

Technology Plan

**Mount Diablo Unified School District**

July 1, 2015 - June 30, 2018



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Superintendent

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## Table of Contents

[\(link to guiding questions, criteria\)](#)

### Background and Demographic Profile

1. Plan Background
  - a. Duration
  - b. Stakeholders
  - c. Research
2. Curriculum
  - a. Current access and use by teachers
  - b. Current access and use by students (also includes replacement policy to ensure equitable access)
  - c. Goals and implementation plan for teaching and learning
  - d. Goals and implementation plan for student technology AND information literacy skills
  - e. Goals and implementation plan for student Internet safety and ethical use of technology (Includes CIPA compliance)
3. Professional Development
  - a. Summary of teacher and administrator skills and needs
  - b. Goals and implementation plan for professional development
4. Infrastructure, Hardware, Technical Support, Software and Asset Management
  - a. Existing resources
  - b. Needed resources
5. Monitoring and Evaluation
  - a. Overall progress and impact evaluation
  - b. Evaluation schedule

## **1. PLAN BACKGROUND**

### **Plan Duration: July 1, 2015 June 30, 2018**

The goals and time lines in the Mt. Diablo Unified School District Technology Plan will guide the District's use of technology, from July 1, 2015 through June 30, 2018. Many of the efforts described in this plan are already underway, but the District recognizes the need to continue investment into three important factors that support effective integration of technology into our classrooms: professional development for our teachers, access to technology in all classrooms, and a robust infrastructure that will support the increasing density of devices in our classrooms. Responding to student needs and to determine how new opportunities to improve technology integration will supplement and enhance the current program is our focus . Due to changing technologies and funding issues at the federal, state, and local levels, the MDUSD Technology Plan is subject to review, modifications and budget revisions. Thus, the technology-related goals identified in this plan, as well as their implementation, will be reviewed and modified, as necessary, on an annual basis by the district Technology Advisory Committee (TAC).

### **Overview and Demographics**

Nestled at the base of Mt. Diablo in the suburban East San Francisco Bay Area, the Mt. Diablo Unified School District can be characterized as a representative California microcosm. Mt. Diablo is one of the largest districts in the state of California, with over 50 school sites and programs. The district's statistics for ethnic/racial diversity, average class size, test scores, numbers of Limited English Proficient (LEP) students and the primary languages they represent, mirror those for the state of California as a whole.

### **Facts About the District**

Student Population (CBEDS, 2015): TK-12 32,328; Alternative education - 15.2% of enrollment.

District website: <http://www.mdusd.org>

### **Full/Part Time Employees**

1,531 certificated (teachers) and 987.5 classified (secretaries, custodians, bus drivers, etc.), 143 administrators

### **Size**

150 square miles, which includes the cities of Concord, Pleasant Hill, Clayton, portions of Walnut Creek and Martinez, and unincorporated areas, including Lafayette, Pacheco, and Bay Point.

## Schools

High Schools - 5

Continuation High Schools – 6; Alternative – 1; Special Education- 1; Community Day - 1

Middle Schools - 9

Elementary Schools – 28; Special Education– 3

Charter Schools - 2

## Enrollment Diversity

Our 2015 CEBEDS data indicates the student population to be: White (33.69%); Hispanic (41.66%); Asian (7.10%); African American (4.8%); Filipino (5.09%); Pacific Islander (0.78%); Native American (0.27%); Two or more races (3.75%); None Reported (2.83%). 22.3% English Language Learners of which 18.6% are Spanish speakers

## Stakeholders and Planning Process

Stakeholders		
Name	Position	Site
Rose Lock	Assistant Superintendent of Middle Schools	Contra Costa Mt. Diablo Unified
Joe Estrada	Director of Technology and Information Systems	Contra Costa Mt. Diablo Unified
Bill Morones	School Support Administrator	Contra Costa Mt. Diablo Unified
Susan Peterson	Site Administrator	Contra Costa Mt. Diablo Unified
Ann Tirrell	Program Specialist/ Educational Technology	Contra Costa Mt. Diablo Unified
Joshua Wittman	Director of Technology Support	Contra Costa Mt. Diablo Unified
April Bush	Middle School Site Administrator	Contra Costa Mt. Diablo Unified Foothill Middle
Cheryl Champion	Elementary Site Administrator	Contra Costa

		Mt. Diablo Unified Delta View Elementary
Chris Clausen	Middle School Site Administrator	Contra Costa Mt. Diablo Unified Diablo View Middle
Ryan Clason	High School Classroom Teacher	Contra Costa Mt. Diablo Unified Concord High
Carolyn Moore	High School Classroom Teacher	Contra Costa Mt. Diablo Unified Northgate High
Shauna Hawes	Middle Classroom Teacher	Contra Costa Mt. Diablo Unified Valley View Middle
Tracey Newport-Sholly	Elementary Classroom Teacher	Contra Costa Mt. Diablo Unified Fair Oaks Elementary
Diana Zimmer	Elementary Classroom Teacher	Contra Costa Mt. Diablo Unified Mt. Diablo Elementary
Abigail Sholly	Student	Contra Costa Mt. Diablo Unified Valley View Middle
Kyle Mueller	Student	Contra Costa Mt. Diablo Unified Ygnacio Valley High
Tandra Ericson	Assistive Technology Specialist	Contra Costa Mt. Diablo Unified
Patty Galindo	Technology Support Staff	Contra Costa Mt. Diablo Unified Walnut Acres Elementary
Jennifer Gabor	Instructional Technology Coach	Contra Costa Mt. Diablo Unified
Libby Ritthaler	Library Media Specialist	Contra Costa Mt. Diablo Unified Silverwood Elementary

Steve Bateman	County Office of Education Staff	Contra Costa
Eileen Walters	County Office of Education Staff	Contra Costa
Adrienne DeWolf	County Office of Education Staff	Contra Costa

**Planning Process**

A variety of stakeholders were involved in the development, review and modification of the proposed 2015-2018 Technology Plan. Requests were made to students, staff, parents and community members to take part in the process by joining the Technology Advisory Committee (TAC). The committee was first convened in March of 2012, and the members (stakeholders) of this committee are listed above. The committee met monthly from March 2012 and continues to meet five times a year, with the following purpose:

To monitor implementation of the Technology Plan, provide guidance to the district, and gather input regarding resources, professional development and services around student learning as it relates to technology and classroom technology integration.

All district administrators reviewed a draft of the technology plan in the fall of 2013. New district leadership in the fall of 2014 provided additional insights and the plan was adjusted and reviewed again by TAC. The Technology Advisory Committee will continue to meet to review implementation of and make modifications to the plan. The TAC minutes and agendas can be found under the Educational Technology section of the the Instructional Support page of our MDUSD website. The current Technology Advisory Committee Leadership team includes the following members:

- Jonathan Eagan, Assistant Superintendent of Middle Schools
- Joshua Wittman, Director of Technology Support
- Ann Tirrell, Educational Technology Program Specialist

**Overview of Educational Technology in the District**

The MDUSD Technology Plan has been designed to support the District’s commitment to innovation, connecting students to a variety of technological resources and expanding and enhancing learning across all content areas. This commitment not only expands student learning within the content areas but also ensures that students are technology users who have the skills needed to navigate in the changing world. The District is dedicated to integrating these technology, information literacy, and 21st Century skills into the curriculum and the content area standards in order to improve student achievement, develop lifelong learners, and prepare our children to successfully meet the demands of 21st Century society and a global economy.

## Relevant Research

The MDUSD Technology Plan is based upon sound models, literature reviews and research that provide evidence of how technology can impact student learning and improve teaching practice. A survey from the American Management Association, AMA 2012 Critical Skills Survey, expresses widespread consensus that our students must excel at the “four Cs”: critical thinking, communication, collaboration, and creativity as skills for employee development, performance measurements and hiring requirements.

Educators must be capable of providing all students with the essential 21st Century knowledge and skills necessary to succeed in life, career and citizenship. The District believes it is imperative that we address the changing needs of today’s society, workforce, and global economy. With that goal in mind, an extensive review of relevant research and literature has been summarized for continued consideration. One publication that was extensively reviewed was the New Media Consortium (NMC) Horizon Report. The NMC Horizon Report 2014 K-12 Edition examines emerging technologies for their potential impact on and use in teaching, learning, and creative inquiry of K-12 education. There are several key trends and developments in education and technology that were particularly pertinent to this plan and are summarized below along with how they support district goals (in italics):

### Rethinking the Roles of Teachers

- Using digital strategies in their work with students and acting as more of a guide/mentor
- Providing learning opportunities to students beyond the school day and walls
- Using social media and hybrid learning opportunities for students and for their own professional development.

### Increase Use of Blended Learning

- Offering online and blended learning opportunities to scaffold instruction and promote equity
- Addressing the range of needs present in classrooms and providing intervention and enrichment

- *Assess and expand student and staff access to tools and technology both in and outside of the school day, including access to online courses, in classroom instruction, and instruction in K-12 digital literacy and citizenship*
- *Provide teachers and administrators training and coaching to build capacity regarding how to use technology to support student learning*

There were several trends in the Horizon Report and other studies that are not fully supported by the current goals in this plan but warrant consideration for future technology implementation and revision of this plan:

- **Rise of STEAM Learning**--In recent years, there has been a growing emphasis on developing stronger science, technology, engineering, and mathematics (STEM) curriculum and programs, as these disciplines are widely viewed as the means to boost innovation and bolster national economies (The Growing Interest in STEM, 2015).
- **Increase in Collaborative Learning Approaches** -- Collaborative learning is based on the perspective that learning is a social construct utilizing activities that are generally focused around four principles: placing the learner at the center, emphasizing interaction and doing, working in groups, and developing solutions to real-world problems (Cornell University Center for Teaching Excellence, Engaging Students, 2012). Collaborative learning models are proving successful in increasing student engagement and achievement, especially for disadvantaged students (NMC, 2015; Yun-Jo & Reigeluth, 2011).
- **Bring Your Own Device (BYOD)**--While BYOD policies have been shown to reduce overall technology spending, they are gaining traction because they reflect the contemporary lifestyle and way of working. The integration of personal smartphones, tablets, and PCs into the workflow supports an on-the-go mentality, changing the nature of work and learning activities so that they can happen anywhere, at anytime (Steckner, 2015).
- **Makerspace**--As creativity, design, and engineering are making their way to the forefront of educational considerations, tools such as robotics, 3D printers, and web-based 3D modeling applications become accessible to more people. Makerspaces are increasingly being looked to as a method for engaging learners in creative, higher-order problem-solving through hands-on design, construction, and iteration (Greg Thompson, April 30, 2014).
- **Adaptive Learning Technologies**-- Software and online platforms that adjust to individual students' needs as they learn are referred to as adaptive learning technologies. New educational tools are now capable of learning the way people learn; enabled by machine learning technologies, they can adapt to each student's progress and adjust



content in real time or provide customized exercises when they need it. Many school leaders envision these adaptive platforms as new, patient tutors that can provide personalized instruction on a large scale (NMC, 2015). The California Assessment of Student Performance and Progress (CAASPP) assessment is based on this technology.

Challenges that need to be solved to realize the learning transformation in our schools:

- **Creating Authentic Learning Opportunities**--Immerse learners in environments where they can gain lifelong learning skills such as vocational training, apprenticeships, simulations, portfolio-based assessment and authentic learning pedagogical strategies. The importance of metacognitive reflection and self-awareness as cornerstones of authentic learning is underscored by advocates (Lombardi, 2007; MindShift, 2014). The challenge is how to incorporate experiential and hands-on learning opportunities in schools that authentic learning demands.
- **Integrating Technology in Teacher Education**--To prepare learners for a world that increasingly leverages technology, current and future educators need to continually sharpen their skills in the face of shrinking budgets (Tim Ham, 2015). The lack of adequate teacher education relating to digital skills is a challenge that is widely documented. The report "Educators, Technology, and 21st Century Skills," by Walden University revealed that the problem often begins at the initial training level; researchers cite that many teachers believe that their pre-service training did not prepare them well in either technology or 21st Century Skills (Grunwald Associates, 2010). Furthermore, on-the-job training often focuses on how to operate equipment without showing how to effectively incorporate it into instruction. This challenge is solvable because it is well understood, and solutions are already available. In the US, the Obama administration's ConnectED program is earnestly investing in improving the skills of teachers through support and training in using educational technology tools for improving student learning (ConnectED, 2015).

Blended learning is occurring in many of our classrooms with the growing use of Google Classroom, Edmodo, Wixie, Echo and Credit recovery programs. Some schools are piloting BYOD programs and policies. To address STEM integration middle and high schools have implemented robotics, and Project Lead the Way program. One elementary school has a Makerspace learning environment. Linked learning is being initiated at all of our high schools.

To address the challenge to integrate technology in all classrooms in the Fall of 2012 an Educational Technology Program Specialist was hired with School Improvement Grant (SIG) funds to support the five SIG schools and build district capacity in the area of educational technology within MDUSD. In collaboration with the School Support, Instructional Support

and Technology & Information Services departments, and the Technology Advisory Committee (TAC), this administrator coordinated site visits to numerous districts early in the adoption of educational technology to develop the district's vision for instructional technology.

To further build vision for teachers and administrators, teacher and administrator attendance to educational technology events such as Computer User Educator (CUE), Google Apps in Education (GAFE) and Apple events is actively promoted. As part of the Summer learning Academy a number of research-based workshops for teachers and administrators in the areas of Digital Literacy, Blended Learning, Flipped Learning, Open Ed Resources, GAFE, Teaching CCSS Literacy Standards with Technology, Digital Citizenship, ePortfolios, and Keyboarding for K-2 were developed.

Emerging trends point to one-to-one device learning environments in today's schools. Coupled with online applications, which can personalize learning, gather student data and engage more students, the potential of one-to-one educational technology to improve student achievement is significant (Empowering Learning, 2014-2017). To realize this within our classrooms, professional development, and infrastructure will be a multi-faceted shift in our school culture that encompasses board policy, the need for support from site administrators and improved teacher understanding. All sites will need Wi-Fi and a guest network. Our Acceptable Use Policy will need to be updated to allow our students to use their own mobile devices (BYOD), with teacher permission. We anticipate the use of this in classrooms to grow in the next three years and see the importance of upgrading our wireless system to the newest standards, placing an access point in every classroom and accommodating the higher bandwidth and speed requirements of online learning, Common Core testing and BYOD.

## **2. CURRICULUM**

### **District Overview of Classroom Technology**

The Mt. Diablo Unified School District policy calls for equitable access for every student to all resources. Every student has access to computers and/or specialized equipment, such as tablets, in their classrooms, libraries and/or in computer labs. The technology goals and objectives for student subgroups, such as Special Education and English Learners, are the same as for all students. Students with active Individualized Education Plans (IEPs) have access to appropriate technology (including assistive technology) as determined by the IEP Team and the students' IEP goals. English Learners also have appropriate access to the technology hardware and software needed to support their English language acquisition as well as their achievement of the academic standards. In addition, 25% of our schools have after school programs, which provide student access to technology-based learning resources. MDUSD is a large district, diverse in its

socioeconomic levels where schools receive a variety of financial support. These funding sources range from Federal Title I funding for our lowest socioeconomic schools to parent fundraising for the schools of high socioeconomic status. There are schools which lack both of these types of funding, resulting in an insufficient level of technology for these schools. The district continues to explore additional funding sources to support all schools to ensure equity of access for every student.

### **Teachers' Current Use of Technology in Classrooms**

All teachers are using a variety of hardware and software to enhance instruction and support student learning. Hardware includes desktop computers, laptop computers, mobile devices, interactive whiteboards, document cameras, and LCD projectors. Software and online resources include: GAFE, Wixie, Edmodo, ed1stop, Read 180, Read Naturally, Accelerated Reader, Lexia Learning, Reading A-Z, IXL Math, Imagine Learning, Read & Write, Type to Learn and Career Exploration. Teachers use technology tools to gather information, create lesson plans and instructional materials, and assess student learning.

Teachers at all levels have access to the Ed1Stop portal purchased by MDUSD with one-time MicroSoft Voucher funds in 2013-2014 and 2014-2015. Teachers and Librarians receive ongoing training in the use the different features such as Discovery Streaming Video, Workbook Online, World Almanac, Associated Press Images and Sounds, and Fact on File which supports the increase of informational text with the CCSS. Some schools at all levels have dedicated technology for ELL and intervention classes.

Library Media Centers are equipped with workstations utilizing the Destiny Library Manager to search an online catalog and for research. Library Media Teachers have been trained in information literacy and teach explicit web literacy skills during library time. There are computer labs and hands-on technology centers in each middle and high school staffed by credentialed teachers. Computer labs in elementary schools are staffed by teachers with support from instructional assistants and parent volunteers.

With the current district implementation of Aeries, teachers have been managing attendance, student grades, and communication. The district website includes resources for staff, as well as for the community. Each school maintains its own website, many of which provide staff contact information and subject-specific resource links. Currently, only a small percentage of teachers maintain web pages, although a majority of schools are now using Schoolloop. All teachers use email to communicate with colleagues, parents, and/or students.

Student assessment data is collected and managed through Online Assessment Reporting Systems (OARS), a web-based system that is provided to all schools. Teachers and administrators use OARS to disaggregate data and determine student progress to inform instruction. The use varies by level and content area.

### **Elementary**

At the elementary level presentation digital tools such as smartboards, document cameras and LCD projectors are in most classrooms. Teachers use these to engage student learning with video, ed1stop and other multimedia content, along with direct instruction. Some schools have teacher tablets that are used in various ways with classroom management apps, data collection apps, or as a diagnostic tool. Chromebooks and iPads for student use are integrated into some classrooms across the district. Some teachers are implementing the blended learning model using learning management systems (LMS) such as Google Classroom, Edmodo, or Wixie. Teachers are using engaging classroom management apps, interactive whiteboards and document cameras.

### **Middle School**

Much of what happens at the elementary level continues at the middle school level. All schools have adopted Google Apps For Education to blend the learning environment. All middle schools have multiple labs and some have carts of laptops, tablets or Chromebooks that are shared among classes. One middle school is developing Project Based Learning with the New Tech Network.

### **High School**

At the high school level, along with the dedicated technology courses, teachers in core content and other elective classes are using document cameras, interactive whiteboards and learning management systems to blend their classrooms. Some high schools have student devices for using GAFE and for internet researching. All high schools use technology for credit recovery. Teachers have the ability to assess student learning using OARS assessment software. In some high schools students take online common assessments frequently.

### **Students' Current Use of Technology in Classrooms**

MDUSD LCAP goal 1 states “all students will receive a high quality education with access to technology” with the ultimate objective to have all students college and career ready. To fully implement the CCSS college and career embedded technology standards our students, teachers and administrators need a reliable high density-bandwidth network. Between 2012 and 2014 Measure C and CCSS technology funds were used for upgrades so that elementary schools now have a 10MB connection, and middle and high schools now having a 100MB connection. As

the use of wireless devices increases in classrooms across the district we will need to fund further upgrades to our district's bandwidth.

### **Elementary**

At the elementary level three elementary schools have adopted GAFE and have their own school Google domain, and many more are using the district Google educational domain to blend their classrooms, with some instruction done online and some in the classroom. Where available, students use devices in their classrooms to work collaboratively and develop college and career skills. Using GAFE, students are creating documents, multimedia presentations, and web sites. Many elementary schools have iPads and use these for students to create videos and multimedia projects, and learn to annotate documents and images. Some students are using Kidblog for collaborative online writing. Two School Improvement Grant schools have video production equipment as part of the visual and performing arts programs in which video kits, greenscreens and iMac editing stations are used to develop student created movies. All elementary schools have computer labs where students spend time each week on drill and practice applications in math and ELA or for special projects. Many elementary schools have purchased Chromebooks that are either used in a one-to-one learning environment or shared between classrooms.

### **Middle School**

Much of what happens at the elementary level continues at the middle school level . All schools have adopted GAFE with their own Google domain or are using the district Google domain, to blend the learning environment and support students learning college and career skills. One middle school is developing project based learning with the New Tech Network. Many middle schools have purchased Chromebooks that are either used in a one-to-one learning environment or shared between classrooms.

### **High School**

At the high school level many teachers are using document cameras, interactive whiteboards and a LMS to blend their classrooms. Some high schools have student devices for using GAFE and for internet researching. Students in some science classes do interactive labs and simulations, multimedia presentations using Movie Maker, virtual dissections and tissue labs, digital recording of data, probeware labs, graphing with excel, and work collaboratively using tools such as Google classroom. Some math students are instructed using multimedia applications to better understand the graphical nature of mathematics using computer simulations. English students in high schools create presentations using PowerPoint, Prezis and other multimedia presentation software and research essay topics and evaluate source credibility. All high schools have dedicated technology courses or academies that use technology as the primary tool for teaching and learning.

## **Special Population Students**

Students with special needs have access to technology daily in the classroom, Library Media Center and computer lab. In addition, assistive technology tools such as Picture Exchange Communication System, mobile devices, Intelli-Keys, Intelli-Talk, and Boardmaker, are used to support student learning and instruction, according to Individual Education Plan (IEP) goals. There are currently three district Assistive Technology personnel to support students and provide professional development to teachers and staff in the area of assistive technologies.

## **Goals for Using Technology to Improve Teaching and Learning**

MDUSD's Education Technology Plan is guided by the principle that technology must help drive student achievement and is aligned with and supports overall District planning efforts as outlined in the Mt. Diablo Unified School District Local Education Agency (LEA) Plan and Local Control Accountability Plan (LCAP). The Board of Education recognizes that technology can greatly enhance the instructional program as well as the efficiency of District and school site administration. The Board also realizes that careful planning is essential to ensure the successful, equitable, and cost-effective implementation of technology-based materials, equipment, systems and networks. Under the leadership of the Superintendent of Schools, a team of over 2,600 highly experienced and dedicated teachers, support staff and administrators strive to provide a stimulating educational environment built around a shared vision: "Every Student, Every Day, Whatever It Takes." The mission is to nurture lifelong learners to reach their full potential as respectful, productive, and responsible contributors to the community at large.

## **Goals**

The District Local Control Accountability Plan (LCAP) indicates three overarching goals for all students to achieve the District vision.

**Goal 1:** All students will receive a high quality education in a safe and welcoming environment with equitable high expectations, access to technology, and Common Core State Standards that prepare them for college, career and ready to be adult members of their community.

**Goal 2:** Parents/guardians, family and community will be informed, engaged and connected as partners with MDUSD employees to support student learning.

**Goal 3:** High quality, culturally proficient, and responsive staff will be supportive of all students, respectful of all students' backgrounds, and invested in the education of all students.

## **Budget Support and Future Funding**

Our overall goal is to provide all students with a 21st Century learning experience based on the Common Core State Standards (CCSS) to prepare students for college, career and contributions in a changing world. We strive to improve student educational performance and eliminate identified achievement and opportunity gaps among students.

As part of the Measure C classroom enhancement process, a survey of instructional technology at all schools was done in the Fall of 2012. This data revealed an uneven distribution of access to technology for students in those schools which lack funding from special programs, grants or parent organization resources. From this data, the TAC made recommendations to the Board on how to proceed in spending the Measure C classroom enhancement funds. With some schools lacking the technology for all the students who must take the online California Assessment Student Performance and Progress (CAASPP), the Board approved an initial phase of Measure C expenditures to update those schools lacking in technology to administer this assessment.

The remaining classroom enhancement funding for all schools continues with groups of school planning, purchasing, training teachers and upgrading infrastructure over the next two-years. To assist schools in planning and managing the increasing technology in classrooms, site technology plans have been developed at each school as part of this phase of the classroom enhancement. These plans provide valuable information for future educational technology funding. The implementation of these site technology plans has created a process in which departments supporting schools in the integration of technology into classrooms have a workflow around needs, curricular change, purchasing, inventorying and downstreaming technology within our schools and district. These schools' technology plans can be found in this shared folder: <http://goo.gl/h7YVGc>. This folder will act as a means of curating all schools technology plans and will be available to all site administrators to encourage collaboration and implementation of educational technology in our district.

## **Goals, Implementation Plan and Activities Using Technology to Improve Teaching and Learning**

### **Goals and Activities**

Our goal is by June 2018, 100% of core subject teachers will use technology to improve delivery of instruction and to assist students in meeting language, math, science, and history/social studies standards as evidenced by the MDUSD Teacher Tech Skills Survey or other survey tool. To work toward this goal the following activities will occur:

- Utilize MDUSD funded, instructional technology resources (ed1stop-Discovery Streaming, GAFE, ) to help core subject teachers supplement instruction.
- Establish a district educational software/application committee to evaluate educational digital applications to be used district-wide.
- On-going sustained professional development and coaching in technology.
- Creation and utilization of classroom technology laden projects and class work.
- Distance learning systems, appropriate in the school environment, that will enhance or supplement current content and complete credit recovery.
- Expand and develop Credit recovery for all high schools.

Our goal is by June 2018, 100% of all grade K-12 teachers will utilize technology for differentiated instruction and will offer learning opportunities for all students through individual devices and/or web-based services. To work toward this goal the following activities will occur:

- Purchase, with district funds, state-adopted digital instructional materials and standards-aligned curriculum-based technology resources.
- Provide administrators and teachers with professional development for standards-aligned and educational technology resources.
- Librarians will provide leadership in identifying appropriate resources to be used by students for research within specific content areas.
- Educational technology staff will continue to provide site training on web-based resources and support teachers with technology integration.

Our goal is by June 2018, all K-12 students will complete at least two projects that meet the CCSS CCR W.6 (*Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others*) to assist them in meeting CCSS CCR and classroom technology integration objectives. To work toward this goal the following activities will occur:

- All schools will have adequate access to technology and connectivity so that every student in grades 1-12 experience at least two classroom technology integration units in the school year.



## **Student Technology and Information Literacy Skills**

As part of the MDUSD implementation plan student digital literacy and citizenship is part of each school's technology plan. The Program Specialist for Educational Technology provides site support in developing awareness around digital literacy and citizenship for all MDUSD schools with staff presentations, digital resources such as Common Sense Media (<http://goo.gl/qPcf00>) and Google Good to Know Digital Literacy and Citizenship (<http://goo.gl/mlkCU>) online curriculum, along with the newly developed district educational technology website MDUSD Ed Tech Unlimited on the MDUSD Staff Portal.

Per MDUSD's Board Policies 6162.6 and 6163.4, students are provided with written guidance on academic honesty, and copyright, fair use and student use of technology in the classroom. Policy 6162.7 addresses technology in instruction, outlining the process by which the district will select technology-supported instructional materials based on alignment and support of the curriculum. Additionally many elementary schools and all middle and high schools provide student handbooks and/or student planners which outline academic honesty in all academic domains, including technology use. Within these materials are sections devoted to internet usage, plagiarism, and academic integrity including consequences for abusing given privileges.

### **Goals and Activities**

Our goal is by June 2018, all K-12 MDUSD students will demonstrate technology and information literacy skills, as defined by the International Society for Technology in Education student technology standards (<http://goo.gl/5JC4e9>). To work toward this goal the following activities will occur:

- Explicitly teach information literacy such as effective web searching, keyboarding, file types and cloud computing with resources such as Common Sense Media (<http://goo.gl/qPcf00>) digital citizenship online curriculum and Google's Digital Literacy and Citizenship curriculum-Good to Know (<http://goo.gl/mlkCU>).
- Explicitly teach creative credit and copyright using Common Sense Media Digital Citizenship online curriculum.
- MDUSD Educational Technology team will provide and maintain a district online resource to support teachers in teaching digital citizenship: MDUSD Ed Tech Unlimited's ([bit.ly/EdTechUnlimited](http://bit.ly/EdTechUnlimited)) digital citizenship web page.
- MDUSD Educational Technology team will train teachers on use of technology and information literacy using the iUSE Tech ([bit.ly/iUseTech](http://bit.ly/iUseTech)) cycle of ed tech support.

- Establish criteria for evaluating students' information literacy skills.

### **Internet Safety and Children's Internet Protection Act (CIPA) Compliance**

MDUSD has a Technology, Network and Internet Services Student Responsible Use Policy (RUP) that is signed by each student and parent at the beginning of each new school year. The district's Internet Use policies and practices reinforce the importance of technology use in school for educational purposes only, reduce the potential for misuse and increase the detection of misuse through effective supervision and monitoring. All parents and students must sign the Responsible Use Policy (RUP), which has general rules about the use of electronic devices in the district. Three separate RUPs are available, K-2, 3-5, and Middle/High School, with increasing levels of accountability and responsibility. The RUP will need further updating by district staff, administrator and teachers to include policies for BYOD, Google Apps, cell phones, instant and text messaging, cell phone cameras, mp3 players, and devices brought from home.

As a district, MDUSD will use contemporary information to communicate and educate students and teachers about cyber safety and cyberbullying. Cyber safety refers to general safety and privacy while online. Cyber bullying refers to any type of bullying using the Internet, interactive devices, digital technologies or mobile phones. All parents and students must sign the Responsible Use Policy (RUP), which has general rules about the use of electronic devices in the district in alignment with AB 307. While we recognize that students have access to a number of electronic communication devices such as computers and cell phones off school grounds, it has become necessary to ensure that they understand how to properly use these devices and that they understand their actions off school grounds can still be subject to disciplinary action if they discriminate, harass, intimidate, bully, humiliate, torment, or otherwise cause distress to another student using technology. It also has become necessary to help students understand how to safely navigate the Internet in order to remain safe online. In addition, rules for electronic signaling devices (cell phones, PDA's, etc.) currently exist within the Parent Information Packet explaining what is and isn't allowed. The RUP provides guidelines that regulate inappropriate/appropriate device usage during the school day, and that facilitate understanding and best practices in regards to technology use around the district.

A web filter is used in MDUSD to provide online student safety. This filter is set to reject web content that is obscene, contains pornography, or is otherwise harmful to minors, so that it constitutes a CIPA-compliant technology protection system.

### **Goals and Activities**

Our goal is by June 2018, all K-12 MDUSD students will demonstrate grade-level ethical use of technology skills, as defined by the International Society for Technology in Educational (ISTE) student technology standards (<http://goo.gl/5JC4e9>). To work toward this goal the following activities will occur:

- Explicitly teach internet safety using Common Sense Media Digital Citizenship online curriculum.
- Explicitly teach internet privacy and security using Common Sense Media Digital Citizenship online curriculum.
- Explicitly teach students to reflect on how they can use intrapersonal and interpersonal skills to build and strengthen positive online communication and communities using Common Sense Media Digital Citizenship online curriculum.
- Explicitly teach students the concept of digital citizenship and digital ethics, having them reflect on their online interactions using Common Sense Media Digital Citizenship online curriculum.
- Incorporate ethical use of technology into academic areas, to include citation of sources, plagiarism, pictures, text, images, music and multimedia files.
- MDUSD Educational Technology team will provide a district online resource to support teachers in teaching digital safety, ethics and security: MDUSD Ed Tech Unlimited's ([bit.ly/EdTechUnlimited](http://bit.ly/EdTechUnlimited)) digital citizenship web page.
- MDUSD Educational Technology team will train teachers on use of technology and information literacy using the iUSE Tech ([bitly/iUseTech](http://bitly/iUseTech)) cycle of ed tech support.
- Establish criteria for evaluating students' appropriate and ethical use of technology skills.

### **3. PROFESSIONAL DEVELOPMENT**

#### **Needs for Professional Development**

In 2014-2015 a MDUSD Teacher Technology Skills survey was done to inform the district in their support of teacher's growth in technology integration. The survey helps identify how well prepared teachers are to integrate technology in meaningful ways. It also helps identify the technology professional development topics that teachers want and need. From this data the Educational Technology team has created scaffolded workshops and online resources to meet all levels of teacher technology proficiency.

Data collected from the MDUSD Teacher Technology Skills Survey shown in Appendix A indicates clearly that the MDUSD teaching staff needs well coordinated professional development in how to effectively integrate technology into classrooms. This survey collected data from over 700 MDUSD teachers from October 2014 - February 2015. Data indicates that over 70% of MDUSD teachers are not confident to instruct in the area of digital literacy and citizenship. Over 60% of teachers need help planning, executing, and assessing technology lessons. In contrast, over 40% of teachers use technology for drill and practice. Over 70% of teachers rate themselves as novice to having no skills in using multimedia editing and authoring tools, and 74% in using Learning Management Systems. In the area of professional development 89% of teachers are somewhat to very interested in receiving professional development using Google Apps for Education (GAFE). 76% of teachers are somewhat to very interested in receiving professional development using ed1stop and teaching keyboarding skills. Over 50% of teachers indicated they need basic technology skills professional development. Annual survey of teacher technology skills and needs will provided data for future educational technology allocations.

### **Teachers**

Mt. Diablo Unified District has 1,531 credentialed teachers who demonstrate a broad range of technology skills. Each site has an assigned Technology Integration Leader (TIL) who is a credentialed teacher that supports the integration of technology into instruction. To support the integration of technology within the Common Core State Standards implementation, the district has hired a School Improvement Grant (SIG) funded, Educational Technology Program Specialist. The district has hired two district instructional technology teacher on special assignment (TOSA) to support teachers' integration of technology which is funded through Title II. The Educational Technology Program Specialist, along with the TOSAs and TILs currently provide instructional technology professional development for MDUSD teachers during staff meeting, after school, during day-long workshops, and Summer Learning Academy. This educational technology team has also developed online "anytime" professional development website, wikis and videos and by invitation, in class demonstration lessons by teacher invitation.

### **Administrators**

Mt. Diablo Unified School District has 187 Administrators who each demonstrate a broad range of technology skill sets. During the past two years the district Educational Technology Program Specialist has created resources to assist principals and teachers. In 2012-2013 an Instructional Technology (<http://mdusedtech.org/>) website was created that is a clearinghouse of digital content for schools. That same year an Educational Technology page was added to the MDUSD administrators' wiki to provide up to date resources of the instructional technology used within

the district. During the 2013-2014 school year a MDUSD Teacher Wiki (<http://goo.gl/NYJ2p0>) was created as a one stop place for all instructional resources. The teacher wiki has an extensive Educational Technology (<http://goo.gl/5exjxP>) page. During the spring of 2014, the MDUSD Learning Technology (<http://goo.gl/Lj7Tf8>) website was created and introduced to administrators at their welcome back day in August 2014. This website includes digital literacy and citizenship scope and sequence resources, CCSS CCR standards, 21<sup>st</sup> Century skills maps and other relevant educational technology resources. In 2015 the Educational Technology Team created the MDUSD Ed Tech Unlimited website ([bit.ly/EdTechUnlimited](http://bit.ly/EdTechUnlimited)).

Additional support will be necessary to increase the proficiency of teachers and administrators use of instructional, assessment, special education, record keeping, equity and communication technologies. To provide this support there must be a greater collaborative effort by multiple departments, including but not limited to, the Educational Technology Administrator, School Support, Instructional Support, Student Services, English Learners Services, Technology and Information Services, Special Education and Equity.

### **Classified Staff**

To ensure that all staff can perform their assigned duties of their position classified staff training is needed. This training must include software and programs supporting the student information system, financial system, email, data warehouse and additional systems such as GAFE, required to maintain and provide support to employees, parents and students. These supports uphold the effective implementation of the District's goals and the commitment to enhanced school-to-home communication.

### **Goals and Implementation Plan**

We must have thoughtful planning of educational technology integration that is coordinated with change in instructional practice and ongoing investment in staff development that maximizes the teacher's ability to provide students with a 21st century learning environment. Installation of expensive technology is not cost effective without strong staff support and demonstrated need. The goal of this plan is to help move the use of technology beyond the drill and practice or consumption of technology to that in which students are creators, able to work safely and effectively online publishing and communicating.

**Goal:** Teachers and administrators will receive adequate training and experience to proficiently and effectively utilize technology to enhance instruction and provide 21st century learning experiences for all students. Implementation steps to achieve this goal:

- Survey teachers, students and administrators technology skills and review along with District initiatives to plan short-term and long-term priorities for professional development.
- Provide district-wide staff development opportunities, addressing different teacher learning styles and providing teachers with training through a variety of technology-based resources, such as Chromebooks, mobile devices and tablets, video, web-based instruction, discussion groups, and peer collaborations.
- Deliver district-wide professional development trainings focused on creating technology-enhanced student assignments, supporting student information literacy, and addressing digital citizenship and online safety.
- Provide and support site-based professional development, facilitating learning communities focused on integrating technology into core content and curriculum.
- Develop and deliver workshops and trainings that use technology to enhance the teaching and learning of the Common Core.
- Provide training for supplemental programs for intervention, enrichment, and extended learning opportunities.
- Provide teachers opportunities for training on assistive technology that supports the needs of special and diverse learners.
- Provide digital citizenship training for teachers, administrators and Librarians.
- Provide training for staff and administrators on free Web 2.0 tools and Google Apps to support and extend learning. This may include Google Classroom, Google Drive (Docs, Forms, etc.), Google Sites and applications found in the Chrome Web Store.

#### **4. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT SOFTWARE AND ASSET MANAGEMENT**

##### **Technology Purchasing Process & Standards**

Many technology items can be purchased through the MDUSD purchasing website. There are hardware and software standards in regard to what items can be purchased which allow the district to provide support in a efficient and cost effective manner for schools. More information regarding these standards, as well as purchasing and donation information can be found here:

<http://www.mdusd.org/TIS>

When technology items are purchased, they are routed through the MDUSD warehouse, where items over \$500 are inventoried and asset tags are applied prior to site delivery and setup.

## **Existing Resources**

### **Technical Support**

Most devices bought through the MDUSD purchasing website have a warranty, although general support is provided by Technology & Information Services (TIS) staff. MDUSD has a Help Desk which provides some support for technology users in the district. In addition to the Help Desk team, each school site receives support from a centrally-funded, technician.

Recently, it was announced that more district-funded tech time was going to be allocated to schools. With the new allotment of hours, tech time is being distributed by the following method:

- Smaller elementary schools (enrollment under 500) would receive roughly 6 hrs a week.
- Larger elementary schools (enrollment over 500) would receive roughly 8 hrs a week.
- Nine middle schools would receive roughly 2 days a week.
- Six high schools would receive roughly 3 days week.

These district-funded techs serve as the point person for technology troubleshooting and project planning.

In addition to district-funded tech time, many schools also fund additional tech time through other funding. Almost all of these positions are part time, and approximately half of MDUSD schools receive this additional support.

### **Computer Hardware**

Teacher and student access to technology is available in classrooms, library media centers, and computer labs. All comprehensive schools have at least one stationary or mobile computer lab, and schools with student enrollment over 500 have at least two computer labs. A majority of the devices on the MDUSD network are for student use, with a rapidly growing number of them being mobile devices. Traditionally, most of the computers in our schools were found in stationary computer labs, but over the past year or two, iPads, Chromebooks and mobile laptop labs are being purchased more than desktop computers.

Computer totals vary from about 9,500 to about 16,000 district-wide, depending on which types of devices to include in the counts (staff versus student devices, new versus older devices, etc.). Students have the most devices, followed by teachers and then other staff. Roughly one third of student devices are more than 5 years old, while teachers and staff tend to have somewhat newer computers. Overall, most devices are running Windows, but for students, Chromebooks are

quickly becoming the preferred device for procurement. Apple computers are found in small numbers, but iPads are frequently used as secondary devices for teachers, who usually have a Windows desktop or laptop.

Schools are responsible for most costs associated with hardware repairs and/or replacement on their out-of-warranty technology. Most traditional laptop and desktop computers come with a three year warranty, while Chromebooks and iPads are usually covered under a one year warranty. Roughly half of the devices being used in MDUSD are no longer under warranty.

### **Current Network Infrastructure and Internet Access**

MDUSD Internet access is obtained through the Contra Costa County Office of Education (CCCOE), which is the Internet Service Provider (ISP) for MDUSD. All schools have a fiber connection to their site, and the District's wide-area network (WAN) is provided by AT&T's Opt-E-Man service. After upgrading all of the schools to fiber, the elementary schools have a 10MB connection, middle schools have 100MB and high schools have 100MB back to the district office. The fiber connection from the district office to the CCCOE is currently at 1GB.

Through the Measure C Bond projects, most classrooms received a variety of network infrastructure upgrades to classrooms, including network cabling and wireless. These upgrades supported most traditional classrooms having seven network drops, and every other classroom having a wireless access point installed. In addition, all schools had HP switching equipment installed between the 2012-14 school years, with a majority of network rooms, generally referred to as intermediate distribution frame (IDFs), being reconnected by 10GB fiber to one another.

All MDUSD schools have servers on site that provide resources such as network printing, file hosting and antivirus monitoring, etc. A majority of these servers are running Windows Server 2008 and are outside of their warranty coverage.

### **Network Security**

The integrity and security of MDUSD electronic data is of utmost importance. To this end, TIS regularly evaluates methods to increase server, LAN, and WAN security. As part of the network security process, the following security practices have been implemented:

- Antivirus software has been installed and regularly updated on the district email server and on all other servers and workstations.
- Internet content filtering has been applied to provide safe Internet access for students and staff.
- An Internet firewall has been installed to prevent outside penetration of the network.
- A separate spam firewall has been installed and is updated regularly.
- SafeConnect's Impulse, a network access control (NAC) solution, was recently purchased to address wireless security on the network



- Network scanning tools are used regularly to prevent and investigate threats to district networks

### **Telecommunications and Surveillance Systems**

As of Fall 2015, all MDUSD schools have had their aging telephone/voicemail systems replaced either through the 2002 or 2010 Measure C bond. All MDUSD schools have security cameras included as part of their surveillance system.

### **Email Communication**

MDUSD provides email addresses for all of its employees. Use of email to communicate is an expectation of all district staff. All administrative communication from the District Office is distributed via e-mail, using Microsoft Exchange 2013.

### **Online Resources & Software Packages**

There are likely too many online resources and software packages being used in MDUSD to realistically list here. The following is snapshot of some of the more frequently used resources in our schools.

#### **Microsoft Office**

MDUSD has adopted the Microsoft Office Suite of software as the standard for all instructional computers. All computers running Windows, regardless of whether they are for staff or student use, should have the suite installed.

#### **Student Information System**

The MDUSD student information system, Aeries, is the data repository for student demographics, discipline, grades, transcripts, attendance, and testing. Most state and federally mandated data is stored and reported through Aeries.

#### **Special Education Information System (SEIS)**

MDUSD uses an additional system called Special Education Information System (SEIS) that serves our special education students in regards to data, including items such as Individualized Education Plan (IEPs). This is an online system that receives exports of student data from Aeries.

#### **Online Gradebook and Student/Parent/Guardian Portal (HomeLink)**

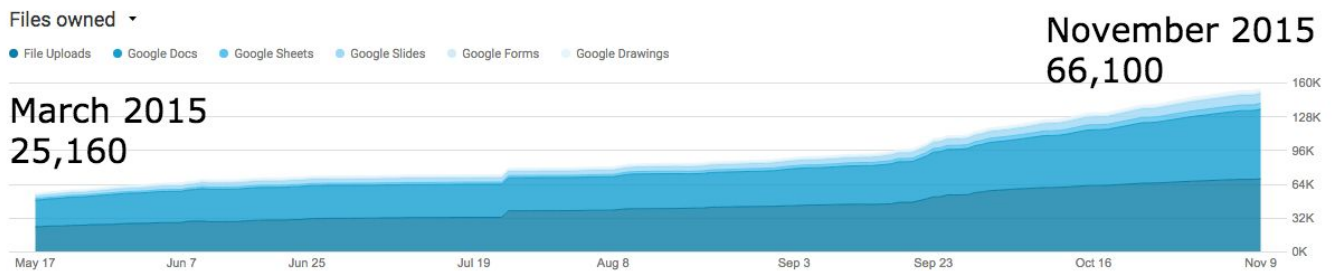
Aeries supports school/home communication through its web-based gradebook system called HomeLink Parent Portal. All teachers take attendance through ABI and are able to look up a variety of demographic and testing information about their students. Teachers at the secondary level use the gradebook feature. In addition to viewing their gradebooks and classroom

assignments, students and guardians recently have had the ability to submit online course requests and register for the school year at some school sites.

## Google Apps

Prior to the establishment of the MDUSD Google educational domain in 2014, ten schools created their own domains. One of the challenges of having individual school domains is when students move from elementary to middle or middle to high school. Student work between these domains requires some coordination and human capital. Ultimately, the district may want to look to establish a single district-wide Google educational domain so that student work can flow naturally as the students move through grade levels or from school to school.

The use of the Google Apps for Education within our MDUSD Google domain has seen an significant growth. The graph below, taken from the administration console of our MDUSD Google domain, indicates a steady growth in usage of these digital tools by students and teachers.



## Online Assessment Reporting System (OARS)

One of the online systems available to all MDUSD schools is OARS. OARS facilitates the collection, reporting, and analysis of periodic assessment results readily available. Teachers are able to modify instruction based on assessment results, and school and district administrators can plan appropriate professional development and support, based on data provided.

## ed1Stop Portal

MDUSD is providing ed1stop subscriptions to all schools. ed1stop, a service provided through the Contra Costa County Office of Education (CCCOE), acts as a gateway to both subscription-based services and free educational websites, including Discovery Education

Streaming and BrainPop, as well as teacher tools, digital media, curriculum support, research/reference tools, and professional development opportunities.

## **Websites**

Almost all MDUSD schools, including the district office, have their websites hosted on Schoolloop. There are monthly Schoolloop webmaster training classes at the district office that cover how to start building a website. Usage varies greatly among the schools in regards to how frequently content is updated online, as well as who has access to post content.

## **Library Software**

All school libraries use automated circulation and catalog software (Destiny) to support classroom instruction. In addition, Destiny has recently been used to support textbook ordering and some asset management.

## **Needed Resources**

### **Requested Computer Hardware**

MDUSD would like to see student devices approaching a 1:1 ratio. With approximately one third of student devices being over 5 years old, a procurement plan that aligns to the device's lifecycle, as well as usability and warranty support, and that would guide when these devices should be replaced is needed.

Schools have traditionally paid for classroom technology out of site budgets. At the moment, many schools are receiving an influx of classroom technology through the Measure C Bond. Although, most of the devices being purchased come with a warranty, schools often use them well beyond their warranty coverage. In addition to a budget for replacement parts, there is currently no replacement plan for the equipment that is being acquired through the Measure C Bond.

### **Requested Technical Support**

There has been a substantial increase in the amount of technology use and hardware that requires support from Technology & Information Services over the past few years. With the influx of new equipment, through the Measure C Bond, there will also be a growing need for ongoing technical support for the additional devices running on our network, as well as the higher demands for increased up-time. We will need to increase the number of MDUSD-funded Network Techs from in order to ensure that the hardware, local area networks (LANs), wide area networks (WANs), and peripherals function adequately and that problems are addressed within an acceptable

response time. With more workflows going online, schools are requiring greater up-time in regards to the devices in front of them and the networks that they use.

### **Requested Network Infrastructure and Internet Access**

With the increase in devices on our network, and the possibility of student bring your own device (BYOD) and one-to-one proposals, there will be a need to further improve on network infrastructure. Schools will need to get more wireless access points and switches to address increased demand and better availability. There have also been a number of locations where schools would like to have wireless access outside of the traditional classrooms that received some coverage previously. Examples of these locations would be multi-use rooms, staff lounges, football fields, etc. In addition to hardware needs, Technology & Information Services will analyze the bandwidth needs of each of our schools to determine whether current network speeds are meeting the needs of the users throughout the year.

New servers are needed at many schools to replace aging equipment. In addition demands are often increased by the influx of additional users and devices on the network that require their services.

Hundreds of rooms are currently being used for housing networking related equipment; however, many of them are not designed as such. Many sites will need to invest in racks and/or network cabinets, uninterruptable power supplies (UPS), and air conditioning to protect their investments and to maintain good availability of network services.

### **Requested Telecommunications & Surveillance Systems**

Security camera servers and software will need to be upgraded to support more security cameras and the storage demands of higher definition cameras.

### **Requested Online Resources and Software Packages**

Online learning is a new priority in MDUSD. There have been a few schools and committees that have been actively looking at various learning management systems and ways of delivering content to students and supporting collaboration. MDUSD will need an online system to facilitate learning for the 21<sup>st</sup> Century, and it is advised that a committee be created to research and evaluate systems for district-wide adoption. Outside of the programs listed in the prior section, there have been few standards established for other software applications across the district. As a result, individual school sites have acquired a wide variety of such resources individually. This proposed “Software Standards” committee would add support to the evaluation process, while at the same time protecting school and district interests as they leverage volume discounts, service and support.

## **5. MONITORING AND EVALUATION COMPONENT**

### **Overall progress and impact evaluation**

The process for evaluating the Technology Plan's impact on teaching and learning will involve the Technology Advisory Committee Leadership (TAC Leadership-Assistant Superintendent of Middle Schools, Educational Technology Program Specialist and Director of Technology Support) with support from School Support, Instructional Support and Technology & Information staff. To aid in the process of tracking plan goals and implementation steps, a project management timeline will be developed, with space to checkoff progress steps and record comments from stakeholders. TAC Leadership will review and evaluate implementation of the plan on a semi-annual basis using previously specified and any new pertinent data compiled by School and Instructional Support, and TIS Department staff. Data will be compiled in a comparative structure to facilitate analysis. Upon review of the data, the Team will adjust for necessary modifications or unforeseen needs or circumstances. On an annual basis a technology status report will be provided to the Board of Education. The report will include conclusions reached through survey data regarding technology use and proficiency by staff and students as well as student achievement data such as Smarter Balanced Assessments and common local assessments.

The TAC Leadership will prepare an annual report and update. This annual report will be presented to the Board of Education and public. For our upcoming three implementation years, the TAC will continue to meet on a bi-monthly basis in preparation for annual updates, to evaluate our progress, make recommendations for adjustments, and to monitor the plan. District staff will convene with members of the current TAC and invite other stakeholders and responsible parties to join with them in assessing progress on the plan and to make necessary recommendations for revisions. The guidelines for the TAC, are as follows:

- Review progress on the goals and timelines of the District Technology Plan.
- Make recommendations for revisions to the plan to meet the current site, District, and state budget demands/resources.
- Maintain awareness of new components required by state and federal agencies.
- Recommend modifications of the plan to include consideration of the realities of implementation.
- Keep abreast of up-to-date developments in educational research.
- Make recommendations to adjust the plan to represent recent advancements in technology.

## **Evaluation Schedule**

The TAC Leadership will review TAC recommendations and provide regular updates to the Superintendent and annual updates to the Board of Education, to ensure informed decisions are made. Information will be shared with District stakeholders in a variety of methods, such as email updates, meeting minutes, postings on the MDUSD website and in-person meetings. District stakeholders will be responsible for providing input and offering suggested improvements or modifications to the Plan. The TAC Leadership will be responsible for posting any substantive changes to the Plan that occur during implementation years of this plan. The Board of Education, School Site Councils, and the public will be kept apprised of Technology Plan implementation and progress on an annual basis, for the three-year duration of the Plan.

## **WORK CITED (In order of citation)**

Robert Murphy, Eric Snow, Jessica Mislevy, Larry Gallagher, Andrew Krumm, Xin Wei, 2014, Blended Learning Report, Michael & Susan Dell Foundation & SRI International.

“The Rise of K–12 Blended learning: Profiles of Emerging Models,” Heather Staker, Insight Institute, May 2011

“The Growing Interest in STEM,” By Kim Vij. Mar. 12. 2015.

New Media Consortium (NMC) Horizon Report 2015, K-12 Edition.

Cornell University Center for Teaching Excellence, Engaging Students, 2012

Uth, and Reigeluth, University Of West Georgia Indiana Univer. "Creating Technology-Enhanced, Learner-Centered Classrooms: K–12 Teachers’ Beliefs, Perceptions, Barriers, and Support Needs." *Journal of Digital Learning in Teacher Education* 28.2 (2011): 54-62.

Partnership for 21st Century Learning, 2015, p21.org

“The Great K – 12 Debate: Engaging Students with 1:1 and BYOD Initiatives,” Susie Steckner Insight.com, April 5th, 2015.

“What Meaningful Reflection On Student Work Can Do for Learning,” MindShift, December 3, 2014.

“Training for Transformation: Teachers, Technology, and the Third Millennium,” Source: Teachers of the Future, Tim Ham, Ed.D, 2010,

“Authentic Learning for the 21st Century: An Overview,” Edited by Diana G. Oblinger, ELI Paper 1, Educause Learning Initiative, Marilyn M. Lombardi, 2007

“Educators, Technology and 21st Century Skills: Dispelling Five Myths A Study on the Connection Between K–12 Technology Use and 21st Century Skills,” Richard W. Riley College of Education and Leadership, Walden University, Grunwald Associates LLC based on research by Eduventures, Inc., June 2010

“The Benefits of Students Teaching Students Through Online Video,” Katrina Schwartz, MindShift, 3 November 2014.

White House ConnectED, 2015, <http://1.usa.gov/lj05nfL>.

Empowering Learning: A Blueprint for California Educational Technology, 2014-2017.

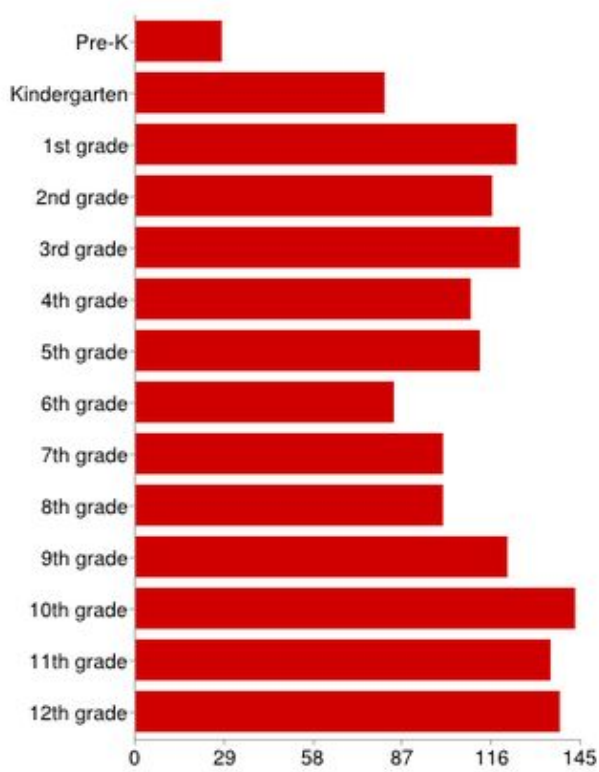
## **6. Appendix**

Appendix A-Teacher Tech Skills

### **MDUSD TEACHER TECHNOLOGY SKILLS SURVEY 2015**

**Over 800 MDUSD teachers took the survey.**

**What grade levels do you currently teach?**

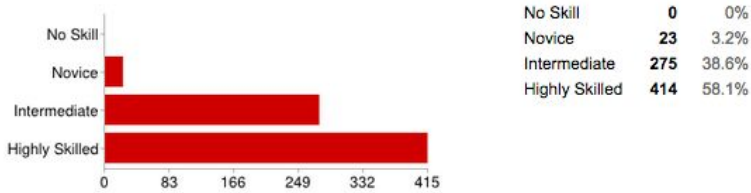


Pre-K	<b>28</b>	3.9%
Kindergarten	<b>81</b>	11.4%
1st grade	<b>124</b>	17.4%
2nd grade	<b>116</b>	16.3%
3rd grade	<b>125</b>	17.6%
4th grade	<b>109</b>	15.3%
5th grade	<b>112</b>	15.7%
6th grade	<b>84</b>	11.8%
7th grade	<b>100</b>	14%
8th grade	<b>100</b>	14%
9th grade	<b>121</b>	17%
10th grade	<b>143</b>	20.1%
11th grade	<b>135</b>	19%
12th grade	<b>138</b>	19.4%

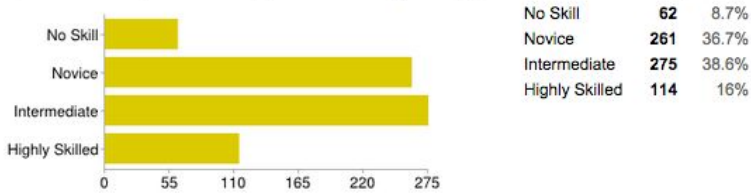
**Current Teacher Skill Level**



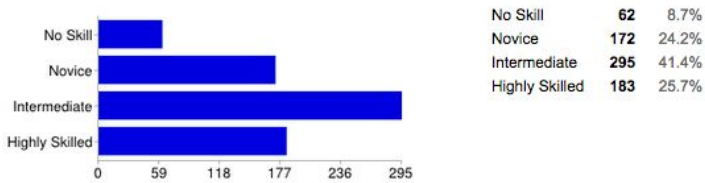
**Word processing/document processing [Which best describes your skill level with each of the following technologies:]**



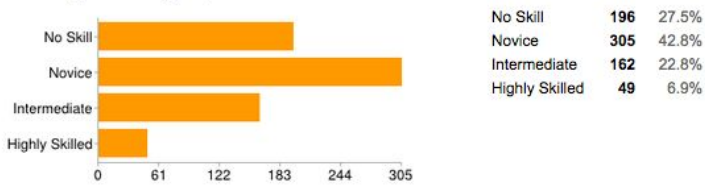
**Spreadsheets (for data analysis and management) [Which best describes your skill level with each of the following technologies:]**



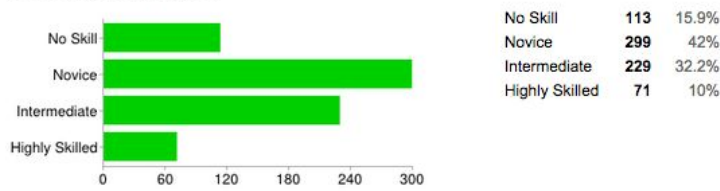
**Presentation software (e.g. PowerPoint, Prezi, Google Sites) [Which best describes your skill level with each of the following technologies:]**



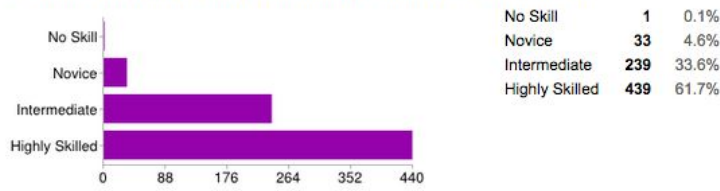
**Multimedia editing or authoring tools (e.g., Google sites, Kidblog, Photoshop, Illustrator) [Which best describes your skill level with each of the following technologies:]**



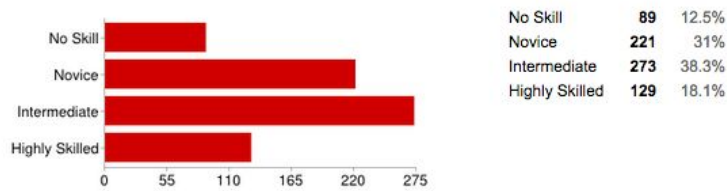
**Other data analysis or database software (e.g., Microsoft Access, Google forms) [Which best describes your skill level with each of the following technologies:]**



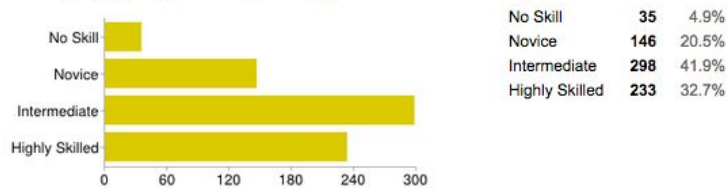
**Email (including attachment and address book features) and Web browsers (including book-marking, "back" or "home" features) [Which best describes your skill level with each of the following technologies:]**



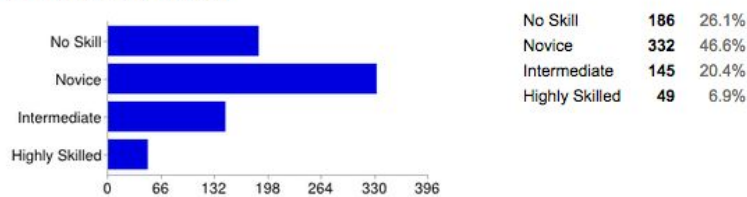
**Graphic peripherals (e.g., scanners, digital cameras, etc.) [Which best describes your skill level with each of the following technologies:]**



**Electronic information sources and web searching (searching efficiently, for example, by using "and" / "or" to narrow/expand your search, identifying synonyms or keywords) [Which best describes your skill level with each of the following technologies:]**



**Learning management systems (LMS) (e.g. Edmodo, Google Classroom, Echo etc.) [Which best describes your skill level with each of the following technologies:]**

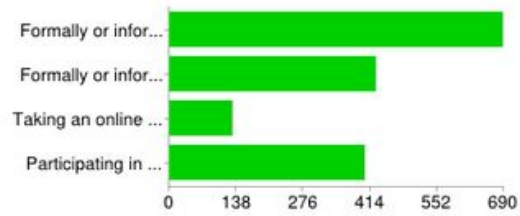


**Taking into account professional and personal use, how often do you typically use the internet from home?**



Daily or almost daily	<b>686</b>	96.3%
One or more times per week	<b>21</b>	2.9%
One or more times per month	<b>3</b>	0.4%
Less than monthly	<b>1</b>	0.1%
Never	<b>1</b>	0.1%

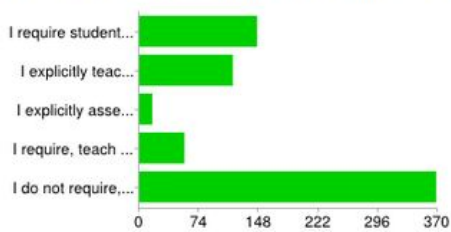
**Which of the following are you currently doing (or have you done) during this school year?**



Formally or informally collaborating with other educators using email	<b>688</b>	96.6%
Formally or informally collaborating with other educators using the Internet (other than email)	<b>426</b>	59.8%
Taking an online course	<b>130</b>	18.3%
Participating in technology-related professional development (workshops, training sessions)	<b>403</b>	56.6%

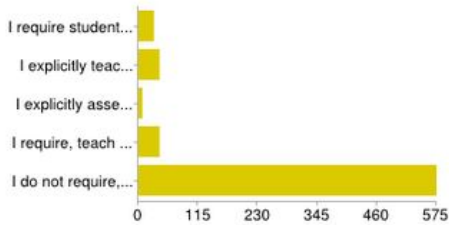
## Current Use of Technology in Classrooms

### Word processing/document processing [Student technology in the classroom.]



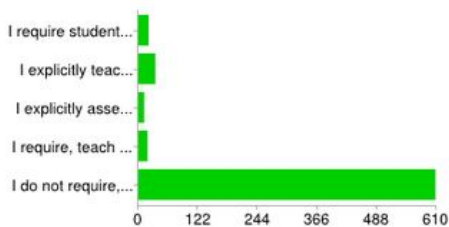
I require students in my class to use instructional technologies.	146	20.5%
I explicitly teach students to use this instructional technologies.	116	16.3%
I explicitly assess student proficiency in this instructional technologies.	16	2.2%
I require, teach and assess this instructional technology proficiency.	56	7.9%
I do not require, teach or assess this instructional technology proficiency.	368	51.7%

### Multimedia editing or authoring tools (e.g., Google sites, Kidblog, Photoshop, Illustrator) [Student technology in the classroom.]



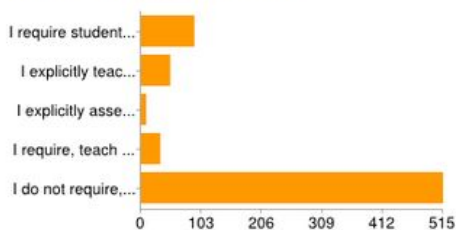
I require students in my class to use instructional technologies.	30	4.2%
I explicitly teach students to use this instructional technologies.	41	5.8%
I explicitly assess student proficiency in this instructional technologies.	8	1.1%
I require, teach and assess this instructional technology proficiency.	41	5.8%
I do not require, teach or assess this instructional technology proficiency.	575	80.8%

### Graphic peripherals (e.g., scanners, digital cameras) [Student technology in the classroom.]



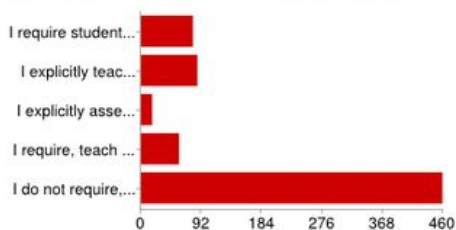
I require students in my class to use instructional technologies.	21	2.9%
I explicitly teach students to use this instructional technologies.	35	4.9%
I explicitly assess student proficiency in this instructional technologies.	12	1.7%
I require, teach and assess this instructional technology proficiency.	19	2.7%
I do not require, teach or assess this instructional technology proficiency.	608	85.4%

### Email (including attachment and address book features) and Web browsers (including book-marking, "back" or "home" features) [Student technology in the classroom.]



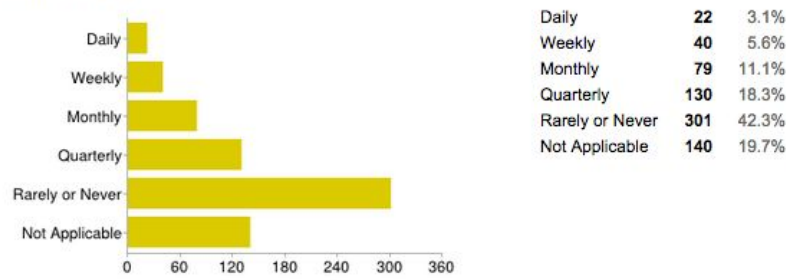
I require students in my class to use instructional technologies.	91	12.8%
I explicitly teach students to use this instructional technologies.	50	7%
I explicitly assess student proficiency in this instructional technologies.	9	1.3%
I require, teach and assess this instructional technology proficiency.	33	4.6%
I do not require, teach or assess this instructional technology proficiency.	515	72.3%

### Presentation software (e.g., PowerPoint, Prezi, Google Slides, etc.) [Student technology in the classroom.]

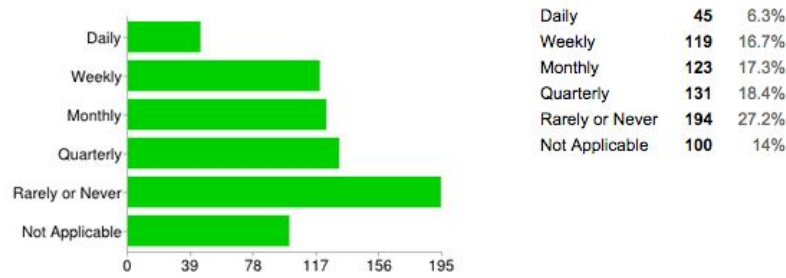


I require students in my class to use instructional technologies.	79	11.1%
I explicitly teach students to use this instructional technologies.	86	12.1%
I explicitly assess student proficiency in this instructional technologies.	17	2.4%
I require, teach and assess this instructional technology proficiency.	58	8.1%
I do not require, teach or assess this instructional technology proficiency.	459	64.5%

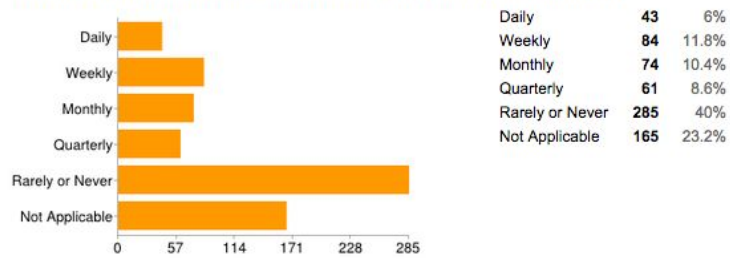
**Produce multi-media, Web, or presentation products [How often do students in your class(es)/school use technology to do the following? ]**



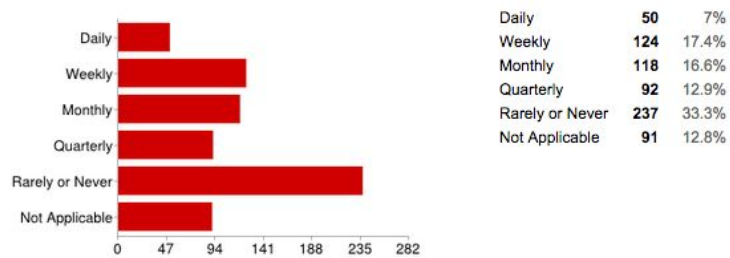
**Conduct online research [How often do students in your class(es)/school use technology to do the following? ]**



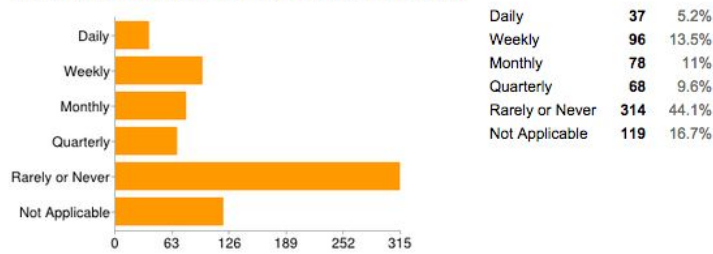
**Solve real-world problems (i.e., involving situations, issues, and tasks that people actually tackle in the outside world) [How often do students in your class(es)/school use technology to do the following? ]**



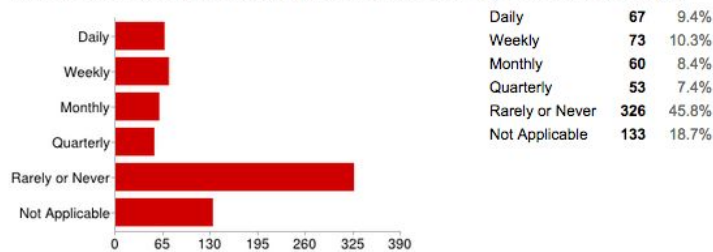
**Produce print products [How often do students in your class(es)/school use technology to do the following? ]**



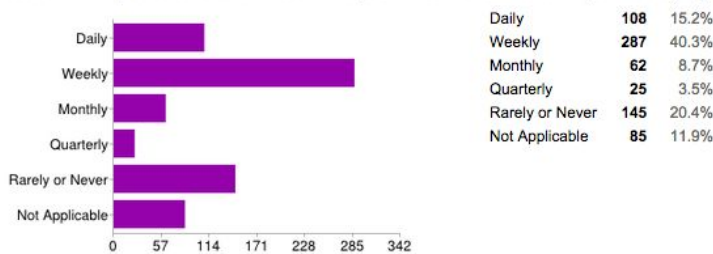
**Visually represent or investigate concepts (e.g., through concept mapping, graphing, reading charts) [How often do students in your class(es)/school use technology to do the following? ]**



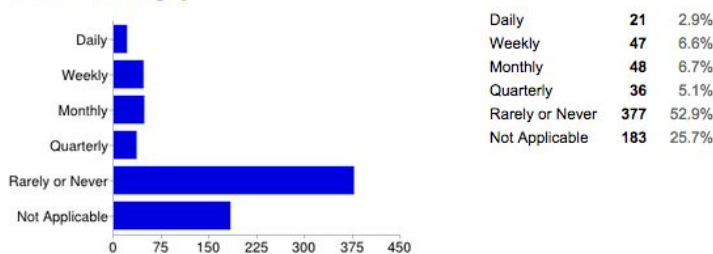
**Use digital tools and peripheral devices (e.g., digital cameras, probes, scanners) to enhance their learning or their school work [How often do students in your class(es)/school use technology to do the following? ]**



**Use drill and practice or tutorial software [How often do students in your class(es)/school use technology to do the following? ]**

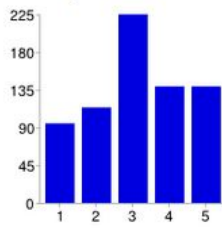


**Use the Internet to collaborate with students in or beyond your school [How often do students in your class(es)/school use technology to do the following? ]**



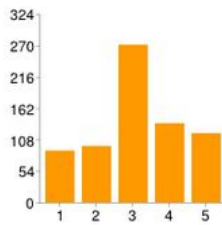
## Planning Technology-Supported Instruction

When designing my lessons, I regularly think about how CCSS college and career technology standards can be integrated into student learning.



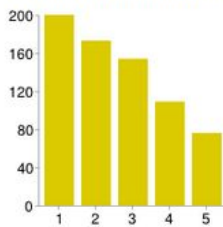
1	95	13.3%
2	114	16%
3	225	31.6%
4	139	19.5%
5	139	19.5%

When selecting education technologies, I refer to and base my selections on current research on their effectiveness.



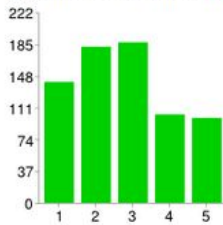
1	89	12.5%
2	97	13.6%
3	271	38.1%
4	136	19.1%
5	119	16.7%

I regularly use technology to enhance learning in my classroom.



1	200	28.1%
2	173	24.3%
3	154	21.6%
4	109	15.3%
5	76	10.7%

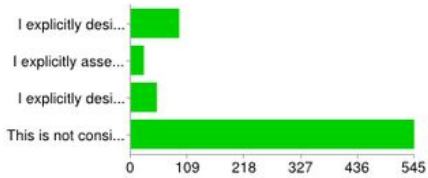
I have classroom management and organizational strategies for using technology; I can smoothly orchestrate learning activities when my students use technology.



1	141	19.8%
2	182	25.6%
3	187	26.3%
4	103	14.5%
5	99	13.9%

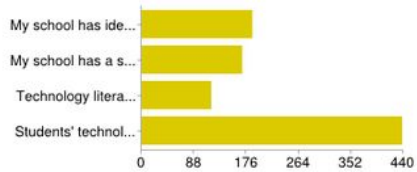
## Digital Literacy & Citizenship

**Understanding the fundamentals of technology systems (e.g., understanding distinctions between hardware and software, familiarity with basic computer functions, e.g. file management and storage) [Student ethical, legal and safe use of technology in the classroom.]**



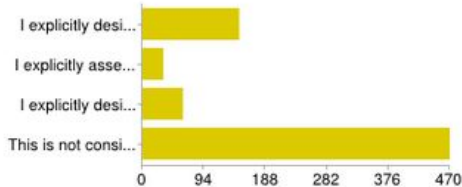
I explicitly design class content or assignments to build this skill in students.	<b>93</b>	13.1%
I explicitly assess whether students are proficient in this skill.	<b>25</b>	3.5%
I explicitly design class content or assignments to build this skill in students and assess their proficiency.	<b>50</b>	7%
This is not considered in my design of class content or assignments.	<b>544</b>	76.4%

**Which of the following strategies has your school employed for addressing students' technology literacy:**



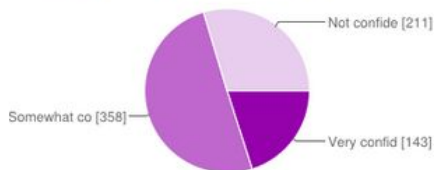
My school has identified specific skills (e.g., using technology to collaborate effectively with peers) that students must have in order to be technologically literate.  
 My school has a specific program or plan for helping students become technologically literate (e.g., responsibilities are officially assigned to subject areas for covering different technology skills).  
 Technology literacy is assessed formally at some point during a student's tenure in my school.  
 Students' technology literacy is not assessed at my school.

**Understanding ethical, legal and societal issues related to technology use, and using technology in ethical ways (e.g., the Internet and individual right to privacy) [Student ethical, legal and safe use of technology in the classroom.]**



I explicitly design class content or assignments to build this skill in students.	<b>148</b>	20.8%
I explicitly assess whether students are proficient in this skill.	<b>32</b>	4.5%
I explicitly design class content or assignments to build this skill in students and assess their proficiency.	<b>62</b>	8.7%
This is not considered in my design of class content or assignments.	<b>470</b>	66%

**How prepared do you feel to instruct students in the areas of technology literacy, ethical, legal and safe use of technology.**

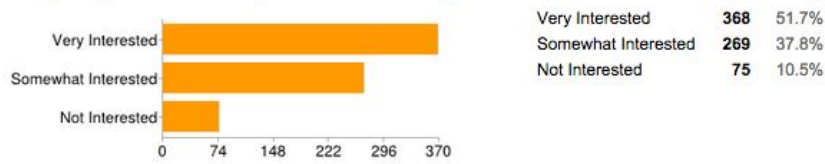


Very confident	<b>143</b>	20.1%
Somewhat confident	<b>358</b>	50.3%
Not confident	<b>211</b>	29.6%

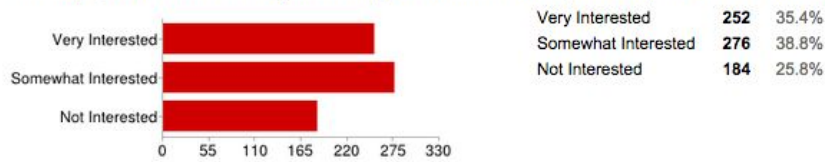


## Educational Technology Professional Development Interest

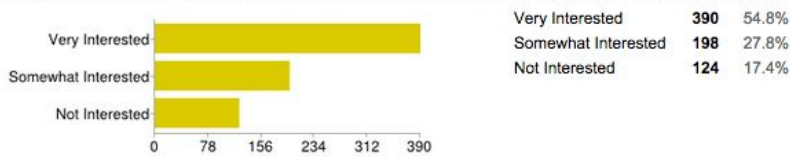
### Google Apps in Education [How interested are you in the professional development experiences offered by your district? ]



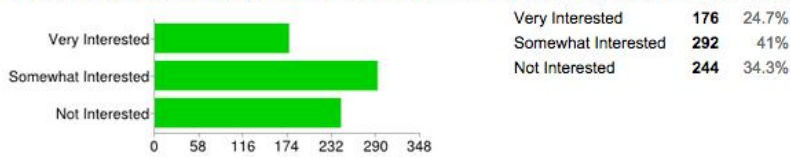
### Ed1Stop [How interested are you in the professional development experiences offered by your district? ]



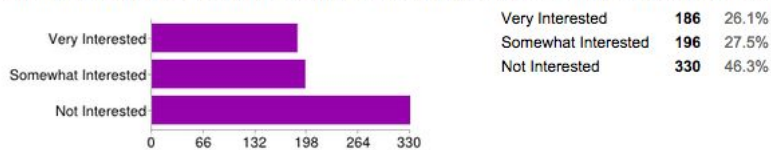
### iPad Integration in the Classroom [How interested are you in the professional development experiences offered by your district? ]



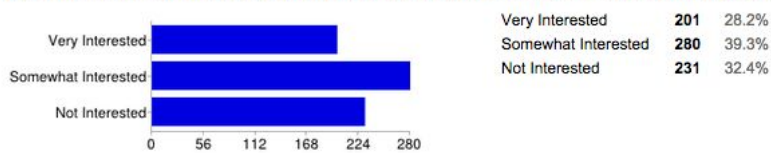
### OARS [How interested are you in the professional development experiences offered by your district? ]



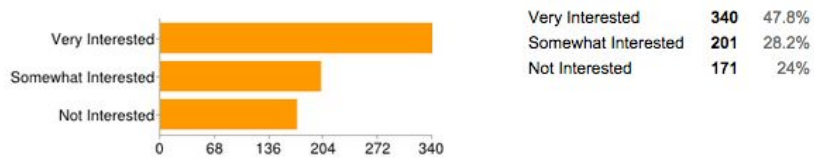
### Blogging in the Classroom [How interested are you in the professional development experiences offered by your district? ]



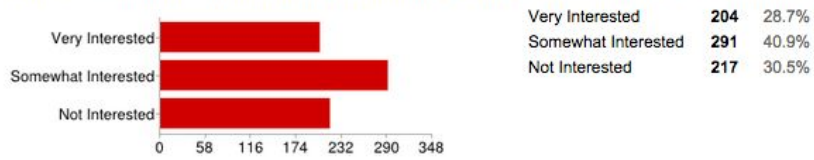
### Digital Literacy and Citizenship [How interested are you in the professional development experiences offered by your district? ]



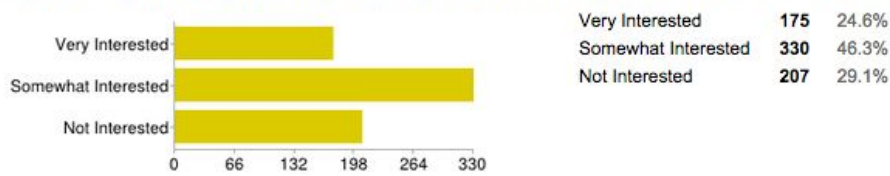
**Keyboarding skills for students [How interested are you in the professional development experiences offered by your district? ]**



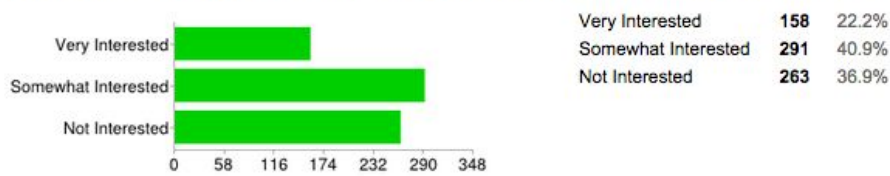
**Open Education Resources [How interested are you in the professional development experiences offered by your district? ]**



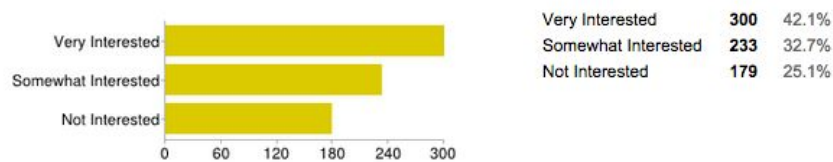
**Blended Learning [How interested are you in the professional development experiences offered by your district? ]**



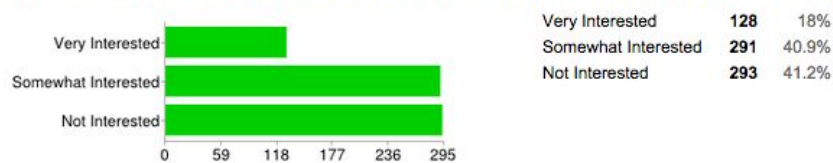
**Flipped Classroom [How interested are you in the professional development experiences offered by your district? ]**



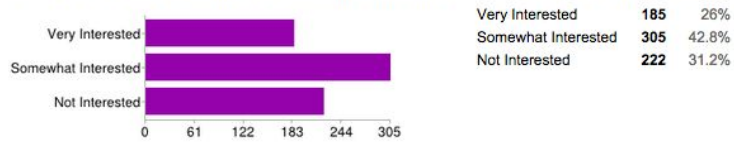
**Interactive whiteboard [How interested are you in the professional development experiences offered by your district? ]**



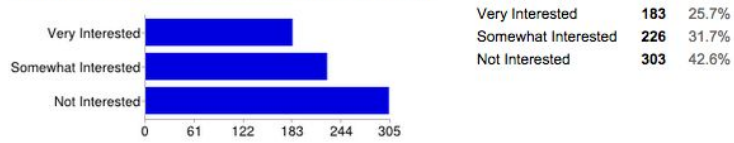
**Spreadsheets [How interested are you in the professional development experiences offered by your district? ]**



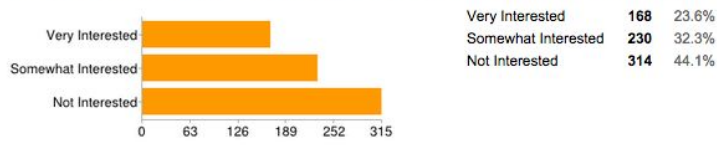
**Web Literacy (advanced internet searching) [How interested are you in the professional development experiences offered by your district? ]**



**Basic Tech Skills (word processing, presentation software, file management, email, image editing, [How interested are you in the professional development experiences offered by your district? ]**



**Accessing or creating podcasts [How interested are you in the professional development experiences offered by your district? ]**



**Audio/Video production and editing (Audacity, GarageBand, iMovie, MovieMaker, etc.) [How interested are you in the professional development experiences offered by your district? ]**

