC TECHNOLOGY PLAN: STUDENT FOCUS GROUP RESULTS

## Part I: Attitudes towards Technology in the Classroom

### Types and Ways Technology Is Used in Classrooms

Students at all schools indicated their teachers used iPads, computers, and laptops at least periodically in the classroom. Some schools indicated they could use their cell phones for activities like taking quizzes, conducting research, or reading on their phones when they have free time. Many others also mentioned having projectors, Promethean boards, or televisions in class, though students said only teachers used them. They were typically used to review homework or test answers, or for teaching from textbooks.

#### Common activities students used technology for in the classroom included:

- Conducting research
- Learning how to type
- Taking tests, or practicing for Smarter Balanced exams
- Creating Word Documents or PowerPoint presentations
- Playing educational games
- Completing or accessing assignments using Microsoft Teams, especially when they were absent from school.

### Software and Applications Commonly Used in Classrooms

Students listed a wide variety of software and applications used in their classroom.

#### The most commonly used applications included:

- Envision Math/Envision Buddy (math quizzes/games)
- PowerPoint, Word, and Excel
- Prodigy (math games)
- Microsoft Teams and OneDrive (applications to track and monitor assignments and files)
- Accelerated Reader (tests to assess reading comprehension)
- Dreambox (math game)
- Readworks (reading lessons and resources)
- Quizlet/Kahoot/Myquizzes.com/Edulastic and other online quiz applications
- Kahn Academy (math instructional application)
- Lexia (English Language Art assessment and instruction)
- YouTube, Google, and Twitter

#### Less frequently mentioned applications included:

- Remind (message notification application)
- Turnitin.com (application to check for plagiarism)
- FlipGrid (classroom social media application)
- Minecraft (education version allows students to build virtual worlds online)
- Solid Works (computer-aided modeling application)
- Sway Application (Microsoft design application)

- Photoshop, Illustrator
- Rivet (reading application with leveled books)
- Seesaw (application to design videos/blogs/journals, and help with collaboration)
- Macken Via (online library of eBooks and education databases)
- Slack (social media site)
- Read Theory (reading assessment)
- Ed Puzzle (video and assessment site)

### Frequency Technology Is Used in Classrooms

Technology use varied substantially by school and by classroom. Some schools indicated using some form of technology (laptop, iPad, computers) at least twice a week. High schoolers indicated they used it at least every day, for 30-60 minutes, but that it varied by day. Others said a month would go by without any technology use. Most students said "it depends", both on the teacher and the week. Students at one school noted that their teacher did not have access to iPads or laptops and would have to wait to borrow them from another teacher, which they thought was "unfair."

### Attitudes towards technology use in the classroom

Students were asked a series of questions about whether they thought using technology in the classroom made learning more or less fun. There was general consensus across focus groups that technology usually made learning more fun, if it functioned well and was not used solely to deliver assessments.

When asked what made technology use more fun, students responded:

- *Technology Delivers Content in More Innovative Ways*
  - When we're working on geometry, it makes it more fun to draw the surfaces and stuff.
  - "When we play math games, like Prodigy, it's more video games than math. It's an adventure."
  - "On PowerPoint, you can add sound and bunch of crazy stuff. You can make it look super cool."
  - "Games make everything more fun."
  - "Kahoots is fun because it's competitive."

- *Technology Provides Constructive and Fun Downtime*
  - "We get to play games if we finish early, like Envision Games."

When asked what made technology use less fun, students responded:

- *Technology Was Often Glitchy or Nonfunctional*
  - "Our computers are so slow. When computers have to load and you just watch the circle go by…"
  - "You can only miss one question to pass to the next lesson. Or if you use a 'hint' it lowers your grade."

- "I don't like taking SBAC on the computer because the computers were so slow it added to the stress of the test taking."

Students were also asked whether technology helped them learn more or less than instruction without technology. In high school, 48.5% of students said they learned more with technology, 39.6% said they learned less using technology, and 11.9% said they learned the same with or without technology. Students in elementary and middle were not asked to vote, specifically, but overall expressed similarly mixed opinions about whether technology helped them learn more.

The following describes the ways students said technology helped them learn more:

- *Technology Provides Better or More Tailored Instruction*
  - "If you get the answer wrong, it explains it to you and helps you. You can retake the quiz too if you don't like your grade."
  - "I like to be challenged academically, and a lot of the apps challenge me."
  - "It's fun because it involves animals and it involves actually doing it instead of reading about it….you can see them doing it. [You get the] real world perspective."
  - "It teaches math better."
  - "Technology can enrich a project."
  - "Computers have more information than books."
  - "It's much better for research."

- *Technology Is Easier to Use or More Efficient*
  - "Instead of writing so much, you can just type, which is what we are going to have to do in our jobs."
  - "It edits all your spelling errors for you."
  - "You get more practice because instead of a worksheet with a certain amount of problems, we can just keep doing more and more math problems."
  - "Kindles are nice so you don't have to carry all those books around."
  - "We can learn at our own pace instead of waiting like three years until our teacher teaches us."
  - "You get the information so much faster with technology."
  - "You get your test answers in a day instead of a week or a month."
  - "I don't read that well, so I wish I could use the audio books to help me more."

**Benefits of Classroom Technology**

"[With technology], it involves actually doing it, instead of reading about it."

"We can learn at our own pace."

"You get your test answers in a day instead of a week or month."

The following describes the ways students said technology caused them to learn less:

- *Technology Provides Worse or Overly Complicated Instruction*
  - "When you get better at doing [Math Kahn Academy], the questions get more difficult so it's not as fun doing them because you don't understand."
  - "If you are using it to edit a video, some students don't know how to use the program and they get frustrated and impatient."
  - "It sometimes overcomplicates something that's pretty simple sometimes."
  - "I can read stuff myself, why do I have to have the computer read it to me?"
  - "I think it's easier to read in a book. It's funner in a book. I understand it better in a book."
  - "Teachers have to spend so much time dealing with technology."
  - "Sometimes you forget what a video said and you can't look back at it. If you read a passage, you can go back and find the answers."
  - "Sometimes with the videos it fills you in quicker but not as informed or in depth. But if you read, you learn it more in depth, but more slowly."
  - "I'd rather do paper because I tend to understand it better. And sometimes it's easier on paper just because it is."
  - "I worry if everything was done with technology, we would lose the fun of hands-on labs."

**Challenges of Classroom Technology**

"Teachers have to spend so much time dealing with technology."

"Just having my phone out is distracting."

- *Technology Can Be Distracting*
  - "I will switch to YouTube or Crazy Games if the teacher isn't paying attention."
  - "Just having my phone out is distracting."
  - "Much easier to cheat with technology."
  - "Social media makes it hard."

### Technology Students Would Like in Classroom

Students were asked what technology they would like to see added to their classrooms. Most indicated that they would just prefer to have more computers and iPads, with several students indicating they wish they had their own devices at school to use. Several just wished for faster laptops, computers, or internet. As one student noted, "In STEM classes, we have amazing computers that run quickly, but in others we have slow laptops that take forever to load. A lot of technology issues slow down learning." Some students wanted access to more games on their computers.

### Attitudes towards One-to-One Initiative

Conversations about which devices students wanted led to a follow-up question about whether students would be supportive of a One-to-One initiative at their school. That is, whether they thought they, and other students, would benefit if everyone were issued a laptop they could take home for the year. In general, students were supportive of a One-to-One initiative. At the two high schools, 96.0% of students participating indicated they would want a district-issued device. Students thought devices would help them stay organized, make their homework assignments easier to monitor, and help students who did not have access to technology at home.

**One-to-One**

"Teachers could send them all their assignments [when they're out sick."

"It would help kids get organized."

"It would be good for students who don't have a computer at home."

- *One-to-One Would Make Homework Easier to Monitor*
  - "If you had homework you didn't understand and didn't have enough time to ask your teacher, you have the laptop so you could go into Kahn and watch a video about it. It would be easier in my opinion."
  - "We've had kids getting sick and missing school. With the computers, somebody could call them on their phone and tell them the homework and they can do their homework while they are sick at home. Or the teacher could send them all their assignments."
  - "You could take [the laptop] from school to your home, write notes on there, and go back later and review it."
  - "It would help kids get organized."
  - "Stuff would be pre-loaded so it would run faster."
  - "Teachers can assign things online so it would save paper, and you wouldn't lose paper assignments."
  - "It would be more fun. My brother has it and they got to do this game for homework."

- *One-to-One Would Be Helpful for Students Who Don't Have Technology at Home*
  - "It would be good for students who don't have a computer at home."
  - "It would be good for homework as long as students have internet at home."

Students who were less sure of whether One-to-One was a good idea described several concerns:

- *Students May Not Be Responsible with Devices*
  - "Students go to websites they're not supposed to go to. It's hard for teachers to know what websites they're on."
  - "My sibling might try to use it."
  - "I'd be worried about losing something like a charger or breaking mine."

- "I wish we had computers in the classroom instead of on a cart. We maybe shouldn't take them home unless students show they're responsible first. Then maybe only kids that don't have computers at home get them. We'd need a lot of rules."
- "Some kids would abuse it and stay on it all the time."
- "There would be more judging of you (e.g., TikTok and Facebook) to be someone else and not yourself."
- "I think a lot of kids would forget their computer."

**Concerns about One-to-One**

"I'd be worried about losing something like a charger or breaking mine."

"Some kids would abuse it and stay on it all the time."

- *Easier to Use Paper and Pencil or Other Modes for Assignments*
  - "If it's reading, I would rather have that be on paper at home. If it's math, I'd rather do computer."
  - "On paper, you can go back and check your answers."
  - "As long as we can still have fun hands-on labs and other assignments and it wasn't all technology, it could be good. Just so it's balanced."

## Part II: Technology Rules and Behaviors at School

### Policies about Using Personal Devices at School

Students were first asked to describe what the rules for using personal devices were at their school in general. They were also asked to describe how consistently teachers followed the school rules for technology. Most said there were very inconsistent rules across classrooms. Or that the rules were consistent, but the consequences varied substantially by teacher. Below describes the results of this series of questions.

**Classroom Technology Rules**

"You can't touch your phone at all."

"We don't have any limits."

"Some teachers have phone pockets where you keep your phone during class."

- *Student Description of Technology Rules*
  - "We aren't allowed to do online games at school."
  - "We can only have our cell phones out for certain things and we have to ask the teacher."
  - "We can't use internet."
  - "You can't touch your phone at all. It also has to be on silent mode."
  - "One teacher passes out a bucket and we put our phone in and we get it back at the end of the day."
  - "With our class, our teacher lets us listen to music on our phones, but we can't text or watch videos."

- "We can't eat or drink with the computers and have to wash our hands."
- "We can't use social media or interact with random people. We can't listen to music."
- "We can't go on any games that aren't on the school's website."
- "The more advanced the class is, the less teachers care if you have your phone out."
- "They'll let us use it if we ask permission."
- "Most of my classes just say no. No phone use at all."
- "Depends on the classroom. And what you're doing in class that day."
- "7th and 8th graders get to keep their phones on them, but 6th graders don't."
- "Some teachers have 'phone pockets' where you have to keep your phone during class. But others don't."
- "We don't have any limits."
- "Some teachers make us put our phones on their desk and we can use it when they say so. Like for an assignment like research."
- "No one ever told us phones weren't allowed at school. We just know because teachers get mad and take phones away if they're out."
- "You can't have it during the day, only before and after school."
- "Lots of students sneak phones at recess or in their lunch box. Or hide it in their jacket."

### Consequences for Misusing Technology at School

Students were then asked to describe what the consequences were for misusing technology.

- *Student Description of Consequences for Breaking the Rules*
  - "Students won't get to use the computer for the rest of the class if they misuse it. If it's really bad or inappropriate, they take it away so you are no longer allowed to use it and they call your parents."
  - "Students have to work on math or writing projects or do tests if they get their computer privileges taken away."
  - "You'd probably get detention."
  - "They give it [personal device] to the office. The first time, you have to pick it up at the end of the day and sign a form to get it back. The second time, your parents have to pick it up. The third time you get detention."
  - "They take your phone away."
  - "You miss recess."
  - "You can't use it the rest of the week."
  - "The teacher will mark your [PBIS] card. Every time you get a mark, you get minus 10 points. Then it explains why we got the mark and parents have to sign it."

**Consequences for Rule-Breaking**

"You miss recess."

"They take your phone away."

"The third time you get detention."

- "If [teacher] catches us texting or playing games we lose our phone and we can't ever use our phone again."

### Beliefs about What Technology Rules Should be at School

Students were asked to describe what they thought *would* be a fair set of rules around technology. At the two high schools, most agreed that the rules were fair. In other grades, students offered a variety of suggestions to improve the technology rules, including:

- *Students Should Always be Able to Have Their Phones*
  - "We should have phones but they have to be on silent or airplane mode."
  - "If we had PS4 and Fortnight and Nintendos, more kids would want to come to school. But now, most kids want to be home and don't like school. If we used phones at school, it would be just as fun to be at school as home."
  - "Some teachers answer their phones, which doesn't seem fair."
  - "I think it's going to be easier if we all have our own computers than everyone getting up and going to the computer lab."

- *Students Should Be Able to Use Their Phones for Certain Activities*
  - "Maybe if you are doing work by yourself, you can listen to music with headphones."
  - "I think if we obey the rules all week, then Friday should be free phone time to play games."
  - "The 'pockets' [place where teachers store student phones during class] are necessary for tests, but not always."
  - "They should allow phones so we can use Kahoot."
  - "We should be able to use our phones for research."
  - "We should be able to use our phones for [entertainment] or games if our work is done."
  - "Cell phones should be allowed. Sometimes you need it and then if you don't have a calculator you can use your phone."
  - "I think in emergencies, we should be able to contact families." Three students said they had their phones taken away when they had been texting their mothers.

**What Rules Should Be**

"We should have phones, but they have to be on silent."

"We should be able to use phones for research."

"I think in emergencies, we should be able to contact families."

## Part III: Student Engagement in the Classroom

In addition to questions about technology use in the classroom, students were asked general questions about what teachers or classes were most engaging to them. The purpose of these questions is to better understand how technology can help enhance already great and engaging teaching. From this series of

questions, several themes emerged about the characteristics of classes and teachers are most engaging to students.

- *Strong Classroom Management That Ensures All Students Can Focus and Learn*
  - "The only problem [with that class] is sometimes students talk too much."
  - "[Other students] just don't try and they keep bothering you."
  - "In our class, if we earn 20 bucks for good behavior we get a pizza party or we can buy a day where we can chew gum or have a class auction."

- *Games and Other Hands-On Activities to Make Learning More Engaging*
  - "Or when we are doing math, she plays around, she makes it fun. She jokes. She makes the math like fun. She makes little rhymes and hand gestures."
  - "In science when we do labs. That's the most fun."
  - "My favorite teacher makes everything more interesting and makes me want to learn. She makes it fun."
  - "When we do real stuff."
  - "When we play jeopardy games."
  - "Project based learning."
  - "Simulations."
  - "Modeling, and other hands on stuff."
  - "Team-building"
  - "Working in groups."
  - "Debating"
  - "Competitions."
  - "Real world conversations."

**Characteristics of Good Teaching**

"[The teacher] plays around. She makes it fun."

"She feels like a super close friend."

"When you get a choice about what to write about."

- *Teachers Who Seem to Care about Their Students/Create Welcoming Environment*
  - "[The Teacher] feels like a super close friend, and is just nice overall. Teacher's job is not just to teach a student, their job is to be a friend and be involved with them, not just teach a subject."
  - "If we're having trouble, she goes over it again and makes sure that we understand it."
  - "When [the teacher] explains stuff and I get it. Not like everyone else [other teachers]."
  - "[Teacher Name] tries to make everyone happy and turn bad days into good."
  - "When they play music in the background."

- *Teachers Who Give Students Choice and Flexibility*
  - "He's kind of chill about assignments and turning them in. If you need more time to turn it, in he gives it to you."
  - "It's nice when you get choice about what you get to write about."

- "Mr." [Teacher], he does activities and we can vote [on which activity we do], you have a new video and you can be watching it and sometimes then have an activity."
- "When you get a say in what content is delivered."

## Part IV: Technology Use and Rules at Home

Students were asked a series of questions about their technology use at home, and whether the rules their families put in place about technology were the same or different as they were at school.

### Devices and Software/Applications Used at Home

Most students interviewed had some sort of device at home (nearly all at least had a phone), including in elementary school. Students used a variety of technologies at home for different activities including games, watching media (Netflix, YouTube, Rokus), connecting with others (SnapChat, Instagram, Twitter, calling/texting friends and family), and playing games (Play Station, Xbox, Wii, Gameboys, Game Cubes).

### Rules about Technology Use at Home

Rules about using technology varied substantially across students, with many indicating they had time limits on how long they could use it, or activities they had to complete before they could use technology. High schoolers were asked how many hours they used technology each day. Roughly 88% said they used technology for at least 3-4 hours a day, while the remaining 12% indicated using it for five or more hours per day.

- *Time Limits*
  - "I can't use it after 9."
  - "My parents don't take it away at night, so I can still get on it if I want to."
  - "We can't use any internet after about 9."
  - "Can only use it for 3 hours a day."
  - "Can only use it for 30 minutes a day." (most common limit)
  - "We can't use it on Sundays."
  - "I can only watch TV or movies on weekends."
  - "I earn time by doing chores."
  - "No watching TV at night."
  - "My parents set self timers, so my phone shuts off automatically. It helps that they don't have to make me get off it."
  - "We have rules, but I always push the limit. If my mom says 15 minutes, I stay on for 30."

- *Activities to Complete Before Technology Can Be Used*
  - "I have to finish chores before I can use it."
  - "As long as homework is done, there is no limit."
  - "I can listen to music while I'm doing chores."
  - "I can't use XBox unless I have straight A's.
  - "If I'm grounded, I can't use any technology."

- "I can't use it at the dinner table."
- "I can't have it when company is over."

- *Limits on Content*
  - "Nothing rated R."
  - "No social media." (Five elementary students indicated they couldn't use any social media)
  - "I can text people I know, like friends or family, as long as my family knows them. I can't give my phone number to people we don't know."
  - "My parents can go through my phone any time."
  - "I can use it as long as I'm not doing 'stupid stuff' with it."
  - "My parents put codes on stuff like Vudu so we can't watch certain stuff."

## Part V: Benefits and Challenges of Technology

Students were asked to describe what the main benefits and challenges associated with technology use were, both in and out of school.

### Benefits of Having Technology

- *Entertainment/Connecting with Others/Self-Expression*
  - "Lots of entertainment."
  - "I can FaceTime family that I miss who live all over the world."
  - "You can call or text people a long ways away that would have taken weeks for a letter to arrive and get back to you."
  - "The good thing is that you can express yourself."
  - "Phones are good for emergencies and communication."
- *Better Learning*
  - "I can do assignments ahead of the rest of the class."
  - "Computers help us understand more. If you are smart and you already got taught that, maybe the teacher will give you something else to do that's more challenging while the teacher is teaching the rest of the class."
  - "It can help with learning."
  - "Knowledge is really fast and quick."
  - "Everything is more efficient."
  - "You can have more one-on-one time with teachers."

**Benefits of Technology**

"You can express yourself."

"There are all these new ways to teach."

"Everything is more efficient."

- "There are all these new ways to teach."
- "Homework is a lot easier."
- "You can learn more because it [computer] knows everything. People only have a certain area in their head for information but the computer has endless information."

### Challenges Associated with Having Technology

- *Cyberbullying*
  - "In this century, we live in screens and technology that judges you. You don't look good enough and you're always comparing yourself to everything you see on there. Kids need a break from that."
  - "You want to fit in and not be the weirdo or different kid."
  - "Bullying online is a problem because it's anonymous. Then the pictures disappear and there's no proof of all the bad things happening to you."
- *Safety Concerns*
  - "We have to be really careful about viruses."
  - "Bad people can get your number and find you on social media."
  - "People can find out where you live."
  - "It's really easy to get into trouble."
  - "I know someone who had to move four times because of cyberstalking."
- *Addiction and Distraction*
  - "I get distracted and sometimes you don't get the things that are more important done."
  - "You always stick to it."
  - "We don't play outside as much."
  - "Kids sneak and use their phones during school and don't learn."
  - "When we have to sit and listen to a teacher or sit still [students are] like 'more, more, more. I need more stimulation.'"
  - "Sometimes I don't even want to talk to my friends because I'm on a game."
  - "It gets kinda addictive and you might spend a lot of money you don't need. Playing video games gets addictive.
  - "Some people in my class don't have time limits and they are always tired because they are on their phones all night."
  - "Kids get too attached and rely on it. When you don't have devices (they're taken away or lost or broken), it's different. You have to find other ways to entertain yourself and you have a lot of spare time."

**Challenges with Technology**

"It gets kinda addictive..."

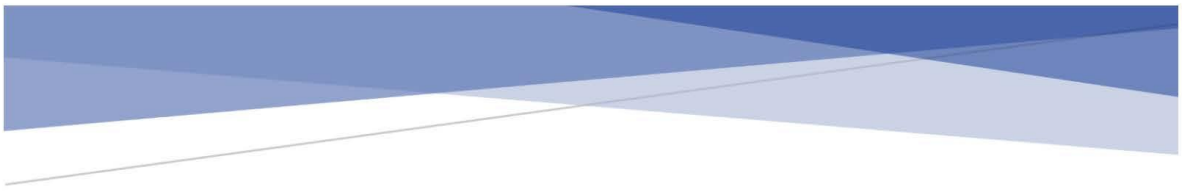
"In this century, we live in screens and technology that judges you...kids need a break from that."

"When we have to sit and listen to a teacher or sit still, [students are] like 'more , more, more. I need more stimulation'."

- "Kids hide their phones under their desks a lot."
- "My brother is so addicted, my mom has to literally unplug the game. Then he just goes to bed and doesn't really talk to anyone. He doesn't even blink."
- "We [siblings] are always competing for time on technology at home and it causes lots of problems all the time."

- *Games and devices are expensive*
  - "There's a game called Road Blocks, it will be so addicting it will make you buy a certain amount and give you money to buy stuff in games."
  - "I got this app on my family's Mac and it's supposed to help me learn. But it only allows me to do 5 minutes per day then I have to buy $119 to get unlimited play time."
  - "You buy clothes in a game that aren't even clothes in real life."

# Appendix D: Traner Middle School 1:1 Implementation Report



# NEVADA READY 21 IMPLEMENTATION AND OUTCOME EVALUATION

First Year One-to-One Implementation at Traner Middle School

2018-2019
Washoe County School District
Sarah Trescher, Research Assistant
Laura Davidson, Director of Research and Evaluation

## CONTENTS

Executive Summary ..... 2
Introduction ..... 3
Evaluation Methodology ..... 3
BrightBytes Survey Data ..... 3
Climate Survey Data ..... 4
Focus Groups ..... 6
Attendance and Discipline Administrative Data ..... 6
Results: Implementation ..... 7
Evaluation Question 1: Were activities implemented as planned? ..... 7
Barriers to Implementation ..... 9
Evaluation Question 2: To what extent are students learning and using 21st century competencies in the classroom? ..... 15
Collaboration ..... 15
Knowledge Construction ..... 17
Real-World Problem Solving and Innovation ..... 18
Use of Technology for Learning ..... 18
Self-Regulation ..... 19
Skilled Communication ..... 20
Evaluation Question 3: Has program implementation (e.g., use of 21st century competencies in the classroom) improved from the end of the 2018-2019 school year compared to the start of the school year? ..... 21
Results: Student Outcomes ..... 22
Evaluation Question 4: Has school engagement improved since the implementation of one-to-one? ..... 22
Student Engagement ..... 22
Self-Management of Schoolwork ..... 25
Attendance ..... 26
Evaluation Question 5: Has student behavior improved since the implementation of one-to-one? ..... 29
Bullying ..... 29
Student Respect ..... 31
Teacher Perceptions of Student Behavior ..... 33
Discipline Events ..... 34
Summary of Results ..... 36
Appendix ..... 39

## EXECUTIVE SUMMARY

Traner Middle School became a one-to-one school during the 2018-2019 school year with every student receiving a personal device to use in school and at home. The Office of Accountability conducted an implementation and outcome evaluation to assess the strengths and areas of opportunities to strengthen the program after its first year of implementation.

### Implementation

Generally, the one-to-one program was implemented as planned with strong support from the Office of Technology and Digital Learning Coaches. Every student received a personal device for school and homework. Based on the BrightBytes survey data, implementation was generally successful. Teachers report that almost all students (96%) regularly have access to a computer in class and that other components of the program (e.g., on-site technical assistance) have been successful. Based on the BrightBytes survey, the majority of students report they are regularly asked to use 21st century competencies in the classroom such as collaborating with classmates, developing multimedia a presentations, or conducting research.

Focus groups with students indicated that students benefitted from having a way to track their homework and assignments digitally, that communicating with their teachers was often easier digitally, and that the collaborative projects the devices facilitated were helpful. Most teachers in the focus groups thought the devices had helped improve their capacity to develop students' 21st century skills. They noted having tech support on campus was critically important for effective implementation.

Barriers to implementation included inappropriate use of the devices in class (e.g., games) and lack of clear expectations for computer use; themes that came up frequently in student and staff focus groups. Focus groups with students indicated that the added responsibility of having to keep track of a device was challenging. They were also frustrated by behavior policies that punished them when they did not bring a charged computer to school. Some students indicated they wished devices were used less often in the classroom, as they were often a distraction to learning.

### School Engagement

Based on the climate survey, 7th grade students reported higher engagement compared to their 6th grade year. Eighth grade students did not report changes in school engagement. Students were less likely to be absent during the first year of one-to-one implementation compared to the previous school year.

### Student Behavior

Based on the climate survey, both 7th and 8th grade students reported an increase in student respect and a decrease in bullying compared to the previous school year. Teachers reported an improvement in student behavior during the 2018-2019 school year. However, students were more likely to be suspended from school during the first year of program implementation compared to the previous school year.

## INTRODUCTION

The Nevada Ready 21 (NR21) grant aims to provide students with a technology-rich education that includes the development of 21st century skills. The 2018-2019 school year was the first year that Traner Middle School implemented a true one-to-one program. Every student received a personal device that they could use in school and take home to use for schoolwork. In addition, there was on-site technical support and technology coaches to help teachers and students with implementation and provide support when needed. Prior to implementation, teachers participated in professional development to increase their understanding and integration of 21st century competencies and technology instruction in the classroom.

## EVALUATION METHODOLOGY

The purpose of this evaluation is to provide an initial report of the one-to-one program at Traner Middle School after one year of implementation. The Office of Information of Technology asked the Office of Accountability for support with a comprehensive evaluation of Traner's one-to one-initiative. The Office of Accountability developed an evaluation plan to examine the following research questions:

Program Implementation Research Questions:

1. Were the one-to-one program activities implemented as planned at Traner Middle School? What was successful about implementation? What barriers occurred during implementation and how were they addressed?
2. To what extent are students learning and using 21st century competencies in the classroom?
3. Did program implementation (e.g., use of 21st century competencies in the classroom) improve at the end of the 2018-2019 academic year compared to the beginning of the school year?

Program Outcome Research Questions:

4. Has school engagement improved since the implementation of one-to-one?
5. Has student behavior, and teachers' perceptions of students' behaviors, improved since the implementation of one-to-one?

We used the following data sources to answer the research questions:

### BRIGHTBYTES SURVEY DATA

Students and teachers participated in a survey through BrightBytes.net to explore 21st century learning and assess program implementation. Five hundred ninety-six students and 41 teachers completed the pre-survey between September 24-October 22, 2018, and 518 students and 48 teachers the same survey at the end of the year between April 15-May 13, 2019. Students and

teachers responded to questions in four main categories: classroom, access, skills, and environment.

**Classroom**

Teachers and students respond to how often they use or are asked to use the "4Cs": Communication, Collaboration, Critical Thinking, and Creativity. For instance, students were asked to indicate how often they collaborate online with classmates: at least weekly, monthly, every few months, or never. Students and teachers are also asked about digital citizenship such as how often they are taught to act respectfully online.

**Access**

Students and teachers are asked about their access to computers at both school and at home.

**Skills**

Students and teachers responded to questions about their foundational, online, and multimedia skills. Foundational skills include items like "I learn technology easily" and participants indicate their agreement with this statement on a 5-point Likert scale from 1 "strongly agree" to 5 "strongly disagree." Online skills include questions regarding frequency of social media use as well as how easy or difficult it is for students to download and install software.

**Environment**

Teachers were asked questions about policies, support, and professional learning around technology use in the school. In addition, both teachers and students were asked about how they felt technology influenced their learning and education.

## CLIMATE SURVEY DATA

Each year, all WCSD students in grades 5-9 and 11 complete a school climate survey that asks them questions about their perceptions of their school and their social and emotional competencies (SECs). The survey is typically administered in the spring, however, in the 2018-2019 school year the survey was administered in late fall to reduce spring testing burdens on schools and students.

**Participants**

For the current evaluation, we assessed three years of climate data and two cohorts of students. Students enter their student ID when they take the climate survey, which allows tracking of students from year-to-year. We were thus able to assess if students reported any significant changes in their perceptions of school climate and SECs from year-to-year. For each climate variable, we ran multilevel models to allow us to examine any changes overtime within each

student. To assess changes within the same students, we examined an 8th grade and a 7th grade cohort of students.

**8th Grade Cohort.** At Traner Middle School, there were 91 students who were in 8th grade during the first year of one-to-one implementation and who also took the climate survey all three years they were enrolled at Traner. We examined these students' climate survey responses and compared them to their previous two years of middle school (the 2017-2018 school year and 2016-2017 school year).

For comparison, we also examined trends in student climate data at a similar middle school in the district. This school was chosen because it had the same 6-8th grade configuration as Traner, and in previous years has had similar test scores and demographics, including the percentage of students who quality for Free or Reduced Lunch (FRL). At the comparison school, 89 students took the climate survey all three years they were enrolled at that middle school.

**7th Grade Cohort.** There were 140 7th grade students at Traner Middle School during the first year of program implementation (2018-2019 school year) who also took the climate survey the previous year in 6th grade. Using multilevel modeling, we assessed these students' climate responses in their 7th grade year when one-to-one was implemented, and compared them to their 6th grade year prior to the one-to-one program.

We examined the trends in student climate data at three similar middle schools in the district. These schools were chosen because they have the same 6-8th grade configuration as Traner and have had similar test scores and demographics in previous years. At two of the comparison schools, this was their first year on a 6-8th grade configuration (they previously only served 7th and 8th grades) and thus were not able to be used to compare to the 8th grade cohort.

**Measures**

**Student Engagement**. Students responded to seven questions to assess their level of engagement with school. For example, students indicated their level of agreement on questions such as "Most of what I learn in school is interesting," and "School keeps my mind really busy." All responses are on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). All seven items are then averaged for a total score on school engagement. A mean score of 2.5 or higher would indicate that students are generally agreeing with each statement.

**Self-Management of Schoolwork**. Students responded to six questions to rate how easy or difficult for them it is do certain behaviors such as "Doing my schoolwork even when I do not feel like it," and "Planning ahead so I can turn a project in on time." Students indicated their responses from 1 (very difficult) to 4 (very easy).

**Student Respect**. Students responded to six questions regarding student respect such as "Students at my school treat teachers and staff with respect" and "Students at this school think it

is important to follow the rules." As with student engagement, responses are on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree).

**Bullying**. Students responded to three questions regarding bullying at their school such as "students at this school are often bullied." Responses are coded so that higher numbers indicate more positive responses, or perceptions that there is less bullying.

**Staff Climate**. Staff also complete a school climate survey each year. Fourteen questions assess how common or uncommon certain student behaviors are such as bullying among students, disruptive student behavior, and truancy. Staff indicate their perceptions of how common these behaviors are from 1 "Very common" to 4 "Not at all common." Unlike with the student climate survey, teachers are not tracked by a unique identifier and so we are unable to compare the same teachers across years. Therefore, we only can compare mean scores of overall teacher responses.

## FOCUS GROUPS

Four, hour-long focus groups were held with 11 students and 15 staff members. Students were recruited by their teachers and signed parental consent was obtained. Students participated during the regular school day and staff participated after school. The focus groups all occurred on the same day and were held in the last week of the school year. Two moderators from the Office of Accountability facilitated the focus groups and asked open-ended questions about participants' experiences and attitudes regarding the one-to-one program. The focus group protocols can be found in the Appendix.

## ATTENDANCE AND DISCIPLINE ADMINISTRATIVE DATA

We analyzed WCSD administrative attendance and behavior data to assess how school attendance and discipline changed (or didn't change) during the first year of one-to-one implementation compared to the previous school years. We calculated the average proportion of days students were absent each year. For students who were enrolled at Traner at least 10 days, we calculated the number of days absent divided by the number of days they were enrolled. We coded discipline data as either 0 = "student did not have a discipline event during the school year" and 1 = "student had at least one discipline event during the schools year". We did this three times; for minor incidents, major incidents, and suspensions. As with the climate data, we examined data for both the 8$^{th}$ grade and 7$^{th}$ grade cohorts.

**8$^{th}$ Grade Cohort.** We examined attendance rates and behavior incidents for 8$^{th}$ grade students who were enrolled at least 10 days at Traner Middle School when they were in 6$^{th}$, 7$^{th}$, and 8$^{th}$ grades. There were 151 students at Traner Middle School enrolled at least ten days all three years of middle school.

**7$^{th}$ Grade Cohort.** There were 193 7$^{th}$ grade students enrolled at Traner Middle School during the first year of program implementation who were also enrolled the previous year as 6$^{th}$ graders.

We examined whether this 7th grade cohort of students had any changes in their attendance and discipline during the first year of one-to-one program implementation.

## RESULTS: IMPLEMENTATION

### EVALUATION QUESTION 1: WERE ACTIVITIES IMPLEMENTED AS PLANNED?

NR21 identified the following primary components of a successful one-to-one rollout, including:

- Distribution of functional, personal devices to each student for school and home use
- Providing a Common Sense Media Digital Citizenship curriculum for students to learn appropriate and productive online behaviors
- Providing on-site technical support for students and staff to troubleshoot any technology issues that might arise
- Professional development for staff to support their understanding of how to use technology as a way to enhance student learning of academic subjects as well build students' 21st century competencies. WCSD defines 21st Century Competencies as the following:
    - Collaboration
    - Knowledge Construction
    - Real-World Problem Solving and Innovation
    - Use of Technology for Learning
    - Self-Regulation
    - Skilled Communication
- Integration of 21st Century Competencies into instruction and student work

Throughout the first year of implementation, the Office of Technology closely monitored and assessed implementation at Traner Middle School. All students received a personal device and completed a digital citizenship curriculum. Staff were provided with professional development before and during one-to-one implementation and regular on-site support was available. Listed below is a snapshot of the implementation results from the perspective of students and teachers obtained from the BrightBytes survey data:

- ✓ All students received a personal device to complete schoolwork
    - 96% of teachers reported that they are able to obtain computers for their students when they need them "All the time"
        - 2% of teachers reported they are able to obtain computers for their students "Over half the time"
        - 2% of teachers reported they are never able to obtain computers for their students when they need them
    - 84% of students reported being allowed to take their computers home

- 69% of teachers perceived the quality of computers to be "Excellent" or "Above Average". Only 9% of teachers reported the quality of computers is "Below Average"

✓ All students have completed the WCSD Common Sense Media Digital Citizenships curriculum, through which they learn appropriate and productive online behaviors
- 84% of students reported that they were taught how to act respectfully online
- 80% of students reported they that were taught how to protect their identity through the safe use and storage of person information
- 81% of students reported that they were taught how to check that websites are safe
- 70% of students reported that were taught how to be careful of emails form unknown sources
- 57% of students reported they were taught how to share information about themselves online

✓ Professional development for staff to support their understanding of how to use technology as a way to enhance student learning of academic subjects as well build students' 21st century competencies
- 87% of teachers reported they spent at least nine hours participating in school-sponsored professional development
- 87% of teachers agree or strongly agree that technology use in class can enhance student learning
- 64% of teachers agree or strongly agree that learning is more engaging when using technology

✓ Providing on-site technical support for students and staff to troubleshoot any technology issues that might arise
- 73% of teachers report that the quality of support for problems disrupting instruction is at least average or above
- 89% of teachers report that the quality of support for answers to routine questions is at least average or above

All students received a personal device to use at school and at home. Most students used their device in the classroom. Focus groups revealed that some students lost their privileges or were not able to use the computers in the classroom. This was sometimes a burden for teachers who had to develop two lessons plan: one for most of the students who had their computers and one for students who did not. It is unclear how many students did not have a computer to use, but according to the BrightBytes survey data, 4% of teachers reported that students did not have access to computers all of the time. The overall quality of computers was also rated highly by the teachers.

The majority of students reported that they were taught how to act respectfully online and protect their personal information. Just over half (57%) of students reported they were taught how to

share information about themselves online. Overall, it seems that most students reported they were taught safe online behaviors.

Having technological support readily available is critical for successful implementation of one-to-one initiatives (Penuel, 2006). It is important to have available onsite assistance who can address any technological issues that arise so that such issues do not impede instruction time. According to BrightBytes post-survey data, 89% of the teachers reported that the quality of support for answers to routine questions is average or above average (compared to 73% in the pre-survey).

It is evident that in order to continue to implement one-to-one successfully, there needs to be a full-time staff person who is available to address technical issues that arise. Teachers expressed great appreciation and highlighted the importance of having a full-time staff member dedicated to addressing technological issues in focus groups.

> "*Having that one dedicated one-to-one person, as opposed to in years past when we've had technology people part-time, or they had split roles – having [one person] do that as his sole job is necessary*" - Teacher

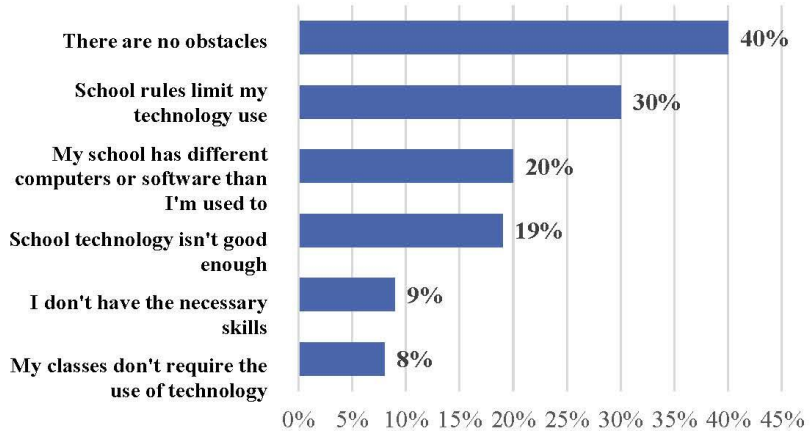
> *"The system we had worked out was for [the IT person] to go to the kids to minimize instructional loss so kids weren't wandering around and looking for [that person]. That only works if your IT person is monitoring it at all times – which he did."* - Teacher

> *"One of the best ideas was help request – if a student had an issue, they can sit there and send an email for a help request and he can just find them – he can just look at their schedule and see what room they are in."* - Teacher

## BARRIERS TO IMPLEMENTATION

While many aspects of the implementation of the one-to-one initiative were successful, there were still significant challenges to successful implementation. In the BrightBytes survey, students were asked what some of the obstacles were that prevented them from use of technology at school. As seen below in Figure 1, 40% of students indicated that there were no obstacles. However, the most common obstacles students cited were school rules and the software being different than what they are used to.

**Figure 1. Student Reported Obstacles to Implementation**




Many of the barriers to implementation were made evident in both the teacher and student focus groups. Below we describe some of the most common barriers noted by teachers and students. Although these were significant barriers to implementation that do need to be addressed, it is important to note there were also many things that went well for program implementation. Both teachers and students identified many benefits to the technology (as described later in the evaluation) despite the following barriers.

**Inappropriate use of the devices**

Both teachers and students noted during focus groups that the devices were not always used for academic reasons and often distracted from learning. Students recognized how easily distracted they could get using the devices.

> "*I would get distracted like, I would watch YouTube or I would play games*" - Student
>
> "*Lots of people are just messing with google and not listening to teachers*" - Student
>
> "*Some kids don't listen to the teacher now, the boys mess around more and play games and our teacher broke down a few times. They were so frustrated with it.*" - Student
>
> "*Computers get too distracting, some kids are hiding behind their screens in class so they can be on their phone*" - Student

Students also admitted that having the devices made cheating much easier.

> "*People can also share tests and copy off each other now. I've done that a ton. So much easier to cheat.*" - Student

Students mentioned that not all students took care of their devices and some devices had cracked screens or were missing keys. As mentioned above, when students did not have their devices or power cords for whatever reason, teachers often had to spend extra time planning two lessons: one for students with computers and one for students without computers.

> "*I think it created a ton of frustration. Had to police kids a lot more. They know when I go to laptop to monitor them, they'd flip over and change what they were doing. They flung their computers around. You're asking a lot for 11 or 12 year old.*" - Teacher

> "*The trouble I'm running into is that we have several students for whatever reason no longer have a computer. And so now if you use the computer you also have to have a pencil/paper option for students without computers. So it ends up being twice the work. You can plan this great [lesson] and websites can have all this great information, and now you have to come up with something else for those who don't have a computer.*" – Teacher

Many teachers expressed grave concerns regarding video game distractions.

> *"We should not downplay the video games and the addiction for games and notifications on everything. It's a problem as a society that I think really needs to be looked at. Everyone says – just teach them not to use it – teach them how to regulate their time. But they are addicted – you can't tell an alcoholic not to drink. This is addiction we are dealing with and it's not about just teaching them the right way."* –Teacher

Further, many teachers noted how quickly students were able to learn work-arounds and loopholes in order to access inappropriate content or evade monitoring via Landschool. Teachers described several loopholes students used to avoid content restrictions on the student Wi-Fi network included students using hotspots on their phone, using the incognito window, or used the guest Wi-Fi. Students would then quickly communicate how to "game" the system to their peers.

> *"It sucks that they found them [the loopholes] but it's also really cool because they are thinking so creatively – you're in trouble but good job! Now can we put some of that energy toward your math homework?"* – Teacher

> "*There were just too many workarounds that were easy for them to figure out. Then once one knows how to bypass something, it spreads like wildfire. I even had them all forget the guest network, but they figured out how to get around that.*" – Teacher

Teachers unanimously wished more games could be blocked (and more permanently). However, teachers did request more flexibility around which sites and applications are blocked. For instance, many teachers used YouTube as an important teaching tool in their classroom.

> *"I would be devastated if YouTube was blocked because I've had kids where I've tried to teach something five different ways and they are still not getting it, so I have them go on YouTube and find their own videos to get it from there. And that works."* – Teacher

> "*If we could just figure out a way to block Fortnight that would solve a lot of problems.*" –Teacher

> "*I wish we had a way to add software programs to override the "adding apps function.' Teachers should be able to disable that and download what they need and use professional judgment.*" - Teacher

**Using the technology as a resource, not a replacement for teaching**

Preliminary research suggests that blended learning, or the combination of both face-to-face instruction and online instruction, is moderately related to better outcomes compared to face-to-face instruction only or online instruction only (Means et al., 2009). Teacher focus group results indicate that there is a learning curve around how to effectively use the new technology to enhance student learning, rather than replace in-person instruction. At first, teachers felt like they had to use the devices in their classrooms all the time. As the year progressed, they learned how to use the devices more efficiently in their classes.

> "*The [computer use] was heavy in the beginning and I feel like it just naturally balanced out. The feedback from the kids helped with that, we as a staff are learning how to use it in a more meaningful way and so we didn't feel that pressure to have to use it just because they were new and we were starting to use them more authentically.*" – Teacher

> *"[It's important] to listen to the kid's input on whether or not they are feeling burnt out by the technology. Because that happened around the end of the 1st quarter – the kids were just like "I hate the laptops right now, my eyes hurt form looking at the screen every class."* – Teacher

> "*Just having the awareness that the technology does not replace good teaching. If what you were doing before computers was good, it can make it better. It could get better with technology, but it also might not.*" - Teacher

Students also did not want to use the computers all of the time. There were times when students indicated they would have preferred using pencil and paper.

> "*I really don't like using my computer… I'd rather do paper stuff [written assignments] so it won't be as complicated as using the computer*" - Student

> "*Back when I didn't have it, we worked with partners face to face more instead of being on computers. I liked that better. You could talk more, but now everyone just sits with each other on their computers and doesn't talk.*" - Student

**Student lack of computer literacy skills**

Teachers learned quickly that many students did not know basic computer skills like how to open a Word document or turn their computer on and off. Many teachers had to spend instructional time filling in gaps in students' basic computer literacy skills before they could use the devices for classroom instruction.

> "*So many kids need basics of computing. You mistake their fluidity with social media as computer literacy, but they really don't have that and need a class on it.*" –Teacher

> "*I had a ton of kids who had never learned how to open a Word document.*" – Teacher

> "*I had students who didn't know how to escape from programs. Like, just hit the escape button. Or control-alt-delete. Or copy and paste.*" – Teacher

**Lack of clear computer use guidelines for students**

Some staff indicated in the beginning of the year, there were not clear expectations for computer use. Teachers reported that students would often forget their computers or would forget to charge them and thus could not be used in class.

> *"We didn't have our progressive discipline squared away from the start and I think that was a mistake."* – Teacher

> *"Our biggest struggle 1st semester was allowing for loaners because it encouraged irresponsibility on the part of the students; if they forgot their computer for whatever reason, we would just provide them with a loaner."* – Teacher

> *"Go in with very clear and explicit expectations: you will come to school with your laptop every single day if you don't there will be repercussions, your laptop will be charged every day – if you don't this is what happens. Without that, it's hard"* – Teacher

> *"They come in with a charged cellphone but not a charged computer. And I want to see real consequences when they are consistently coming unprepared for class."* – Teacher

Students noted that the increased responsibility was sometimes burdensome. Several students also indicated the computers were heavy and that made it difficult to carry them around school all day.

> *"It's our responsibility to keep it safe. But we're still young and you make mistakes"* - Student

*"If you don't charge your computer, you get a write-up. If it's my computer to use, don't I have right to charge it and use it the way I want?"* - Student

*"I was always too tired to charge it when I got home late. How many of you charge it as soon as you get home <no hands up>. Yeah, that's what I thought. Then I was always rushing to do it in the morning."* – Student

*"There's a lot of responsibility which is a good thing for the people who actually want to be responsible. It's a bad thing for the people who are irresponsible and don't care."* - Student

"*We carry our binder and our computer on top and it's heavy*" – Student

**Problems with computers freezing in class**

"*Sometimes it freezes, and you have to restart it again. And after like 3 minutes if you don't the cursor, it freezes again and you have to restart it. It's so annoying to me, because when I'm doing a test and I'm on the last question, I get so mad because I have to restart it.*" - Student

**Lack of Wi-Fi in students' homes**

Several teachers brought up the concern that many students do not have Wi-Fi in their homes. This made access at home not equitable for all students.

"*A lot of kids didn't have Internet at home. Makes it hard for kids to do what they need to do when they don't have internet.*" - Teacher

"*I think it's important not assuming kids know the basics. They couldn't even answer the question about whether they had internet on Brightbytes, because they don't know the difference between having a data plan and having full-time Internet through Wi-Fi.*" - Teacher

"*We are a low SES school, one of our biggest barriers is the majority of families do not have Wi-Fi at home. So this whole idea of oh it's so great because you have one-to-one classroom, is not accessible to everyone. That is something they need to be cognizant of. I know recently someone got a grant to get kids mobile hotspots – that's really awesome because we could offer that to our families in need. I did not realize how few students had Wi-Fi.*" - Teacher

**Implementation Key Findings**

- Generally, the one-to-one program was implemented as planned with strong support from the Office of Technology and Digital Learning Coaches; every student received a personal device for school and homework
- The first year of implementation resulted in a huge learning curve for both teachers and students. As the year progressed, teachers learned how to best use the devices in their classroom
- The lack of progressive discipline and computer use rules/guidelines made it difficult for teachers to know how to respond when a student forgot their computer or their computer was not charged
- Distractions on the computer, such as video games, were a significant source of concern for both teachers and students

## EVALUATION QUESTION 2: TO WHAT EXTENT ARE STUDENTS LEARNING AND USING 21ST CENTURY COMPETENCIES IN THE CLASSROOM?

The one-to-one initiative also aims to enhance students' day-to-day learning and use of six core 21st century competencies: collaboration, knowledge construction, real-world problem solving and innovation, use of technology for learning, self-regulation, and skilled communication. To assess 21st century competencies, we examined data from a BrightBytes survey which students in teachers completed in September/October of 2018 (pre-survey) and again in April/May 2019 (post-survey).

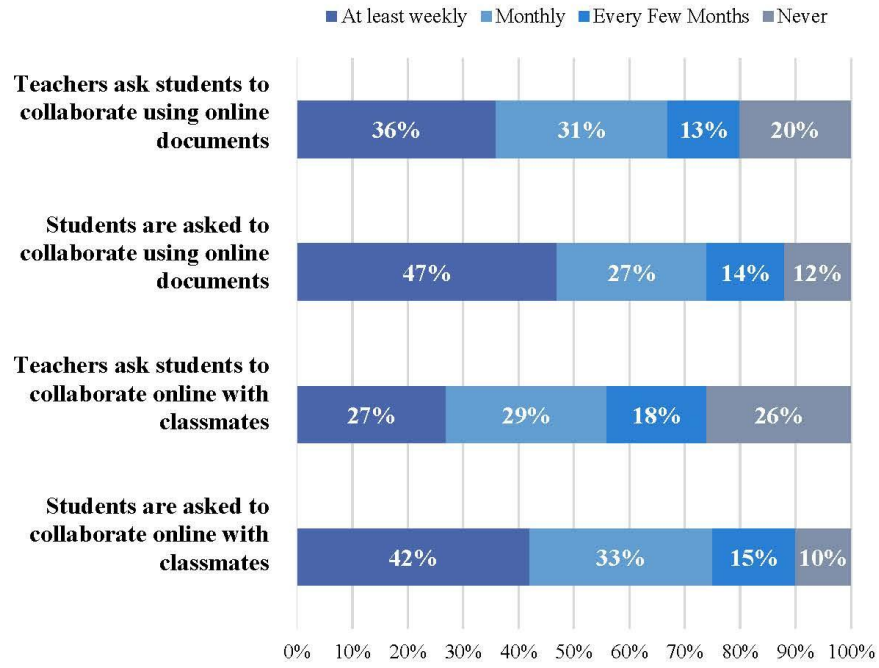
### COLLABORATION

- ✓ **75% of students report being asked to collaborate online with classmates at least monthly**

Students can use their personal devices to collaborate with their peers online. Survey results show that 75% of students were asked to collaborate online with classmates at least monthly. Figure 2 shows how teacher and students responded to collaboration questions in the BrightBytes survey.

"I feel like the students are more comfortable asking other people for help. Whether it's related to the content or the technology, they are willing to ask someone else for support if they need it." – NR21 teacher

**Figure 2. Teacher and Student Perceptions of Collaboration Use**

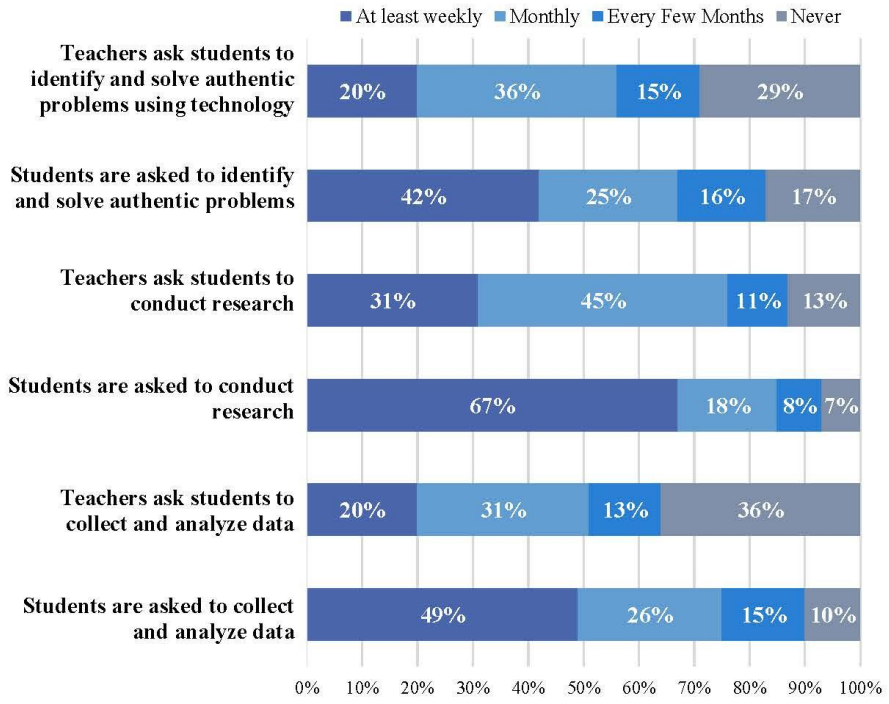



*"We like collaborating in google docs. And it makes presenting easier. And it's actually fun because you get to talk to your friends."* – Student

- ✓ **67% of students report they are asked to identify and solve authentic problems at least monthly**

Knowledge construction is an important 21st century skill in which students build knowledge rather than just simply accessing or reproducing knowledge. In the post-survey, two thirds of students reported they were asked to identify and solve authentic problems at least monthly. Figure 3 shows how both teachers and students responded in the BrighBytes survey.

**Figure 3. Teacher and Student Perceptions of Knowledge Construction Use**



## REAL-WORLD PROBLEM SOLVING AND INNOVATION

- ✓ **58% of students say they are asked to plan and manage a process for solving real-world problems that considers advantages and risks at least monthly**

Real-world problem solving is an important skill for students to develop. Students do so by working on a substantial real-world problem, or engaging in an activity that involves the creation of a new product, method or idea.

## USE OF TECHNOLOGY FOR LEARNING

- ✓ **66% of students say that at least monthly they are asked to use computers to solve problems efficiently**
- ✓ **69% of students say they are asked to use digital tools to collect and organize information at least monthly**

The one-to-one initiative allows for all students to use technology to engage in learning. Students can use technology for a lesson, and at a higher level can use technology to construct knowledge.

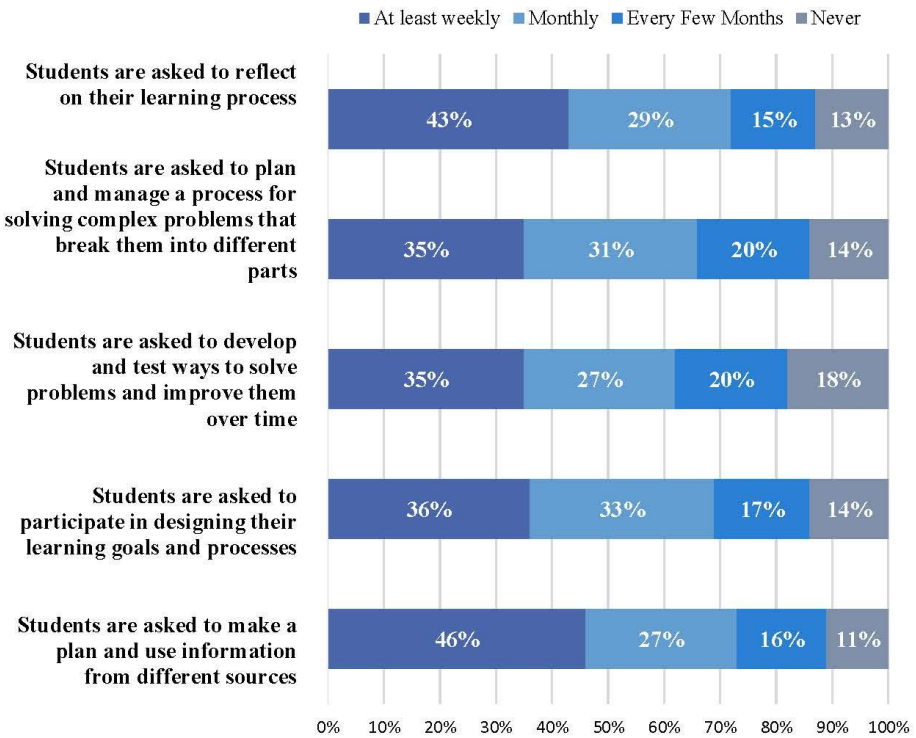
Teachers and students recognized the pros and cons of using technology for learning. Students and staff in focus groups reported that it was useful to have the technology to conduct research and make different kinds of presentations. However, there were times when they felt the technology was overused. For instance, students expressed that the computers were often frustrating to use in math courses.

> *"I just want to have paper in math. It's easier to work out the problems with pencil and paper."* – Student
>
> *"I don't want [to use the computers] in every class – just certain classes. It would be better to not have it in math. In social studies you have to research a lot so it helps to have the computers."* –Student
>
> "*Students were not super fond of GoMath, so I steered away from that and used other tools to engage kids"* – Teacher

- ✓ **69% report that they are being asked to participate in designing their learning goals and processes**
- ✓ **72% of students say that they are asked to reflect on their learning process on at least a monthly basis**

Students engage in self-regulation when the activity is long-term and students have to set long-term goals, when students have to plan and monitor their own work, and have the opportunity to revise their work based on feedback. According to survey results, over two-thirds of students are asked to engage in such behaviors at least monthly.

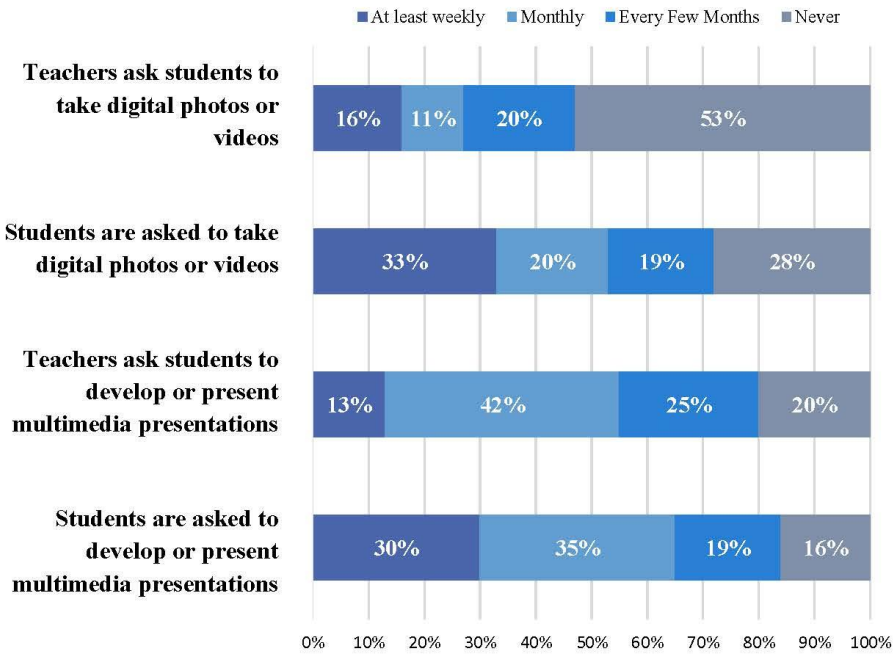
**Figure 4. Student Perceptions of Self-Regulation Use in the Classroom**



- ✓ **65% of students reported being asked to develop a multimedia presentation at least monthly**

Students practice skilled communication when the activity requires extended use of multi-modal communication, or when students are required to provide and present evidence to an audience. Survey results indicate that almost two-thirds of students reported they are required to develop multimedia presentations at least monthly.

**Figure 5. Teacher and Student Perceptions of Skilled Communication Use**




These findings mirror feedback from both student and teacher focus groups about the primary ways they use their devices. Students enjoyed learning different ways to make presentations and teachers expressed that a lot of students would take what they learned in other classes and use that same presentation mode in their class.

*"It helps with giving presentations – you can make your own backgrounds or add a picture if someone doesn't understand what you are talking about."* - Student

*"If their ELA teacher has been using PowerPoint or Google Slides and their social studies teachers did something different; I give kids the option – make video, make a PowerPoint, make a Google Slide – I let them choose whichever one they wanted. They would default to the one they used in their other classes because they felt comfortable with it. It was cool to see them make connections to their other classes."* - Teacher

**21st Century Learning Key Findings**

- At Traner MS, students reported they primarily used their computers to conduct research, develop multimedia presentations, and collaborate with their classmates
- Students enjoyed using the computers for research and presentations but found the computers burdensome in some classes like math

## EVALUATION QUESTION 3: HAS PROGRAM IMPLEMENTATION (E.G., USE OF 21ST CENTURY COMPETENCIES IN THE CLASSROOM) IMPROVED FROM THE END OF THE 2018-2019 SCHOOL YEAR COMPARED TO THE START OF THE SCHOOL YEAR?

Overall, there were not large changes in the pre and post BrightBytes survey data. There could be a number of reasons for this, and one possible explanation could be that by the time students and teachers completed the pre-survey, students and teachers had already been using the devices for a couple of months. The focus groups revealed that both students and teachers felt that being able to conduct research was a very valuable use of the computers. In the pre-survey, 85% of students indicated they were asked to conduct research on at least a monthly basis compared to 87% in the post-survey.

There was a small increase in students' multimedia use. In the pre-survey, 57% of students reported they are asked to develop or present multimedia presentations and this increased to 65% in the post survey. Further, in the pre-survey, 28% of students indicated they were never asked to do this which dropped to only 16% in the post-survey. This reflects some of the focus group findings that both teachers and students became more comfortable with the computers throughout the school year and especially started utilizing some of the presentation tools more often.

Another possible explanation for the lack of changes between the pre and post BrightBytes survey data might not be related to the technology at all. During the focus groups, teachers did not view the technology as something that enhanced 21st century teaching and skills. Instead,

they expressed that 21st century competencies should always be included in teaching, regardless of whether technology is available or not.

> *"It's good teaching. Regardless if you have a laptop in front of you or you don't; the technology aspect is not really that big of a part of 21st century learning."* –Teacher

> *"Collaboration or knowledge construction should be within any pedagogy that a teacher has; so technology is just a small piece of it."* –Teacher

## RESULTS: STUDENT OUTCOMES

### EVALUATION QUESTION 4: HAS SCHOOL ENGAGEMENT IMPROVED SINCE THE IMPLEMENTATION OF ONE-TO-ONE?

Successful implementation of one-to-one programs can have positive impacts on student outcomes. One-to-one programs can relate to increases in student engagement and motivation (Penuel, 2006) as well as decreases in student behavioral issues (Lee, Huh, Lin, & Regeluth, 2018). There might be several reasons why one-to-one programs lead to increased engagement and decreased behavioral issues. One possible explanation is that one-to-one programs lead to increased personalized learning or a student-centered approach to learning (Lee et al., 2018). The novelty of using computers can also enhance student engagement (Harper & Milman, 2016).

We assessed school engagement in several different ways. First, we explored student responses on the annual climate survey before and after one-to-one implementation. We looked specifically at students' report of their engagement in school and their perception of how easy or difficult it is for them to manage their schoolwork. The focus groups also revealed important findings for school engagement. Last, we examined district attendance data to assess any changes in attendance after the one-to-one program was fully implemented.

> *"It has really changed the culture of our school: [the one-to-one program] has given it more of an academic tone to our school than it has been in years past."* -NR21 Teacher

#### STUDENT ENGAGEMENT

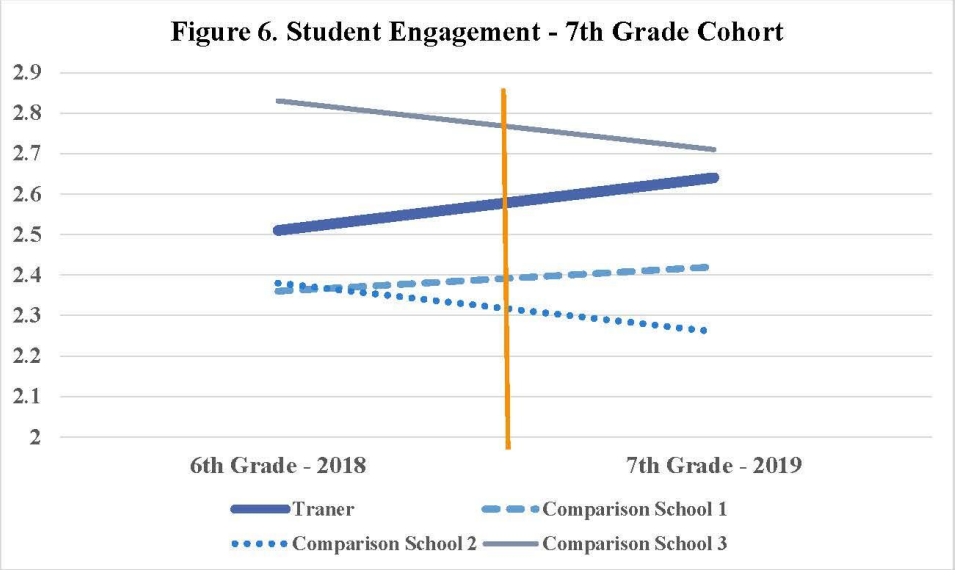
We first examined the 91 students in the 8th grade cohort who started at Traner Middle School in the 2016-2017 school year and took the climate survey all three years they were in middle school

Traner Middle School. Between 6th and 8th grade, there were no significant increases or decreases in student engagement. In 2017, 6th graders rated their overall engagement at 2.65. This dropped in 7th grade to 2.56 although this change was not statistically significant (B = -0.09, $p = 0.18$). In 8th grade, the same students rated their overall engagement at 2.61 which was not a statistically significant change (B = 0.04, $p = 0.18$). In other words, there were no changes in students' self-report student engagement ratings after the implementation of the one-to-one program during their 8th grade year.

We also examined student engagement trends from 6th to 8th grade in a similar middle school in WCSD. Overall, their self-reported student engagement scores significantly dropped between 6th in 8th grade. In 6th grade, students' average engagement rating was 2.8 which significantly dropped to 2.67 in 7th grade (B = -0.11, $p = 0.15$), and dropped again in 8th grade to 2.61 (B = -0.17, $p < 0.01$). Thus, although Traner 8th grade students did not report higher school engagement after the one-to-one program was implemented, they also did not report a decrease in student engagement that 8th grade students reported in a similar middle school.

Next we examined school engagement in the 7th grade cohort of students. One hundred forty students took the climate survey in 6th and 7th grade and reported higher student engagement in 7th grade (2.64) compared to 6th grade (2.51; B = 0.13, $p = 0.01$). That is, 7th grade students indicated they had more school engagement after the one-to-one program was implemented compared to the previous year.

Starting in the 2017-2018 school year, there were two more middle schools that served grades 6-8 that were similar to Traner Middle School. Thus, we assessed the trends from 6th to 7th grades in those schools. At all three of those schools, student engagement did not increase from 6th grade to 7th grade. Further, at one of the schools, there was a significant decrease in student engagement (B = -.012, $p = 0.04$). Therefore, while 7th graders at Traner Middle School were reporting higher levels of student engagement after the one-to-one program was implemented, 7th graders at other schools were reporting either no changes in engagement or a decrease in overall engagement. Figure 6 displays these trends for the 7th grade cohorts across the four schools (in each figure, the orange line shows when one-to-one program implementation occurred).




The results from the teacher focus groups revealed that teachers felt that students were more engaged with the schoolwork (when they weren't playing video games).

> "*I find that they are engaged, they compare things for what one student found to what others found, there's more communication happening in groups. They seemed to be focused, excited, motivated, and engaged.*" – Teacher

The teacher focus groups revealed that the technology allowed teachers to provide their students with more differentiated and individualized instruction. These findings are consistent with other research studies that suggest technology can enhance differentiated, student-centered learning (Lee et al., 2018).

> *"It's provided a lot of opportunities for teachers to differentiate students within the curriculum."* –Teacher

> *"I love that we can do so many things that are self-paced. I can assign an Ed Puzzle and it might take one kid 10 minutes to do it and it might take another kid 25-30 minutes to do it and so it can be self-paced – and they can watch it over again if they didn't get it. It's really great to have access to these individualized things because we have the laptops."* –Teacher

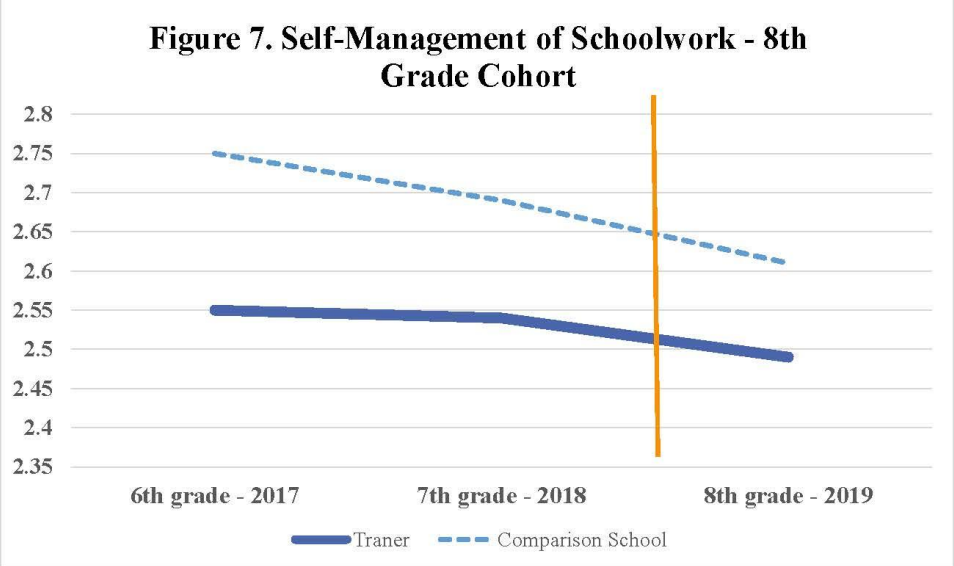
> "*We used it for individualized learning, higher kids and lower kids could differentiate own learning. Mainly we used it to learn at own pace, and figure out how deep or how shallow to go with our time.*" - Teacher

Overall, students expressed that learning with the computers could be more fun especially since it is something they have never had before. Teachers indicated that if students want to be organized and engaged in their schoolwork, technology provided opportunities to do so.

## SELF-MANAGEMENT OF SCHOOLWORK

Self-management of schoolwork (SMS) is an important social emotional competency (SEC) that assess how well students feel they are prepared for tests, how well they are able to finish their homework, etc. There were no significant changes in self-management of schoolwork for the 91 students in the 8th grade cohort.

In contrast to Traner Middle School, the students at the comparison school experienced a significant decrease in their self-management of schoolwork SEC. For these students, there was no significant change in SMS between 6th and 7th grade; however, in 8th grade these students were reporting significantly lower SMS scores compared to the previous years (B = -0.08, $p$ = 0.02). Even though Traner Middle School students did not report an increase in SMS between 6th, 7th, and 8th grade, they also did not report a decrease in those skills, which is not true for students at the comparison school. Figure 7 shows these trends.




In contrast to the school engagement results, there was no significant change in SMS between 6th and 7th graders for the 7th grade cohort (B = -0.11, $p$ = 0.07). Thus, this cohort of students did not

report an increase in SMS skills after the implementation of one-to-one. The results were similar for the three comparison schools: there were no changes in SMS competencies between 6th and 7th grade students.

Focus group results revealed that some students felt it helped them stay on top of their schoolwork. They indicated it was nice to see all of their assignments in one place. Other students liked getting immediate feedback and believed that it helped their learning.

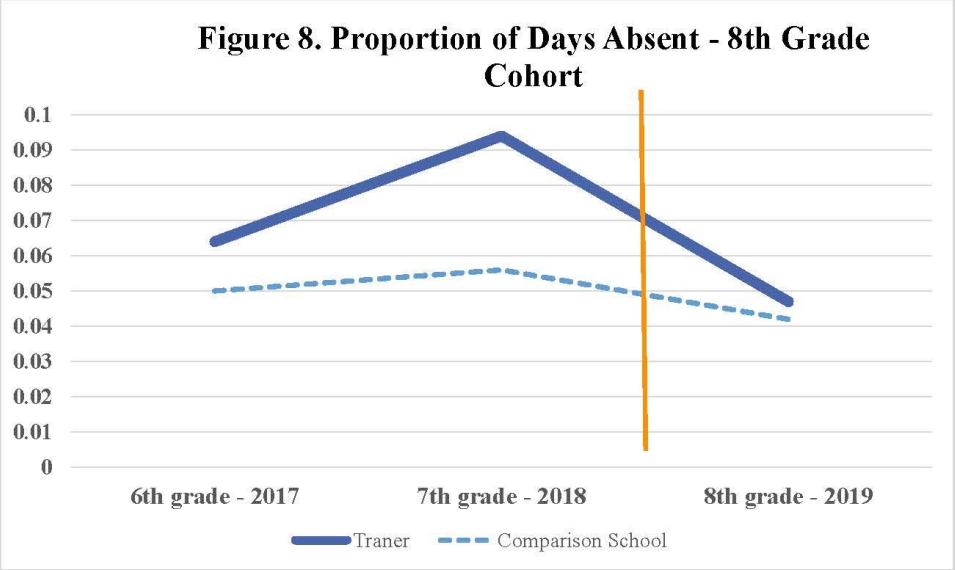
> *"One of the good things is that it helped me so some of my work that I have not completed – it showed me all my missing work; it helps getting assignments done."* – Student

> *"It got my grades up – it showed me what work was missing – and I could do it all and I got my grades up in that class."* - Student

> "*Great that students' work didn't get lost all the time. It was a lot easier for them to be organized and know what they were missing*." - Teacher

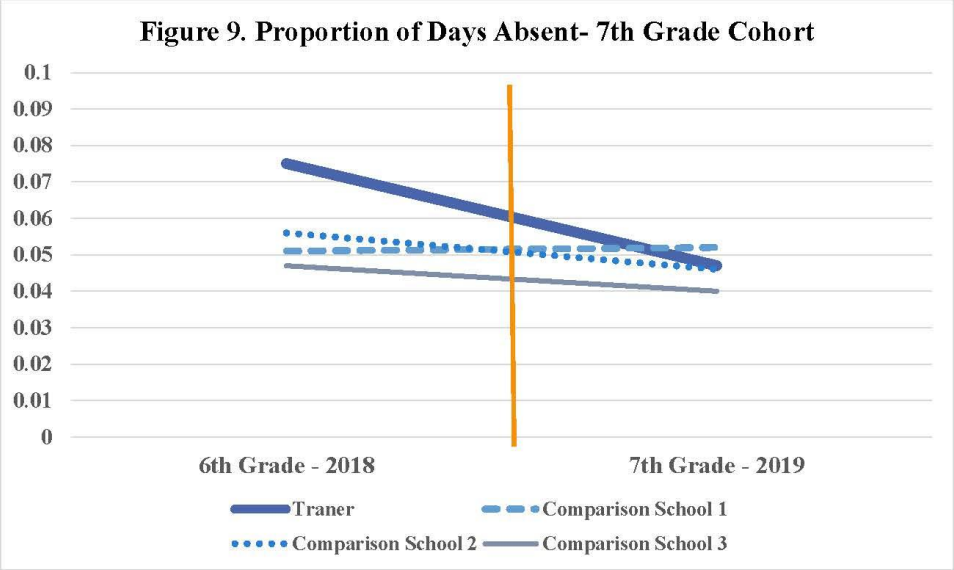
## ATTENDANCE

At Traner Middle School, there was a decrease in the proportion of days absent after the implementation of the one-to-one program. In the 2017-2018 school year when the 8th grade cohort was in 7th grade, students were absent 9.4% of total days enrolled on average. This decreased to an average of 4.6% in the 2018-2019 school year, during the first year implementation of one-to-one, which was a statistically significant decrease (B = -0.05, $p < 0.01$). There was also a significant decrease in the proportion of days absent at the comparison middle school, however, the decline was smaller (B = -0.01, $p < 0.01$). On average, students at the comparison school were absent 5.5% of the days they were enrolled in the 2017-2018 school year, and that decreased to 4.2%. Figure 8 shows these trends.




This pattern is similar for students in the 7th grade cohort. In the 2017-2018 school year, one year prior to full one-to-one implementation, 6th grade students were absent an average of 7.5% of the days they were enrolled. The following year (2018-2019 school year) when the students were in 7th grade, this number declined to 4.7%. Again, this decrease was statistically significant (B = -0.03, $p < 0.01$) indicating that these ***7th grade students were less likely to be absent after the one-to-one program was implemented.***

We also examined trends in absenteeism at the same three comparison schools. For students at the first comparison school, there was no significant change in absenteeism between the 6th and 7th grade school years (5.1% vs. 5.2%, $p = 0.9$). At the second comparison middle school, there was a significant, albeit small decrease between 6th and 7th grade (5.6% vs. 4.6%, B = -0.01, $p = 0.05$). Last, there was a small decrease for 7th grade students at the third comparison school between their 6th and 7th grade years (4.7% vs. 3.9%, B = -0.01, $p = 0.01$). ***Thus, three out of four of the schools all experienced a decline in absenteeism rates for 7th graders between the 2017-2018 school year and the 2018-2017 school year, the largest decline was for Traner Middle School students (an average decline of 2.8% of days absent; see Figure 9).***




"*I feel like the students have more ownership; if there are absences, a lot of the students know to go to Google Classroom or wherever their assignments are and they know how to find sites to know what the assignment was that day. So if they want to be on top of their education and their academics – they can*" – NR21 teacher

**School Engagement Key Findings**

- 7th grade, but not 8th grade students, reported an increase in student engagement during the first year of one-to-one implementation
- There were no changes in student reports of self-management of schoolwork; however, students at another school experienced a decrease in these skills
- Staff reported the devices made it easier for them to provide differentiated and more student-centered learning in their classrooms
- Both 7th and 8th grade students were absent significantly less during the 2018-2019 school year compared to the previous school year

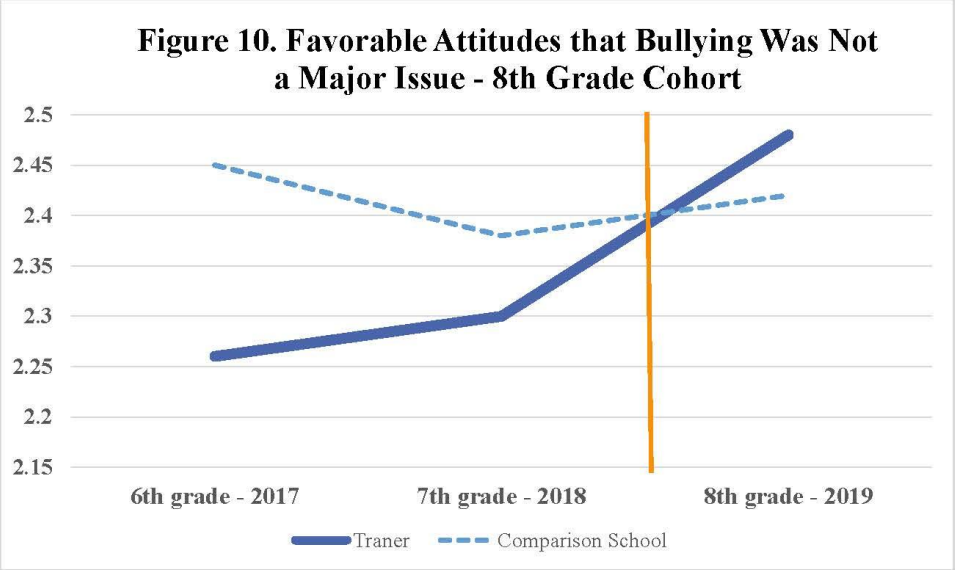
## EVALUATION QUESTION 5: HAS STUDENT BEHAVIOR IMPROVED SINCE THE IMPLEMENTATION OF ONE-TO-ONE?

Similar to school engagement, we examined student behavior in several different ways. We explored student climate survey results for both student perceptions of how students treat each other and perceptions of bullying at the school. In addition, we also examined teachers' perceptions of student behavior. Last, we explored trends in discipline reports to assess whether there was a decrease in student discipline events after the implementation of the one-to-one program.

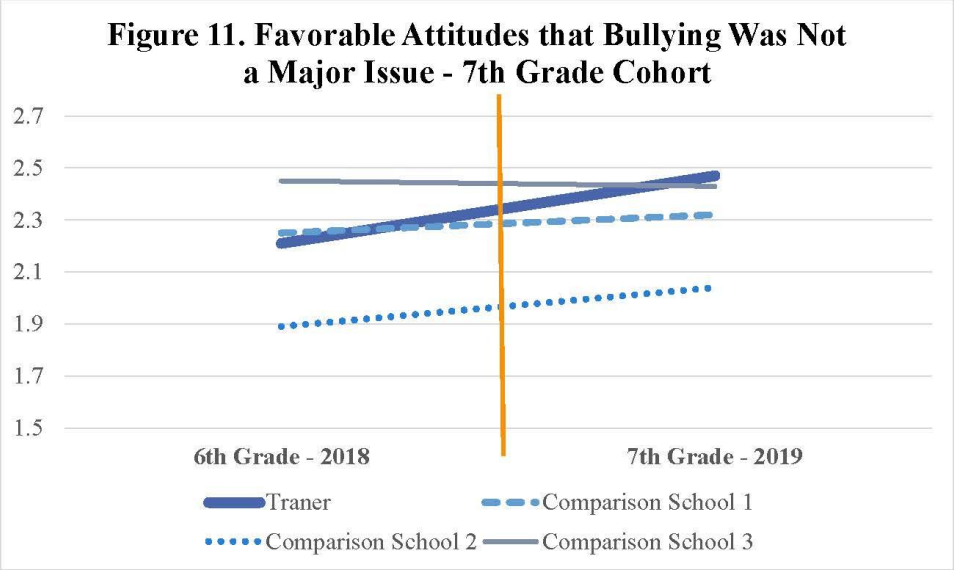
### BULLYING

We explored student responses to the climate survey data to assess trends in bullying. First we examined the 8th grade cohort of students (students who were in 8th grade during the first year of implementation). Compared to their 6th grade year (2016-2017 school year), students did not report any changes in their perceptions of bullying at the school in their 7th grade year (B = -0.03, $p$ = .69). In contrast, compared to their 7th grade year (2017-2018 academic school year), students reported that perceptions of bullying were more positive in their 8th grade year (B = 0.18, $p$ = 0.03), which is the same year the one-to-one program was fully implemented (see Figure 10).

In contrast, students at the comparison school reported no changes in bullying behavior at their school. More specifically, there were no changes in perceptions of bullying between 6th and 7th grade (B = -0.07, $p$ = .44), and there were no changes between 7th and 8th grade (B = -0.03, $p$ = .69). ***Thus, at Traner Middle School, 8th grade students reported more positive perceptions of bullying after the implementation of one-to-one, but the same pattern did not occur at a school that was not one-to-one.***

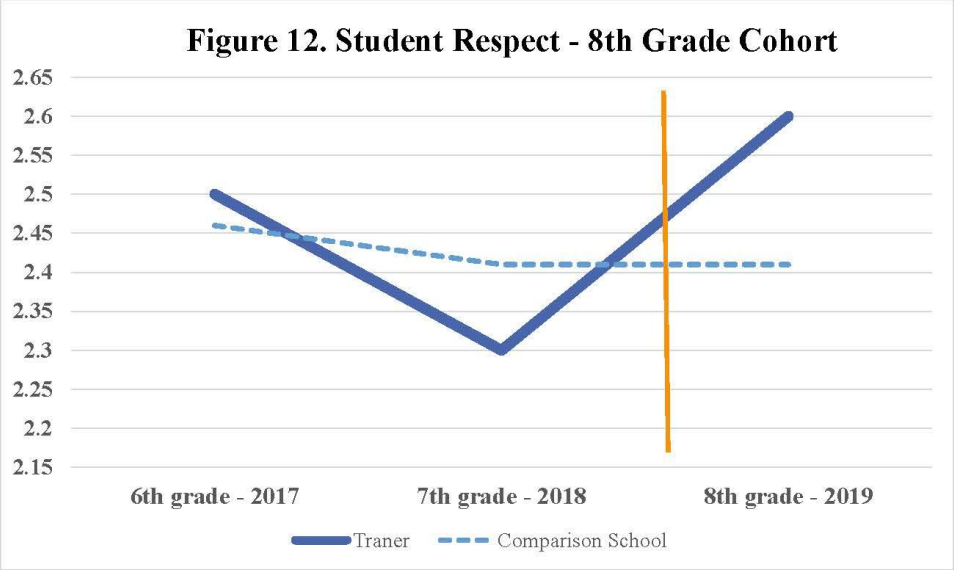



The pattern of results for perceptions of bullying are similar for students who started 6th grade in the 2017-2018 school year (or one year before the implementation of one-to-one). At Traner Middle School, students reported significantly better perceptions of bullying at their school between 6th and 7th grade, or before and after the implementation of one-to-one (B = 0.25, $p <$ 0.01). At the three comparison schools, there were no significant changes in perceptions of bullying. ***Thus, at Traner Middle School, students reported less bullying among students after the implementation of the one-to-one program but this was not the pattern at similar middle schools that did not have a one-to-one program (see Figure 11).***

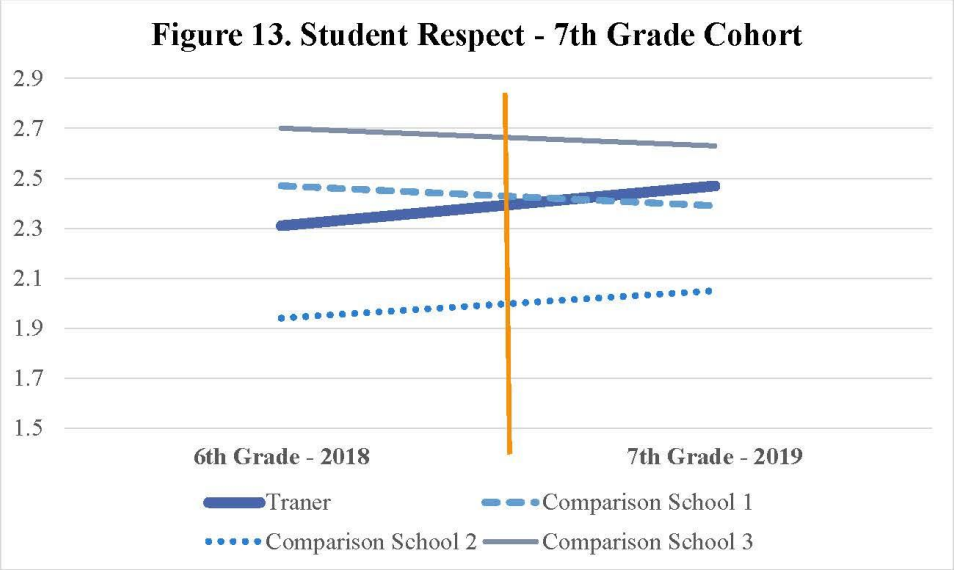



STUDENT RESPECT

For the students who were in 8th grade during the first year of implementation, there were no changes in their perceptions of student respect between 6th and 7th grade (B = -0.12, $p = 0.1$). ***However, between 7th and 8th grade, or after the one-to-one program was implemented, students did rate student respect higher (B = 0.22, $p < 0.01$).*** The comparison school did not show the same trends: there were no differences in perceptions of student respect throughout middle school for students who started 6th grade in the 2016-2017 academic school year (see Figure 12).

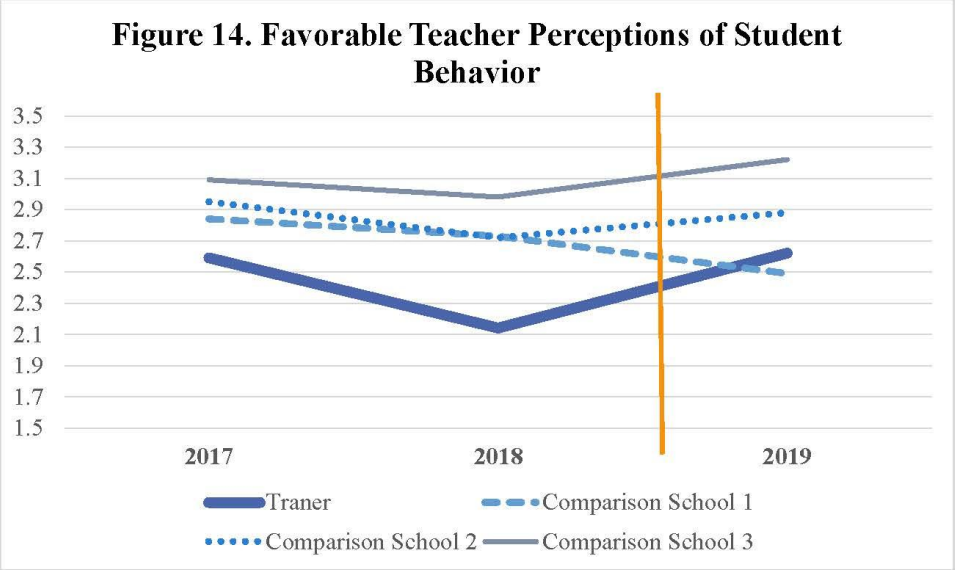



The results are similar for students who started 6th grade in the 2017-2018 school year. At Traner Middle School, between 6th and 7th grades, there was a significant increase in perceptions of student respect (B = .16, $p = 0.01$). ***In other words, after the one-to-one program was implemented, 7th grade students reported more student respect compared to their 6th grade year when the one-to-one program was not yet fully implemented.*** There are no significant changes in student perceptions at the three comparison schools (see Figure 13).




TEACHER PERCEPTIONS OF STUDENT BEHAVIOR

Results indicate that ***there was a statistically significant increase in teachers' perceptions of student behavior at Traner MS in the year that one-to-one was implemented*** (2.14 vs. 2.62). At the three comparison schools, there were no statistically significant changes in teachers' perceptions of student behavior (see Figure 14).

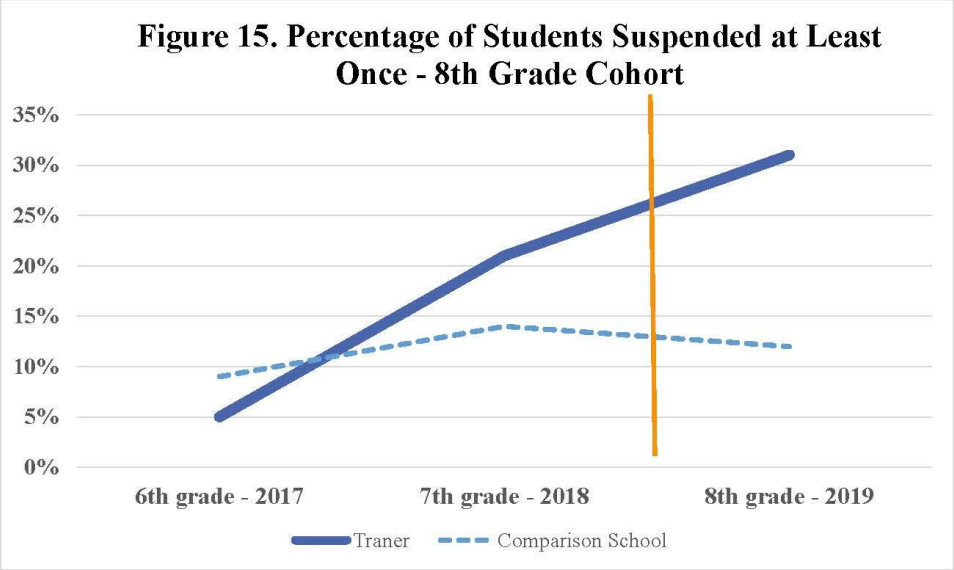



DISCIPLINE EVENTS

We ran a cross-tabs analysis to compare the number of discipline events that occurred in each year. For minor behavior incidents, major behavior incidents, and suspensions, we coded each student as 0 = no behavioral incident or 1 = at least one behavioral incident for each school year.

**8th Grade Cohort**

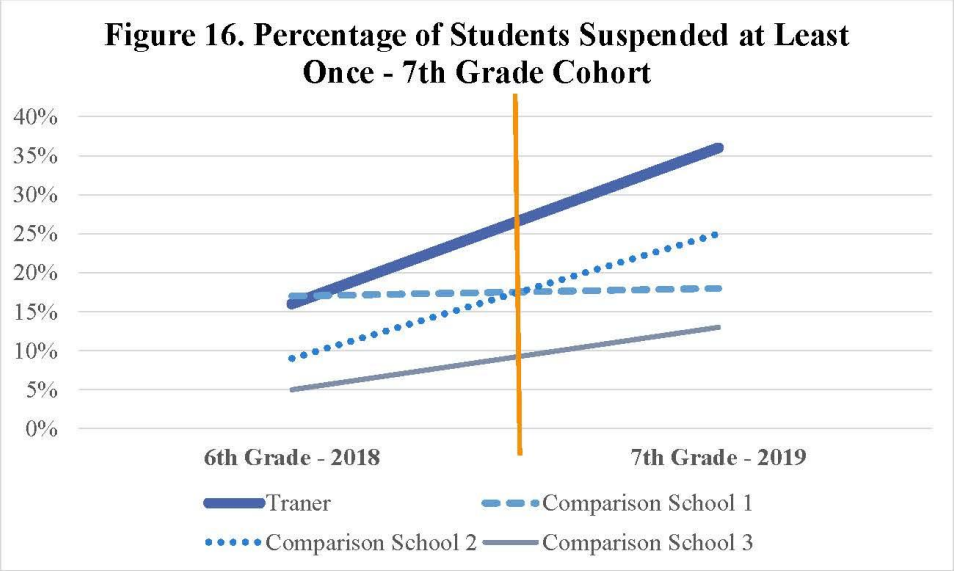
Students who were in 8th grade during the first year of one-to-one implementation experienced fewer minor behavioral incidents (47% of students) compared to their 7th grade year (62% of students) and their 6th grade year (61% of students). There was no significant change in the number of major behavioral incidents that students experienced in the first year of program implementation compared to their previous years in middle school. ***However, students in the 8th grade cohort were more likely to be suspended during the first year of program implementation. In the 2018-2019 school year, 31% of students were suspended at least once. This increased from their 7th grade year (21%) and their 6th grade year (5%). The comparison middle school, did not experience any changes in suspensions.*** In the 2018-2019 school year, 12% of students were suspended at least once compared to 14% in the previous year (not a significant decrease; see Figure 15).




**7th Grade Cohort**

***Students who were in 7th grade during the first year of one-to-one implementation experienced more minor behavior incidents compared to their 6th grade year.*** Sixty-nine percent of students experienced at least one minor behavior incident compared to 42% the previous year. At two of the comparison middle schools, there was no change in minor behavior incidents in between 6th and 7th grade (between the 2017-2018 school year and the 2018-2019 school year). The third comparison school did experience an increase in minor discipline events: 37% of 7th graders experienced a minor discipline event in the 2018-2019 school year compared to 18% the previous school year.

***At Traner, there was no change in the number of major behavior incidents during the first year of program implementation compared to the previous year. However, seventh grade students were more likely to be suspended at least once during the first year of implementation (38% of students) compared to the previous school year (16% of students).*** Two of the comparison schools also saw in an increase in suspensions from 6th to 7th grade: At one comparison school, in the 2017-2018 school year, 5% of students were suspended at least once which increased to 13% in the 2019-2019 school year. There was a similar pattern at another comparison school where 9% of 6th graders were suspended in the 2017-2018 school year which increased to 25% in the 2018-2019 school year. There were no changes in suspensions between 6th and 7th grades at the other comparison school middle school.




**Student Behavior Key Findings**

- 7th grade and 8th grade students reported a decrease in school bullying during the first year of one-to-one implementation
- 7th and 8th grade students reported an increase in student respect during the first year of one-to-one implementation
- Teachers at Traner MS reported that student behavior improved during the first year of one-to-one implementation
- There was an increase in suspensions at Traner MS during the first year of one-to-one implementation

## SUMMARY OF RESULTS

Overall, results from both program implementation and outcome indicate there were several successes about the first year of the one-to-one program at Traner Middle School. All students received a personal computer and 96% of teachers reported that students had access to the computers all of the time. All students completed a digital citizenship curriculum and the majority of teachers indicated they completed at least nine hours of professional development on

the one-to-one program. Both BrightBytes and focus group data suggest that the one-to-one program has excellent potential to allow students to gain 21st century skills.

Climate survey data, focus group data, and attendance data indicate an increase in school engagement during the first year of program implementation. Students who were in 7th grade during the first year of program implementation rated their overall engagement higher compared to when they were in 6th grade, or before the one-to-one program was implemented. Students at other similar middle schools did not rate their engagement as any different between the two years, or reported that their engagement decreased. Eighth grade students at Traner Middle School did not report an increase in engagement during the first year of program implementation, but 8th grade students at a similar middle school reported a decline in engagement. Further, students were less likely to be absent during the first year of program implementation compared to the previous school year.

Behavior data yielded mixed results. Both student and teacher climate data indicated that student behavior improved during the first year of one-to-one implementation compared to the previous school years. However, there were significant increases in the number of suspensions for both 7th and 8th grade students. This is inconsistent with research on other one-to-one programs which find that behavioral problems tend to decrease (Lee et al., 2018). As noted in the teacher focus groups, there was a lack of clear progressive discipline guidelines for computer use, which could be related to the increase in suspensions. Further, one teacher reported that students use their devices inappropriately during in-school suspension so much that it was not a punishment for them. Whatever the reason for the increase in suspension, it will be important to continue to monitor suspension rates for Traner Middle School students in future evaluations and to have clear behavioral guidelines around computer use.

Several important areas for improvement were identified. Both teachers and students indicated many students use the devices inappropriately. Students could be easily distracted by watching YouTube videos or playing games. Students also admitted the devices made it easier to cheat. Teachers wished they could block the games and other sites that were distractions. However, even with resources like Landschool, students were still able to find loopholes to get around any blocked game such as using the hotspot on their phones. In addition to inappropriate online use, some students did not treat the computers well and a small amount of students lost their computer privileges. This forced teachers to plan two lessons: one lesson for the majority of students who had their computers and one for the students who did not.

Moving forward, it will also be important to have very clear guidelines for computer use and expectations. Teachers were frustrated that progressive discipline regarding the computers was not clear from the beginning of the school year. Many students forgot their computers at home or did not charge the computers before coming to school and teachers did not have a clear way to address this. Students also noted the huge responsibility that came with having the computers. While this could be empowering for students, it was also burdensome at times. Having very clear

computer expectations with specific progressive discipline outcomes associated with those expectations, is important for any school implementing one-to-one.

Despite the barriers that Traner experienced in the first year of one-to-one implementation, there were a lot of successes. Moving forward, schools should ensure that teachers have discretion to decide when it is best to use the technology in their classrooms. As many teachers noted in the focus groups, the technology can be a very useful tool if it is used as a supplement to learning and not a replacement. Further, students do think the technology can be beneficial, but they do not want to necessarily use the computers all of the time. Research suggests that technology is most conducive the learning when it is *interactive* and used to work on projects with peers and teachers (Darling-Hammond, 2019). Thus, it is important to remember that *how* the computers are used in the classroom is key. Technology can be very beneficial for learning if used appropriately. It will be important to continually monitor the one-to-one program during the second year of implementation, as well as first year of implementation at several other WCSD sites.

In the current evaluation, we did not assess academic outcomes. Typically, one year of implementation is not sufficient time to see any meaningful academic changes. However, it will be important to assess academic outcomes in future evaluations. The relationship between one-to-one programs and academic outcomes is less clear. Some research has found no relationship between one-to-one programs and student reading and math test scores (Gulek & Demirtas, 2005). One study found that in a 4$^{th}$ grade classroom, literacy improved after the second year of one-to-one implementation (Suhr et al., 2010). One-to-one programs might also have a positive relationship with writing scores as students often use the computers for writing (Gulek & Demirtas, 2005). Future evaluations should link academic outcomes directly to implementation as better implemented programs tend to have better outcomes (Durlak & DuPre, 2008).

> *"It has equipped them with the ability that they might not have had because not all of them have access to technology at home. And I feel like they can go to high school now or college and understand how to organize their work, understand how to research, and understand how to use a digital tool to help them learn."* -NR21 teacher

APPENDIX

## WCSD Student Focus Group Protocol
## Traner MS NR21

***Introduction and Overview***

***[Introduce yourself and co-facilitator].***

Thank you for agreeing to talk with us today. We are working on a project to learn more about the one-to-one program that you have been using during this school year. As you all know, you were each given a computer at the beginning of this school year to use in your classes and for your homework. The main purposes of this program is to provide you all with a technology-rich education and promote 21st century learning skills. We are interested in learning how this program has impacted you. The purpose of this focus group is to learn more about what you have liked about this program, how you think it has affected your education, and where there might be room for improvements.

Remember, there are no right or wrong answers. You're the expert on how you feel and what you think.

This interview is confidential. This means that no other teachers, your principal, or any other staff will see your responses. This also means that everyone here must agree to respect each other's opinions and to keep in trust what is said here today. ***Does everyone agree to be respectful and to keep what is said today private?***

Please be completely honest. Only a team of outside researchers will look at your responses and will summarize the responses.

I would like to tape record this discussion. Tape recording allows me to concentrate on talking with you and not on taking notes, although I will sometimes write things down. ***Is it OK with you if I tape this conversation?*** [If a person is not comfortable, do not record].

Before getting started…

- Let's set the basic structure for the focus group:
  - Because our conversation will be recorded, I ask that everyone use first names only.
  - Make sure everyone has an opportunity to share. You are welcome to pass on any question you do not wish to respond to.
  - Please be respectful of what the other group members have to say. It is important to be courteous and wait for your time to share your opinion.

***Are there any questions before I start?***

I am now going to turn on the recording, which is used as a backup to our note-taking.

***Okay, let's get started. Let's begin with a round of introductions. Please tell us your first name and what grade you are in.***

- **"Tell us about the 1-1 program in your school and what, if anything, you have liked about it?"**
  a. How has the 1-1 program impacted how well you do in your classes?

   b. Do you think you get along with your teachers more, less, or the same as before you started using your own computer?
   c. Do you think you get along with your classmates more, less, or the same as before you started using your own computer?
- **"What do you find challenging about the 1-1 program, if anything?"**
   a. Are there any parts of the 1-1 program you do not like? If so, what and why don't you like it?
   b. Do you have any recommendations for how the program can be improved?
- **"What impact, if any, has the 1-1 program had on you, your approach to school, or the way you think about things?"**
   a. What, if anything, did you learn from the 1-1 program that you don't think you would have learned otherwise?
   b. Has the 1-1 program helped you enjoy learning or school more? Or do you like school just as before the 1-1 program?
   c. Has the 1-1 program helped you complete your schoolwork?
- **What is one thing that you want to change about this program and one thing you would definitely keep the same for next year?**

Thank you for all of your feedback today!

## WCSD Teacher Focus Group Protocol
## Traner MS NR21

***Introduction and Overview***

***[Introduce yourself and co-facilitator].*** Thank you for agreeing to talk with us today. We are here today to conduct focus groups to better understand the 1-1 initiative at Traner Middle School. We are interested in getting feedback from teachers on what is working with the 1-1 program and where there might be room for improvements. We are also interested in better understanding how it has affected your teaching and your perspective on how it has impacted students.

This focus group is confidential. We will be sharing the feedback we receive today with the Office of Information Technology but we will not include any personal names or any other identifying information in that report. Your feedback will also be included as part of a larger evaluation on the 1-1 program at Traner MS.

Please be completely honest. Only a team of outside researchers will look at your responses and will summarize the responses.

I would like to tape record this discussion. Tape recording allows me to concentrate on talking with you and not on taking notes, although I will sometimes write things down. ***Is it OK with you if I tape this conversation?*** [If a person is not comfortable, do not record].

***Are there any questions before I start?***

I am now going to turn on the recording, which is used as a backup to our note-taking.

1. **Tell us about how the 1-1 program is going at your school, and what, if anything, you have liked about it?**
    a. Did you feel you had enough training and support to successfully implement 1-1 in your classroom?
    b. How easy or difficult for you to understand and integrate 21st century competencies into your teaching?
2. **What have you found challenging about implementing the 1-1 program?**
    a. Technological issues?
    b. Issues transitioning from how you previously taught to the 1-1 format?
3. **In what other ways has the 1-1 program impacted your teaching?**
    a. Has the program made it easier or difficult to teach and manage your classes? How so?
4. **How do you think the 1-1 program has impacted students and their learning?**
    a. Have you noticed any changes in student behavior?
    b. Have you noticed any changes in student engagement?
5. **What recommendations, if any, do you have that would improve the 1-1 program?**

Thank you for all of your feedback today.

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