



**Moorpark Unified  
School District**  
JET Review Final Report  
March 2018

## Contents

<b>Preface and Disclaimer</b>	<b>3</b>
<b>Review and Report Process</b>	<b>4</b>
<b>Executive Summary</b>	<b>6</b>
Growth Area One	8
Growth Area Two	8
Growth Area Three	8
Growth Area Four	9
Growth Area Five	10
<b>Survey Results</b>	<b>11</b>
<b>Stakeholder Survey Data</b>	<b>12</b>
Evidence of 4C's in the classroom	12
Stakeholder Group 1	13
Stakeholder Group 2	17
<b>Tiered Action Areas</b>	<b>18</b>
TIER 3	18
TIER 2	23
TIER 1	30
<b>Conclusion</b>	<b>33</b>



## Preface and Disclaimer

The Joint Ed Tech Review Program, sponsored by [CUE](#) and [CETPA](#), provides a unique blend of experience for school districts. CUE, as the ISTE, SETDA and iNACOL affiliate for California and Nevada and the producer of the Google Teacher Academy and CUE Rock Star Teacher and Admin Camps, has a unique and deep perspective for what students and educators need in their classrooms. CETPA provides information, industry partnership, advocacy, and legal resources for the IT Professionals working in schools. CETPA is uniquely qualified to find IT Professionals to evaluate your organization's infrastructure.

The JET Review Team assessed the school infrastructure as it relates to academic needs at district school sites. The Team assessed all the MDF and IDF cabinets, server rooms, as well as observed and reported on the use of tech in classrooms via EdTech Rounds.

*A **JET Review** is not an audit. A JET Review is centered around conversations with many stakeholders to create an actionable list that maximizes the edtech investments that districts have already made, and to assist the district in moving forward.*

For Moorpark Unified, the JET review team consisted of two Lead Learners who visited the district office and four school sites over two days. The review team was comprised of:

- One Senior Level K-12 Technology Professional - tasked with reviewing the district's infrastructure and network systems and collaborating on the final JET report.
- One Senior Level Educational Leader - tasked with coordinating EdTech rounds data collection, moderating the various stakeholder groups and collaborating on the final JET report.

*Disclaimer: This report contains information that is true and correct based on the data provided by the school district. The recommendations and actions are suggestions based on this information and are not intended to be the only solutions available. This report should be used as the basis for ongoing conversations and processing of district needs and visions, among all district stakeholders, with the goal of integrating technology and 21st century pedagogy in all classrooms.*

## Review and Report Process

Over a period of two days, the JET Review team interviewed a wide variety of stakeholders, including teachers, students, administrators, and certificated and classified support staff. Each group was given a survey to complete, and focus group interviews were conducted with stakeholder groups at each school site and the district office.

Names and site locations were purposely not gathered from the stakeholders. Instead, results were sorted by job description and/or stakeholder group. The results (raw data) from the classroom educational visits and stakeholder surveys which guided the Review Team's input are included in this report. The Team visited four schools - one high school, one middle school, and two elementary schools. (The Team was, however, able to talk in focus groups with teachers and staff from *both* middle schools, who also were able to complete the survey.) Time constraints precluded the opportunity to visit all District schools, so Moorpark staff selected schools that they felt would be as representative of the district as a whole as possible. The Team also visited with staff at the District office, including cabinet level leadership, and with the IT department.

For each stakeholder group, following a brief interview / focus group session, participants were asked to complete a survey. On the survey, in addition to generalized, selectable text boxes (based on a Likert scale) asking questions about the district's technology use, stakeholders were asked three open-ended questions including a question about the District's readiness for Common Core and 21st Century learning, a "challenge question" (something that could be a large task for the district), and an "opportunity question" (something that could be easy for the district to implement), as well as general comments about the state of educational technology within the District.

The Team visited 47 classrooms and labs, randomly selected, throughout the district. In each classroom, a JET Review team member conducted an EdTech Rounds Review comprised of observing in two main areas:

- Use of educational technology in the classroom
- Implementation of the [4Cs concepts](#) in the lesson delivery, as it pertained to the use of educational technology.

The goal of the EdTech rounds was to make a random sampling of classrooms and note what is *in place* and *in use* at the time of the visit, providing data which can be used by District stakeholders to reflect on the use of educational technology as a whole. It is important to note that these random visits provide a snapshot of activity in the selected classrooms and represent what was happening during a small slice of the school day. Taken as a whole, the randomness of the visits, during all hours of the

school day, provide a gross representation of the upper or lower levels of educational technology use, but should not be considered a definitive picture of everything that is happening in the District.

All of the raw data from the EdTech rounds, interviews and surveys is attached to this document.

### **JET Review Team**

#### **Joe Ayala**

Director of Operations, Union School District, CETPA Certified CTO, CUE Lead Learner

#### **Mike Vollmert, Ed.D.**

Director of Technology (retired), Rio School District, CETPA Certified CTO, CUE Lead Learner

*\*As members of this study team, these consultants were not representing their respective employers but were working solely as independent contractors for CUE, Inc.*



## Executive Summary

Our students today face a world of ever increasing rates of change, and a future that progressively looks less and less like the world current adults inhabit. As educators, we grow increasingly unable to predict the world our students will see as adults, and as a result are less and less able to predict what, specifically, our students need to know. Traditional approaches to teaching and learning are becoming more and more obsolete, because we can no longer predict with any degree of accuracy the body of knowledge that will be required of our students when they leave our school system, be it for college or career. What we do know, based on numerous research studies, is that students will be required to be more flexible and adaptable, work in collaborative groups, be able to think critically and assimilate new and varied information in various contexts to create meaning, and be able to effectively communicate new ideas in multiple ways. (See [Bloomberg Job Skills Study, 2016](#), [World Economic Forum, Future of Jobs, 2016](#) as two examples. Also, read NBC News' recent article, "[Students are being prepared for Jobs That No Longer Exist](#)" and see the video [The Future of Work](#)). Around the world, the world of work is being reshaped in ways that require all students to be more adaptable, more able to assimilate new ideas from increasingly unfamiliar pieces of information, and to work more collaboratively, more creatively, than ever before. Traditional jobs, even trade-related jobs like construction or truck driving, are being reshaped in ways requiring our students to work in new ways we can only begin to understand. (Visit the [university in Switzerland](#) where researchers are developing robots to build timber-framed structures from start to finish!)

In this context, classrooms need to be seen as places where students become empowered learners, connected to the outside world, where collaboration between students and with teachers is not restricted by the walls of the room or the boundaries of the school or the district. Further, the teacher's role must shift from being the disseminator of content to the facilitator of learning. Shifting from a teacher-centered classroom to one where teachers work with students to develop deep learning and reflective skills to help them become capable, independent learners is a shift that must take place to prepare our students for their futures. The focus of the work in which students engage needs to be based on inquiry, where projects that provide them the opportunity to struggle with solutions to real-world problems are the starting point, and standards and content are woven in as one component of the learning whole. This requires a paradigm shift for most schools.

The key to this vision is the integration of technology, most importantly internet-connected student mobile devices, that provide students the opportunity to research information as needed, to collaborate with others, to curate and connect various sources of information on a given topic, and to create in multiple ways evidence of their learning and communicate that learning with various audiences, both inside and outside the classroom. Districts must affirm that the infrastructure to support these devices, as well as teacher devices and other technologies in the classroom is in place and functioning satisfactorily.

Further, districts must put in place a robust professional development program, providing support for teachers to integrate these 21st Century Skills (collaboration, communication, critical thinking, creativity) and to make the shift from a teacher-centered learning environment towards a student-centered one.

In direct support of teaching and learning, the Review Team noted that computers for classified office staff and staff at the district office were operating with out of date computers (and in many cases, seriously out of date operating systems), and extremely small monitors. This is hampering operational efficiency and business practices in myriad ways. Utilizing dual monitors in key positions, like Office Manager, makes it possible to keep multiple screens open at the same time - student information and the school calendar, for example. Finance staff can have one monitor with the District financial system screens open, and a second with various spreadsheets that are used for budget modeling, etc. Human Resources staff could have the HR system screens open, along with email. These monitors should be large enough to minimize the need to scroll to see the majority of a spreadsheet or a screen of information from a given system. A fifteen-inch monitor is too small, and the low cost of larger monitors makes them attractive. Like the technology available to classrooms, teachers, and students, support staff needs to be kept up with current technologies, not only in terms of equipment but in terms of business practices. For example, the Team noted that permanent records for students (transcripts, etc.) are still being stored as paper. These should be digitized, and stored in a secure, reliable (preferably cloud-based) digital storage solution. Similarly, rather than keeping documents in binders and file folders, staff should move to digitize existing documentation that needs to be kept or shared (blueprints, budget documents, reports, etc.) and place these files in shared digital storage. Finally, like teachers, support staff need a robust professional development program to help them maximize the utilization of digital tools, learn how to use shared drives, shared calendars, and productivity software such as GSuite. Staff also needs ongoing training in best-practice use of existing software (financial and HR systems, student information systems) and new software (digital scanning and document storage software.)

Lack of sufficient student devices, aging classroom technology, and sufficient infrastructure are the key elements to be addressed to bring this vision to fruition.

The JET Review team determined the following five main areas for growth.

*\*Note: the five areas are in no particular order, they are all of equal importance.*



## Growth Area One

### **Seeing and understanding the new pedagogy.**

The district's vision of graduating effective communicators and critical thinkers requires a shift from traditional classroom practices to a 21st Century pedagogy. Articulating a vision for 21st Century teaching and learning is a new and exciting challenge, and conversations about how this changes and impacts students, teachers, and classrooms is something that needs to be discussed at all levels, and with all stakeholders, both inside and outside the District. It is also a relatively new area for discussion, something that doesn't appear to be on the radar for most teachers.

In our visits to classrooms, we saw very little in terms of 21st Century skills being applied, and virtually no examples of utilizing them in conjunction with technology. A major push for Moorpark Unified, then, is in the area of helping teachers focus on incorporating 21st Century skills and a student-centered approach into their classrooms.

Understanding and embracing this vision is probably easiest if district leaders, teachers and site administrators can see it in action by visiting other school districts who have moved in this direction. Visiting districts that have examples of student-centered classrooms would be extremely valuable. The visits would then be followed up with discussions and professional development activities for teachers and administrators related to 21st Century pedagogy and the 4C's, along with designing and implementing inquiry-based lessons and projects in the classroom.

## Growth Area Two

### **Acquire sufficient mobile devices to provide a device for every student.**

Universally, teachers and administrators identified being a 1:1 District (where there is a device for every student) important in moving towards state of the art. The current supply of student devices has necessitated teachers scheduling their use, in ways that frequently make it impossible to truly integrate them into the classroom in meaningful ways. Many teachers have basically given up on making use of the devices, because they can't schedule their use frequently enough. An internet connected mobile device is the 21st Century equivalent of a 20th Century paper and pencil - not in the sense that the computer is replacing the pencil, but in the sense that the computer is a tool. As a tool, it needs to be ubiquitously available, on demand, for every student for accessing and researching information, creating content, and communicating and collaborating with others.

## Growth Area Three

### **Install a wireless access point in every learning space.**

The current wireless network is built for coverage, which, while important, is not sufficient for a 21st Century school. In addition to assuring that there is a wifi signal in all learning spaces, it is

crucial that there is adequate bandwidth available via the access points to afford all users - students and teachers - continuous connection to the internet. Currently, depending on the school site and the area within a school, there is an access point to cover between three and five classrooms.

Each user should have 5-10 MBPS of bandwidth when they connect to the wireless network. Achieving this level of connectivity calls for a wireless access point in every classroom. In focus groups with students and teachers, a consistent annoyance revolved around not being able to get onto the internet, experiencing frustratingly slow connection speeds, or being dropped. These experiences point to inadequate density coverage of existing access points. Expanding the wireless infrastructure to place an access point in every learning environment (classrooms, libraries, etc.) can be accomplished utilizing discounts from the federal E-rate program.

## Growth Area Four

### **Comprehensive professional development.**

Moving from a traditionally teacher-centered, information based classroom to a student-centered, inquiry based pedagogy is a huge paradigm shift for most teachers. This move is counter to their experience as students, their training in credential programs, and their work over the past decades in schools. Yet it is the shift that is necessary, because the world our students are entering is vastly different than the one that existed just a decade or two ago. The difference is primarily related to access to information. Information was scarce twenty or more years ago. Today, our students live in an information rich world. This means the teacher no longer has to be the source of all information.

In that light, districts cannot overcommit to professional development. The design of that professional development, however, should reflect the design of the classroom envisioned in a 21st Century world. Student-centered classrooms demand teacher-centered professional development. A teacher-centered professional development program should be built around inquiry and be driven by the goals and visions of the district. It should be individualized and ongoing, not limited to specific days allocated for all teachers to attend PD events. It should recognize that teachers lie on a spectrum where there are some who are fully engaged in the goals and visions and are already experimenting with new ways of designing their learning, and there are some who have little or no comfort with technology, the internet, or 21st Century pedagogies.

A PD program that includes aspects of skill enhancement (use of GSuite tools and other software applications, for example), pedagogical work (building inquiry-based lessons, shifting from traditional grading to rubrics, moving to student-centered classrooms), and collaboration (expanding the classroom outside the traditional walls of the classroom, school, or district, and teachers developing their own professional learning networks) requires a different mind-set than traditional approaches to professional development. Ultimately, the model for teacher and staff professional development should match the student-centered, inquiry based pedagogy of the classroom.

## Growth Area Five

### **Use TCO as the guide to update existing classroom technology and for future technology.**

Total Cost of Ownership (TCO) is a model which examines multiple facets of a purchase before making a decision about what specific model or item will be selected. For school districts, adequate funding is never a reality for technology, and resources have to be prioritized and difficult decisions (most often around what can't be purchased) must be faced on an ongoing basis. As such, examining not only the purchase price, but the cost to support and maintain a given technology, and its expected durability and lifespan are all factors that must be taken into consideration.

*Example 1:* Utilizing bond funding, the District installed Promethean interactive boards a number of years ago. In teacher focus groups, the need for the Promethean systems to be replaced was brought up at every school site. The JET Review team observed the Promethean projectors in use in a high percentage of classrooms (40 of the 47 classrooms visited) during the random Ed-Tech Rounds. The Team noted that most of the projectors were dim, with some being virtually un-viewable (although teachers gamely made the best use they could by turning off lights and closing blinds to darken the room enough to have at least some visibility). Invariably, however, the system was being used only for projection - the interactive technology incorporated into the display board was not being used, rather the board was merely a projector screen as the teacher displayed images from computers or document cameras. In asking teachers about the use of the interactive technology, it became clear that that use was a far second place to having a display device that could connect to computers and document cameras. Measuring the replacement cost of the Promethean systems with their overwhelming use as a display for other technologies in the classroom, the District might consider the option of cheaper options such as flat-panel displays or lower-cost projectors, foregoing replacing the interactive technology and substituting considerably lower cost options available as apps for the laptops, and utilizing systems such as Google Classroom.

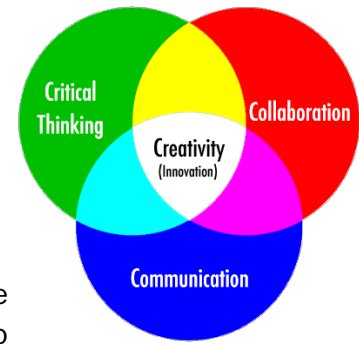
*Example 2:* Using a TCO model to select student devices, many districts have experienced as high as 68% lower total costs by utilizing Chromebooks over traditional Windows or MacOS based laptops. With consistently tight budgets, this is the primary reason why Chromebooks are the predominant choice for schools across the country.

*Example 3:* Using Microsoft Exchange for email incurs a number of costs, both in terms of equipment (servers) and support (updates, patches, etc.). Switching to GSuite for Education would drastically lower costs in both areas, since the system is cloud based and free to school districts.

These examples, which could be construed as recommendations, illustrate the need for examining function against the constraints of budget and personnel and finding the most cost-effective approach to getting the job done. Utilizing the TCO model requires clear delineation of need and of identifying all associated costs. In the end, however, it is the best way to create priorities and maximize limited resources.

## Survey Results

According to a 2010 study — the American Management Association, the AMA 2010 Critical Skills Survey — the “Four Cs” will become even more important to organizations in the future. Three-out-of-four (75.7 percent) executives who responded to the AMA survey said they believe these skills and competencies will become more important to their organizations in the next three to five years, particularly as the economy improves and organizations look to grow in a global marketplace. Additionally, 80 percent of executives believe fusing the “Three Rs” and “Four Cs” would ensure that students are better prepared to enter the workforce. According to these managers, proficiency in reading, writing, and arithmetic is not sufficient if employees are unable to think critically, solve problems, collaborate, or communicate effectively. It is clear that the “Four Cs” need to be fully integrated into classrooms, schools, and districts around the country to produce citizens and employees adequately prepared for the 21st Century.”



*From, “Preparing 21st Century Students for a Global Society: An Educator’s Guide to the “Four Cs””, NEA.org*

During EdTech Rounds, reviewers noted the types of observed activities in which students were engaged and related them to the 4Cs as used in classes. Activities observed that would not count as tech use of the 4Cs, included: taking notes from a document camera, typing an essay by oneself, doing a canned online activity, and general research.

Examples of 4Cs activities: engaging in the writing process of an essay or slide deck in Google as a group, making different pages on a web site or slide deck collaboratively, “live commenting” on essays by teachers, students completing Frayer models or researching together to answer multi-part questions, teachers using tools like Socrative, GoFormative or Microsoft Forms to gather live student responses on problems or discussions, and students using Minecraft or CodeAcademy to be able to create their own representations of academic content and mastery.

The results below should not be interpreted as “success” or “failure”, rather they should be seen as an opportunity for educational leadership and training to truly enhance the classroom experience for all of Moorpark Unified’s students.

## Stakeholder Survey Data

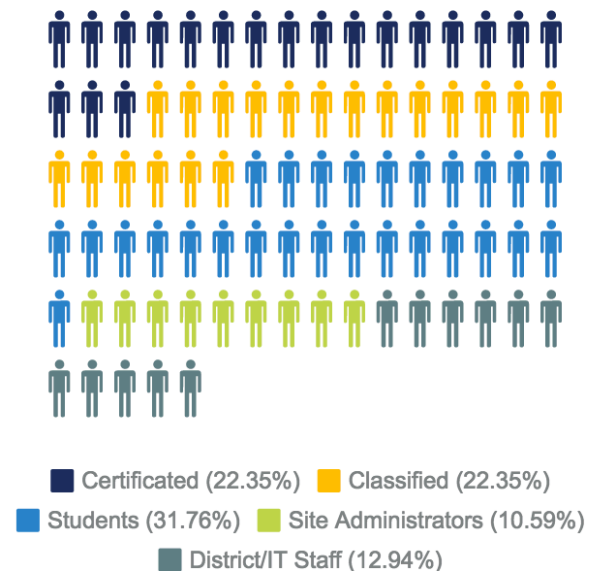
Data gathered in surveys is accompanied by comments and insights from the JET consultants regarding trends and patterns observed. The results of the survey, along with summarized tallies, are available [here](#) (for adults) and [here](#) for students. Notes from both JET Team members taken during the Focus Group sessions is [here](#).

Participation by stakeholder group.

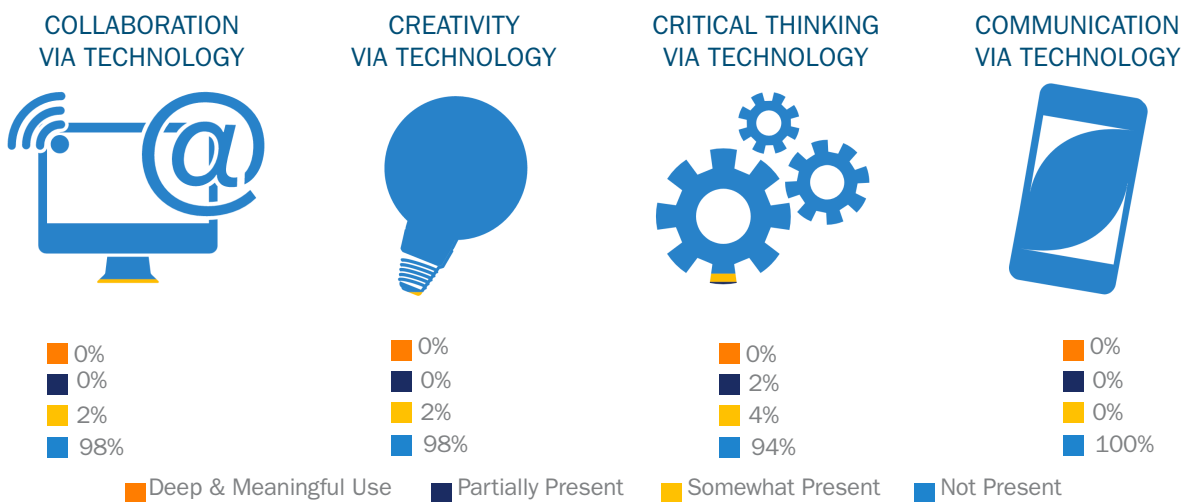
- 19 Certificated
- 19 Classified
- 11 Site Administrators
- 27 Students
- 11 District/IT Staff

The charts on the following pages show the responses to each of the questions on the survey.

**Note:** Individual comments can be seen on the survey results spreadsheet, referenced above.



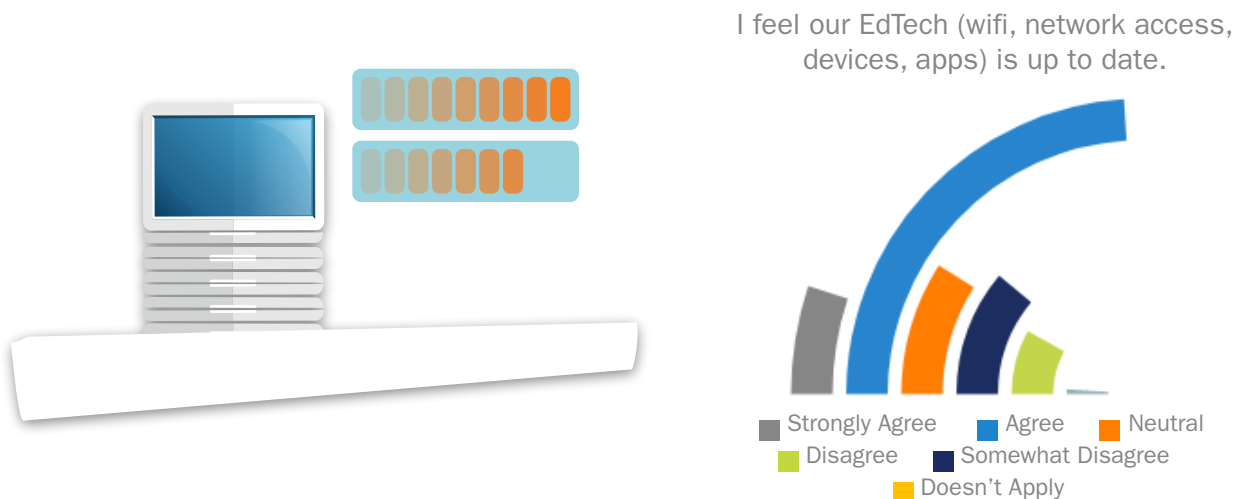
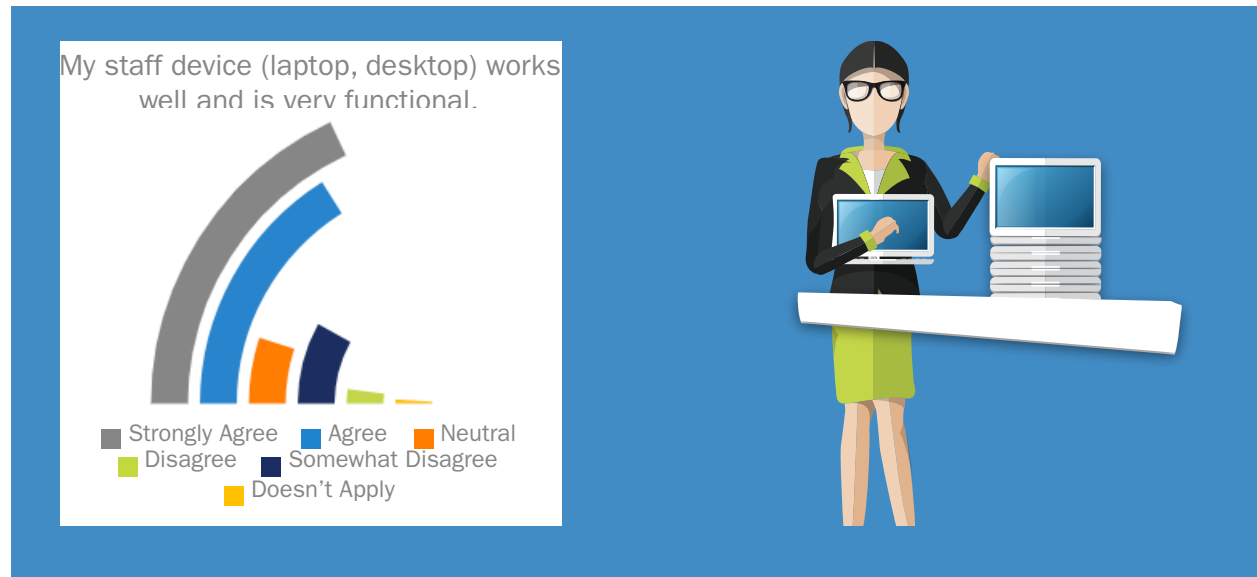
## Evidence of 4C's in the classroom



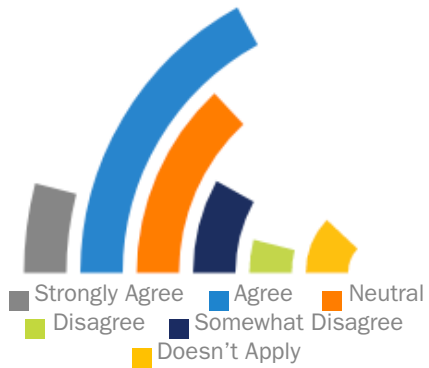
## Stakeholder Group 1

Certificated, Classified, Site Administrators, and District/IT Staff

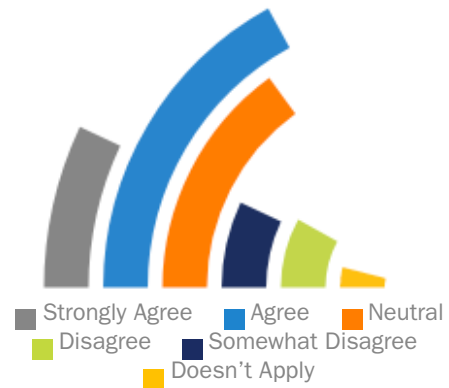
Adults were asked 10 questions, and were asked to rate each with the same 5-point Likert Scale:



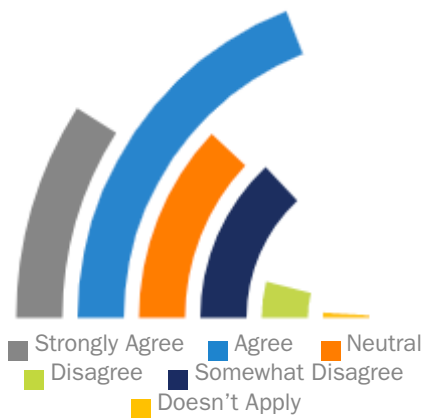
Our student labs or classroom carts work well.



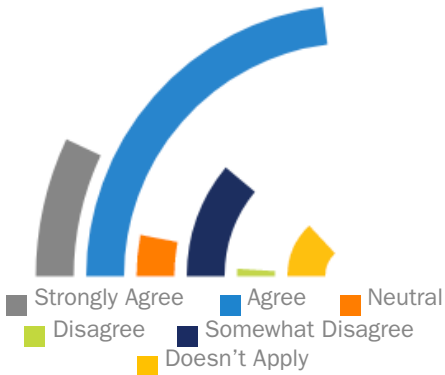
Professional Development is effective and well planned.



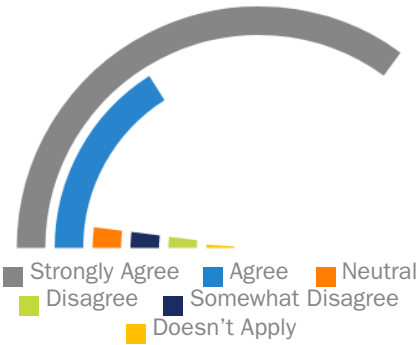
Our internet filter is effective.



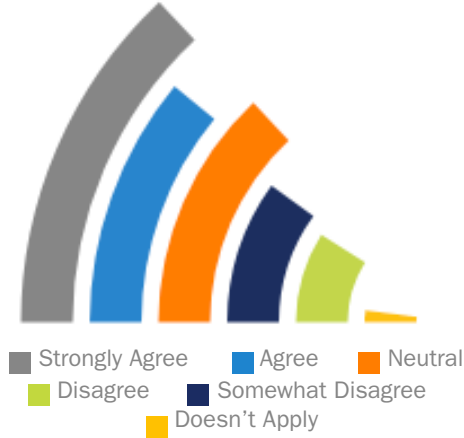
Certificated staff has access to adequate wifi and bandwidth to teach effectively.



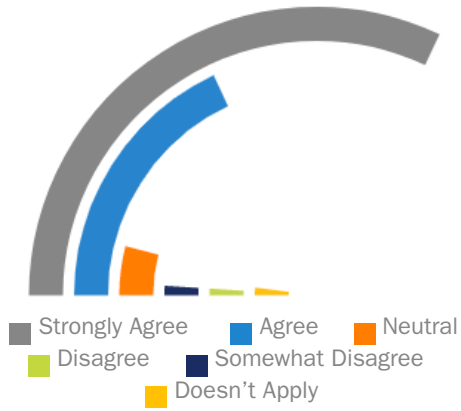
IT support staff responds timely.



District IT staff is adequately staffed.



Our Tech support comes primarily from the IT Dept.



Our Tech Support comes primarily from a site based person.

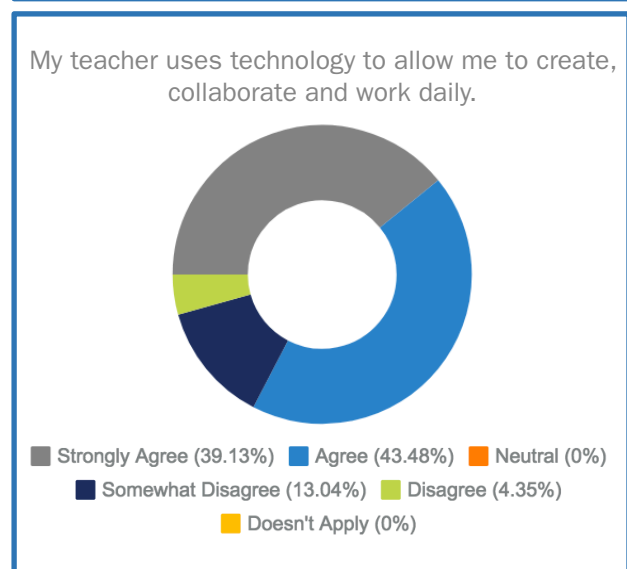
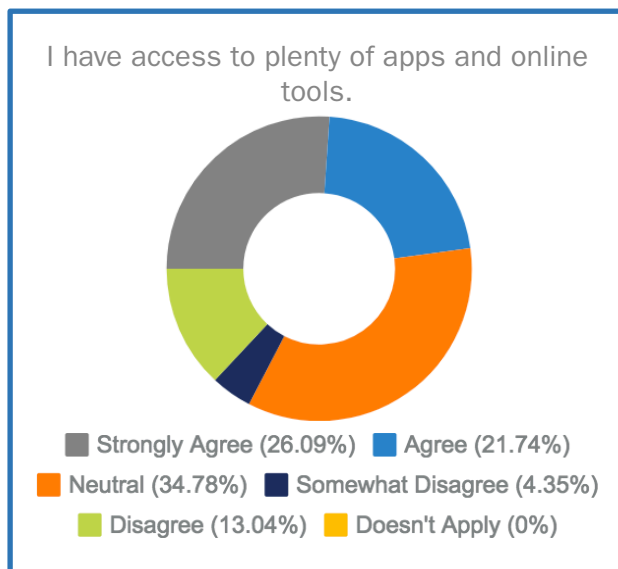
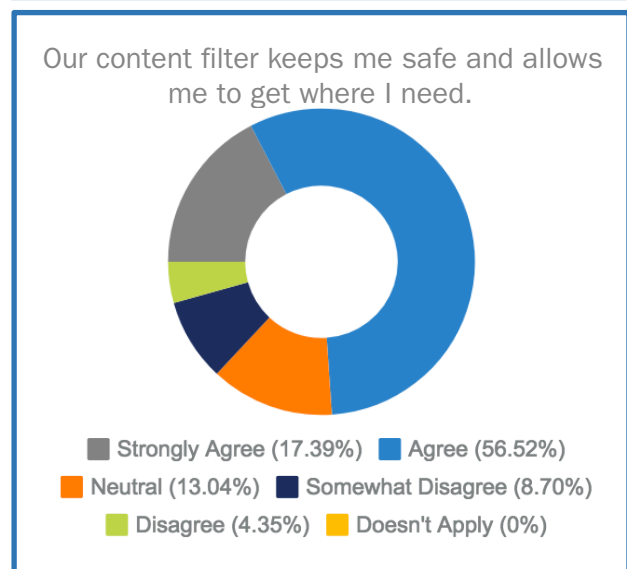
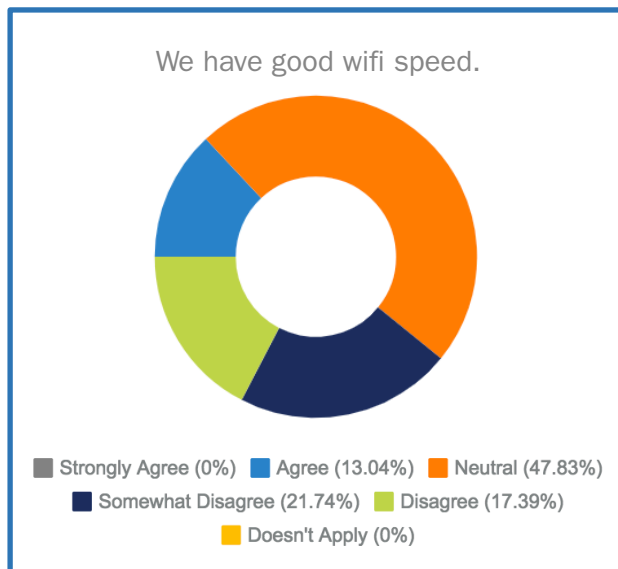
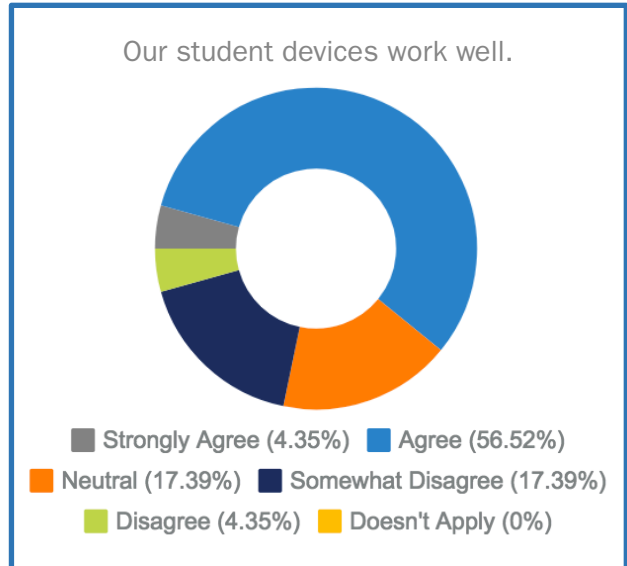
Response	Percentage (approximate)
Strongly Agree	15%
Agree	15%
Neutral	45%
Disagree	15%
Somewhat Disagree	10%
Doesn't Apply	2%



## Stakeholder Group 2

### Students

Students were asked 5 questions and asked to answer based on a 5-point Likert scale.



# Tiered Action Areas

## TIER 3

Tier 3 includes actions that are free or have minimal financial impact. Tier 3 Action Areas may include policy changes, procedure changes or a combination of the preceding to affect rapid, impactful changes for stakeholders.

### 3.1 Relax web filter settings

Students and teachers consistently commented on many educationally appropriate websites being blocked by the web filter. Many also commented on the lack of availability of YouTube. In the short term, the Team recommends surveying teachers to create a list of websites that are currently blocked that are inhibiting students' ability to conduct research on various class projects and access educationally appropriate sites. From this list, the Technology department can adjust the filter settings and in some cases simply whitelist sites so that they are accessible. Also, consider utilizing the [YouTube Whitelist feature](#) in the GSuite Control Panel, perhaps piloting at the High School. This feature allows administrators to restrict which YouTube videos can be viewed in a few different ways.

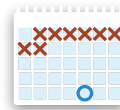
At the same time, the District should form a committee consisting of administrators, teachers, students, and parents to develop a vision and protocols for making decisions about filtering levels. Contacting other districts and learning about how they have approached the issue of internet filtering would be an excellent first step. Lastly, a system for making rapid, timely changes to the filter should be developed and all teachers should be informed about how they can have a site unblocked (or blocked). Assigning one or more staff, preferably in educational services, to evaluate the appropriateness of sites, and training them to make changes to the internet filter, would enhance the ongoing utility of the system.



**COST**  
\$0



**CHALLENGES**  
Organizing discussions with numerous stakeholders, developing an overall comprehensive protocol for deciding about educational appropriateness for a given site, and communicating with staff.



**TIMELINE**  
Begin Spring 2018, then ongoing



**EXPECTED RESULTS**  
Less disruption of educational process, better utilization of internet resources by students and teachers.

### 3.2 Adjust the wireless access points for better access

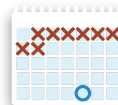
The current configuration of wireless access points is defaulted to an open bandwidth model, meaning that the first user to log in gets all of the bandwidth they need, the second user gets all they need, and down the line. This is especially problematic if users are engaging in high-bandwidth activities such as streaming videos or viewing media-rich websites. Ultimately, there will be users who can't access the network, because all of the available bandwidth is being taken. This is consistent with comments made by both teachers and students at multiple school sites. The Team recommends configuring each access point so that each client is allocated no more than 10 MBPS of bandwidth. Until more access points can be installed, this will help to alleviate the frequent experience of being unable to get on the network or being dropped.



**COST**  
\$0



**CHALLENGES**  
Minimal. The control panel for the access points should have a relatively easy way to adjust this configuration.



**TIMELINE**  
Spring 2018



**EXPECTED RESULTS**  
Better access and more consistent wireless experience for users.

### 3.3 Reconfigure the wireless network to separate students and adults, create a functioning guest network

Currently, students and adults exist on the same basic network, but they have different needs. Adults are currently utilizing some Windows services, such as file shares and drives, that necessitate them being placed in Active Directory and having needed permissions assigned to them. Students are simply utilizing GSuite (Google Apps), and they don't require any Active Directory (AD) permissions. Under the current schema, students must utilize dual logins - one for AD and then one for logging into Google. This dual login requirement takes valuable class time. To alleviate this, the Team recommends creating two VLANs, one for adults who need to log into AD, and one for students who can then be disconnected from AD and directed to their Google login. (The Lightspeed filter appliance can be [reconfigured to allow students to use their Google login](#) to get the appropriate filtering policies automatically.)

Create a new guest wireless SSID with a very tight filtering policy. Outside guests typically require few sites that they need to visit. In the event that someone has a need for a specific site, that can be temporarily whitelisted. Keeping the filtering protocol restrictive assures students and teachers will not preferentially use the Guest network instead of the SSIDs created for their use.



**COST**  
\$0



**CHALLENGES**  
Developing a network schema and plans for reconfiguring the network with minimal disruption for users.



**TIMELINE**  
Summer 2018



**EXPECTED RESULTS**  
Faster, more seamless logins for students

### 3.4 Visit existing 21st Century schools

Shifting the paradigm from teacher-centered to student-centered classrooms and incorporating the 4Cs (creativity, collaboration, communication, critical thinking) into inquiry-based activities is not trivial. Working with other school districts working on the same vision can reduce the heavy lifting significantly. The Review Team recommends identifying administrators and select teachers at each grade level to visit various schools who are currently doing these things in their classrooms, and then report back to the district about what they saw. Engaging in conversations about the activities observed, and then trying them in their classrooms is a great way for teachers to begin the shift. Numerous districts in the greater Ventura County area are engaged in this process. Oak Park Unified, similar to Moorpark in having grades K-12, would be an excellent choice for the first set of visits. Branching out from there might entail teachers from different grade levels visiting different schools and districts. After the visits, communicating in various ways (presentations at staff meetings, leadership team meetings, professional development opportunities) is essential.



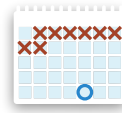
#### COST

Sub costs for teachers, mileage for driving, and lodging and meals if visits extend to overnight travel.



#### CHALLENGES

Identifying staff to make the visits, scheduling.



#### TIMELINE

Begin Spring 2018, extend into the 2018/19 school year.



#### EXPECTED RESULTS

District begins to develop examples of incorporating 4Cs into classrooms based on proven exemplars.

### 3.5 Faculty / Board meeting showcase

Raising awareness is the first step in establishing a vision of student-centered inquiry in classrooms. Utilize some time at site staff meetings and at board meetings to highlight and showcase teachers and students using 21st Century learning techniques and skills. Share the use of various apps and discuss how that has changed classroom practices, showcase student projects, and share examples of teachers developing inquiry-based projects.



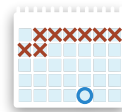
#### COST

\$0



#### CHALLENGES

Ongoing recruitment of teachers to try something, then share it with faculty.



#### TIMELINE

Fall 2018



#### EXPECTED RESULTS

Awareness of the vision of 21st Century Learning will grow. Schools will begin to identify teachers who are moving toward the District vision, and facilitate the first steps of collaboration in integrating various techniques and activities into classrooms.

### 3.6 Leverage existing expertise / resources for user support - "Techsperts / Champions"

The district no longer has a full-time TOSA position to provide site-level support for teachers. The need is significantly higher than the ability of the current TOSA to provide support. An alternative, low-cost model to provide a level of educational technology support to teachers is to allocate some funding as a stipend to one or more tech-savvy teachers at each site who are willing to spend some extra time at school working with teachers. Depending on the local situations, these teachers could be allocated pupil-free time during the day, or work after school to help other teachers with using various technologies in their classrooms. It should be noted that these teachers should not be called on to service support tickets, fix technology, and help with Level-1 tech support issues. Their job is to assist in integrating various technologies and teaching strategies into the classroom by helping teachers learn new applications and techniques.

It is also possible to leverage student expertise. This can be done at all grade levels. With a list of commonly used software applications and some training from Tech Services on low-level, first tier support needs, students can be utilized as a resource to help other students and to help teachers with how to use software and to connect projectors, etc. to computers when teachers need that sort of assistance. At the middle school and high school, setting up time during the day (at lunch, for example, or before and after school) where students can go to get help with various software applications both creates a great learning opportunity for interested students and leverages support capacity for staff.



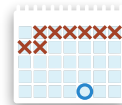
#### COST

Moderate, will vary based on stipend / scheduling model. At \$3,000 stipend, with one teacher per site, cost would be \$30,000.



#### CHALLENGES

Identifying teachers for each site, integrating their schedule into the school schedule to provide support for other teachers.



#### TIMELINE

Fall 2018



#### EXPECTED RESULTS

Improved support for teachers developing 21st Century pedagogies.

### 3.7 Twitter - #MUSD

Utilizing social media to promote a 21st Century vision has many benefits. It provides a way for teachers to share their innovations and experiences in class, allowing colleagues to connect and engage in collaborative work through multiple classes. It shares with the community and with educators outside the district events and innovations happening with the district, joining MUSD into a larger conversation. It connects teachers and administrators. Moorpark has a Twitter account, @MoorparkUnified, but with only 137 tweets and 162 followers, it hasn't been embraced by the Moorpark learning community as a social networking tool as it should. Conversations with leadership, principals, and teachers about using it is the first step towards using this social media tool as a powerful communication medium. Encourage all administrators to create a Twitter account for use as a professional learning tool. Keeping this account separate from a personal Twitter account is encouraged. Consider a hashtag, #21stCenturyMUSD,

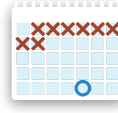
#MoorparkLearns, or something similar to convey the vision of 21st Century Learning, and encourage users to attach the hashtag with all tweets about happenings within the District.



**COST**  
\$0



**CHALLENGES**  
Communicating the purpose of the account, supporting new users in how to set up and use a Twitter account for professional purposes, assuring all users understand and follow District policies regarding sharing student names and pictures via social media.



**TIMELINE**  
Spring 2018



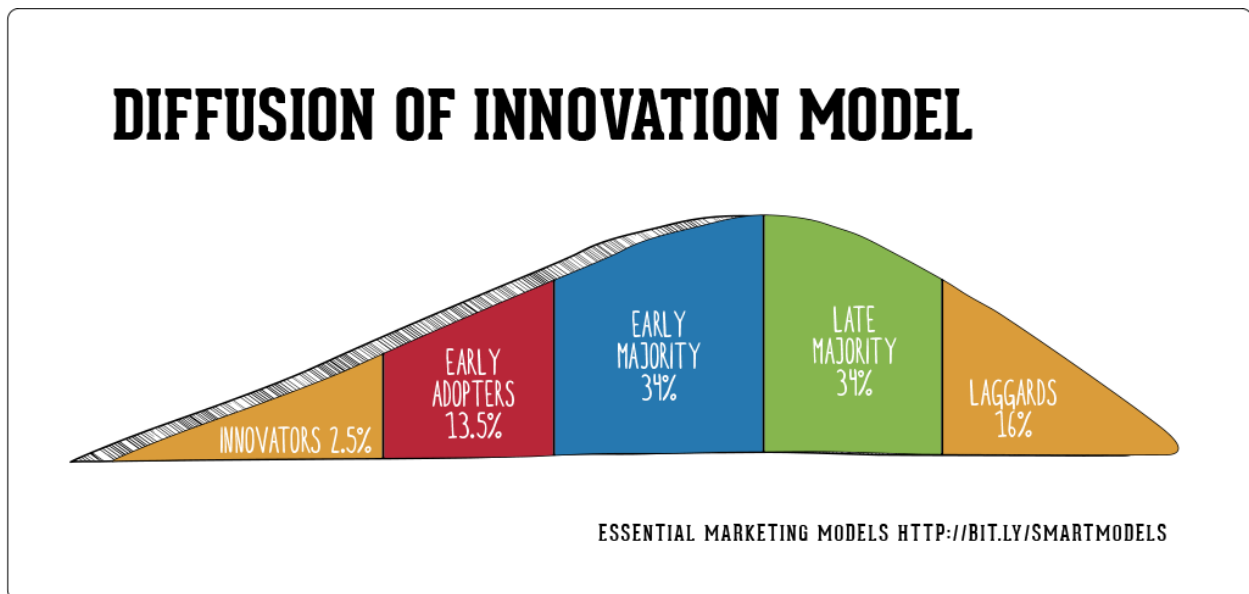
**EXPECTED RESULTS**  
Enhanced communication about Moorpark Unified's drive toward 21st Century learning models, increased awareness of innovations from teachers, great connections between Moorpark educators and the larger education community.



## TIER 2

Tier 2 Recommendations may require significant funds and are considered longer term capital projects.

Please heed the chart below when designing any kind of change, innovation implementation or rolling out new tools or curricula. Note that only 15% of any group is ready for a new idea in any setting. Districts should pilot and support the Innovators and Early Adopters, give them time to adopt and master the new element and then be available to assist the majority and laggards over a period of time:



### 2.1 Develop a comprehensive, ongoing, teacher-centered professional development program

*“Learning and innovation go hand in hand. The arrogance of success is to think that what you did yesterday will be sufficient tomorrow.” - Terry Pollard*

Ms. Pollard was a jazz pianist prominent in the ‘40s and ‘50s, recognized as one of the finest players of her time, although she was frequently overlooked by her more famous male counterparts. She never stopped innovating and trying new things. Her spirit of continuous learning is a perfect model for building a professional development program to support the district’s vision of graduating effective communicators and critical thinkers, and the spirit of her quote can be a guiding principle.

Recognizing that not all teachers are emotionally and technically in the same place with respect to a vision of 21st Century learning, it is not effective to develop professional development in a traditional “one size fits all” format. Opportunities for learning and growth need to be available to meet teachers where they are. Further, professional development needs to incorporate not only the opportunities to learn, but the ability to research what’s at the forefront in an ever-changing

landscape of teaching and learning. Some teachers - the innovators - can be recruited to research, try, and model successes. Some teachers will see what these innovators have done and want to try it, knowing that it worked in a colleague's class. Some teachers will be reticent (especially early on) to change what they feel has been successful for them over the years. Recognizing this, the District can differentiate the professional development program to include a component focused on innovation and learning about ideas new to the district regarding 21st Century Learning, and tailor offerings for all teachers based on where they are.

The JET Team recommends the District develop a multi-year PD plan for teacher excellence and innovation, as well as administrator and classified staff training, with four elements.

### **Element 1 - Lighthouse model for teachers**

These might be the same teachers who are part of the Learning and Innovation Committee, or they might be different, but these teachers should be ones who are willing to innovate and experiment. They would be provided resources in time and funding to attend conferences, visit schools, and bring back ideas that are consistent with Moorpark Unified's vision and working elsewhere. Upon returning, they would be expected to try these ideas in their classroom and share their findings - at faculty meeting showcases, perhaps, or during full-day PD scheduled throughout the district, or simply by publishing what they've learned and offering to share during an ad-hoc after school session. The key is they would be expected to make their work visible. The Lighthouse model focuses on a small group - 10% of the schools or teachers - and focuses adequate resources on that group so that they can implement the vision. These teachers, then, are charged with being the "lighthouses" for the district, to push the innovation and move the district forward. In subsequent years, the resources become allocated to a new group, and the model grows.

### **Element 2 - Teacher-centered PD**

Just like students being in student-centered classrooms, teachers need to be involved in teacher-centered professional development. With the goal of building 21st Century classrooms, the topics available to teachers need to be about integrating tech into the classroom (learning about tools and approaches for integrating devices into the curriculum, using the SAMR model as a basis for discussion), about moving towards a student-centered classroom (Project Based Learning, Inquiry-Based Lesson strategies), and about shifting the role of teachers from content disseminators to learning facilitators, increasing the work students do to include reflection as a continuous process in understanding their learning.



The JET Team recommends structuring district PD days to be “mini-conferences”, with multiple sessions on multiple topics, facilitated by experts both inside and outside the district, and allowing teachers to choose what sessions best meet their needs. From time to time, there’s a topic that all teachers need to visit. Schedule that topic multiple times through the day, such that all teachers can attend a session there, but still have agency to choose other topics.

To leverage PD opportunities throughout the school year, initiate a gamified Professional Development model available to all teachers. (An example of a gamified PD platform can be seen on the [Alludo Learning website](#)). Examples of districts utilizing a gamified PD program include Palm Springs Unified, San Jacinto Unified, Union School District, Grenada Elementary School District, Las Virgenes School District, Oak Park School District, and Rio School District.

Through the game, teachers would be free to explore whatever components at each level they felt were most applicable or most interesting to them. To “level up” in the game, they would need to complete a minimum number of tasks in several areas (developed by the District to support the vision and goals of a future-ready, 21st Century classroom). These areas might include 21st Century Pedagogy, various technology tools, collaboration with other teachers (both within and outside the district), etc. Playing the game would be completely voluntary, but could be used as an incentive for other things, such as committee memberships, conference opportunities, etc. Some districts provide incentives (T-shirts, conference registration, classroom swag, etc.) for completing each level of the game. Build the game through the Learning & Innovation Committee.

### **Element 3 - Administrators**

Professional development for administrators must be part of the vision as well. The Team recommends sending all Principals to professional development events that focus on 21st Century pedagogy as a great first step, followed by developing a gamified PD program, similar to the one for teachers, highlighting technology skills and tools from an administrator's viewpoint, as well as 21st Century pedagogy.

### **Element 4 - Classified staff**

The effective use of productivity tools and other software applications requires ongoing professional development. Without training, users frequently don’t even know the potential savings in time and efficiency they could experience. The Team recommends an ongoing strand of training in the major software applications used by staff - including the student information system, financial system, HR system, etc. as well as in GSuite.



An excellent method of developing this program would be to use the same gamified approach recommended for teachers in Element 2 (Teacher-Centered PD), centering the various pieces of the game on applications and skills that classified staff need.



### COST

\$8,000-\$10,000 for Alludo gamified PD platform.

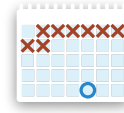
\$5,000-\$10,000 per Lighthouse teacher (travel, conferences, equipment, etc.)

Some funding for PD days, depending on needs to pay outside facilitators, supplies, etc.



### CHALLENGES

Funding, recruiting “Lighthouse” teachers, selecting the optimal events, monitoring classroom change, disseminating results to all staff, building the PD Game for teachers and administrators.



### TIMELINE

Build PD games: Spring & Summer 2018

Structure Lighthouse model, identify teachers: Spring 2018

Roll out new PD model: Fall 2018



### EXPECTED RESULTS

Dramatically improved classroom pedagogies and teacher leadership, improved collaboration, rapid assimilation of multiple skills and strategies directly applied to the classroom on a teacher-centered basis.

## 2.2 #GoOpen textbooks for high schools

Textbooks remain one of the most significant costs to a district, yet they are increasingly problematic from a pedagogical perspective. Traditionally, the scope and sequence of textbooks has been a main component in the scope and sequence of a class, even when teachers would prefer to work in a different way. Further, the information contained in a textbook is as much as seven years old as soon as it is published, and any errors or inaccuracies are permanently embedded in the text. Virtually all of the information contained in textbooks is available through internet searches in myriad forms that provide opportunities for students to engage in deeper, personalized learning, with information that is much more current. (Wikipedia is generally more accurate than textbooks and encyclopedias, and at least as accurate as science journals, according to multiple studies, including [LiveScience](#) and Nature.) Having a textbook in some form, however, provides teachers with a structure for their curriculum. Consider utilizing free (or nearly so) Open Resources and minimizing textbook purchases wherever possible. The first reason for developing open resources and moving away from textbooks is pedagogical. Instead of purchasing textbooks, use some of the funding (allocating the remainder to the fund for refreshing student devices) to pay teachers to collaborate on developing resources and inquiry-based materials for each subject area. This will promote a move towards the student-centered, future ready vision of the district in an expeditious manner.

The second reason is economical. A high school textbook for students can typically cost \$200, with a teacher’s edition being around \$500. Considering that each student would need as many as 5 physical textbooks, plus a class copy that stays at school - supplying traditional textbooks to students can easily run into hundreds of thousands of dollars - and most of the student work will be in the form of consumables or binder paper.

Moorpark could benefit greatly by participating in the Department of Education's [GoOpen](#) program. California is currently one of 20 states participating in the program, and there are 19 California school districts. The United States Department of Education Office of Technology supports districts seeking to use free and excellent resources like [Khan Academy](#), [CommonLit.org](#), and [CK-12.Org](#) in classroom settings. Free and open resources are also available from the [New America Project](#) and the [Learning Commons](#). The savings can usually support the device refresh budget.



### COST

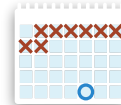
Potential savings.

At the high school level, a full range of textbooks (5 classes) can cost over \$2,000 per student. Spending half that on teachers to develop the resources saves \$1,000 per student, with incrementally increased savings in subsequent years.



### CHALLENGES

Identifying teachers to develop the materials, scheduling time for the teachers to work.



### TIMELINE

Summer 2018 and ongoing.



### EXPECTED RESULTS

More student-centered, inquiry based work for high school students, more use of 21st Century pedagogies by teachers.

## 2.3 Utilize Erate discounts to add wireless access points - one for every learning space

Without sufficient access points, adding devices for students to the network will be a dismal failure. The current wireless environment does provide coverage for most, if not all, of the district learning spaces. However, it does not meet the density needs for existing devices, and will fall far short of meeting the needs of a 1:1 deployment. An access point in each learning space assures that the density of client requests will not overwhelm the network, and configuring them to limit each user to 10MBPS, and adjusting their range to restrict coverage to the space in which they are installed (alleviating potential interference issues with neighboring access points) will create a reliable, robust experience for all users. Separating the wireless network into two separate VLANs (as mentioned in Growth Area 3) will eliminate the need for students to sign into the Active Directory architecture, which they don't need, and to use their Google login credentials as the only sign in necessary.

Using the Erate process, the district will benefit from significant discounts on the acquisition and installation of the additional access points. Several steps are involved in this process - a project management plan, adhering to the windows and deadlines of submitting the various components of an Erate proposal, should be developed very early in the process. The calendar for using Erate entails several steps, and will take, essentially, a year. In general, the process looks like the table below, and the District needs to plan well in advance of the desired installation date, paying attention to deadlines for filing various forms for Erate, and backwards mapping completion dates of various steps to coordinate with Board meetings to obtain necessary approvals.

Timetable	Action Step	Notes
Spring 2018	Project Conception	Determine scope of project, details about quantities, technical specs, etc. Should include board approval
Summer 2018	Request for Proposal (RFP)	Comprehensive RFP needs to include all elements required by District policy, clear delineation of all technical specifications and requirements (including compatibility with existing equipment), deadlines, evaluation matrix and process for final selection of vendor. Should include board approval
Fall 2018	Form 470 (notification of erate project), Release RFP	RFP must be open for at least 28 days from filing Form 470
Winter (Dec/Jan) 2018-19	RFP selection, Form 471 filing (request for funding)	Board must approve the selected vendor
Spring & Summer 2019	Notification of funding	Dates for notification of funding vary greatly
Summer & Fall 2019	Project Installation	



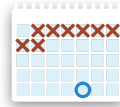
**COST**

Cost will be considerable, but depends on the number of needed access points, any new cabling needs, and the extent to which the District determines the need for outside services for installation. Utilization of Erate funding will minimize the expenditure, and using bond funding for the District share of the cost of the project would be recommended.



**CHALLENGES**

Reconfiguring the network to separate wireless networks for students and adults, developing the Request for Proposal for the project.



**TIMELINE**

Begin Spring 2018 to submit the project during the 2018-19 Erate filing period.



**EXPECTED RESULTS**

An enhanced wireless network capable of accommodating a 1:1 deployment of student devices.

## 2.4 Acquire sufficient devices to provide one internet-connected mobile device for every student

The single most important component in a 21st Century learning environment is the availability, on demand, of an internet connected mobile device for every student. Selecting the most appropriate device for each student encompasses a number of facets, including the age of students, how teachers envision utilizing the devices, existing devices and their compatibility with the new vision for learning. In conversations about device selection, the Total Cost of Ownership concepts outlined in Growth Area 5 is critical to the ongoing success of a 1:1 deployment. Acquiring devices that are durable and will have a four-year useful lifespan should be the benchmark. In middle and high school, the District has two options - provide a device for each student that they would use throughout the day, or installing devices in carts in each classroom. The former carries with it a decision about whether students will take their devices home, or developing logistics for them to pick it up and drop it off during the school day. Installing carts in classrooms typically requires purchasing more devices (there must be a full classroom set, even if some periods have less than the maximum number of students), and the potential of a reduced sense of student ownership (teachers will need to make sure students take adequate care of the devices). Also, selecting a device that can be easily shared among multiple students, as would be the case in middle and high school, makes Chromebooks and extremely attractive choice.

There are numerous conversations and considerable planning involved in a successful 1:1 deployment, which need to be done before the devices are purchased. Contacting several districts and learning from their experiences will make the planning process easier. Spending the time to plan is critical, but worth the effort. Moorpark has the time to do this planning while the project to upgrade the wireless network is underway.



### COST

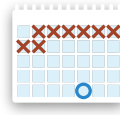
Depends on devices selected. Durable, robust Chromebooks from a number of manufacturers are available for less than \$300. Windows or MacOS devices are generally more expensive and have a higher Total Cost of Ownership. Younger students (K-1, for example) may prefer tablets. Both Android and iOS (iPad) tablets are available for less than \$300.

The cost for additional classroom carts also needs to be factored into the addition of devices. Depending on the cart selected, this can range from \$800-\$1,500.



### CHALLENGES

Developing a plan for successful deployment. Identifying funding sources.



### TIMELINE

Spring 2018: begin the planning process  
 Spring 2019: select and purchase devices  
 Summer 2019: configure devices  
 Fall 2019: distribute devices to students



### EXPECTED RESULTS

Internet ready devices available on demand for every student. Ability to fully deliver a 21st Century learning experience for all students and teachers.

## 2.5 Update classified staff computers

Interviews with classified staff and observations of the desktop computers being used by many staff, both at the district office and at school sites indicates significantly out of date computers in almost every corner of the District. In many cases, the existing systems are inhibiting productivity. The Team recommends installing new desktop computers at classified staff support stations, and installing relatively large, dual-monitor setups in all areas where these would be useful or desirable by staff members.



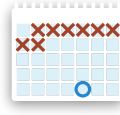
### COST

Depends on quantity. A highly serviceable desktop computer with dual 24" monitors can be found for less than \$800.



### CHALLENGES

Budget, researching the best system (utilizing a Total Cost of Ownership model), planning for the migration from the old systems (which likely have data stored on local hard drives) to the new.



### TIMELINE

Summer 2018



### EXPECTED RESULTS

Increased reliability and security, increased staff productivity.

## TIER 1

Tier 1 recommendations will result in significant organizational impact across all stakeholder groups, regardless of cost. Typically lead at the Superintendent or cabinet level.

### 1.1 Establish a long-term funding model for technology

Moorpark Unified's commitment to providing a device for every student and teacher is the cornerstone of moving curriculum and pedagogy to a 21st Century learning model. With inevitable wear and tear and changes in operating systems and software (eventually rendering old processors obsolete) the best a District can reasonably hope for with mobile student and teacher devices is about 4 years before they will need to be replaced. The funding to handle this replacement needs to be built into the District budget as a line-item annual expense. Devices are no longer a luxury, they are a commodity, a tool, on par with textbooks, utilities, and supplies.

The current market for a student device, whether it be a Chromebook, tablet, or Laptop PC, is around \$300 per device. This provides a highly serviceable, robust and durable unit that will meet the needs of most students. For high-end computing (art, video production, CAD/CAM design work), specialized labs should be built as needed. Amortizing the \$300 cost over four years results in budgeting \$75 per student per year.

Selection of devices is paramount, and should be done with a wide variety of stakeholders involved in the decision making. Critical, though, is to begin the conversation about device selection with clear articulation of District goals and how devices are to be integrated into the curriculum. The District must define as clearly and specifically as possible what students will be doing with the devices, then determine the best device type. As a final step, with a keen eye

towards Total Cost of Ownership, select two or three vendors, test their devices, and make a final selection. This process typically takes a year, so it should be conducted in the year prior to the last year of the lifecycle of the current devices, providing ample time to make a selection, plan a rollout, and perform the refresh of devices.

Office staff should not be excluded from this process. Many are more comfortable with desktop computers, which may be more applicable to their work, but they, too, have finite life spans and need to be replaced on an ongoing basis.

### **1.2 Utilize eRate to leverage funds for bandwidth and network improvements.**

Network equipment has a longer lifespan than computers, but firewalls, switches, and access points will eventually need to be replaced. Likewise, as the District moves towards more and more classrooms incorporating devices into 21st Century learning, additional internet bandwidth will be needed. Currently, the District has a 1 gigabit (GB) connection to the internet (through the County office of Education), with 1GB connections between the District Office and school sites. (The High School at Moorpark College has a 10MB connection.) Despite the current perception that utilization of bandwidth is low, the District should avoid having bandwidth be an impediment to teachers and classrooms moving forward. Therefore, bandwidth should be calculated based on a minimum allocation of 5 MB per student and teacher. For example, for 6200 students and 300 teachers, providing 5MB per user means the district ultimately needs 32,500 MB, or 32 gigabytes (GB) of bandwidth to assure every user the recommended minimum. Internal infrastructure needs to be scaled accordingly. Of course, this calculation assumes every user will be on the network at the same time, which is highly unlikely, so the ultimate need for bandwidth is considerably lower - perhaps a third of this amount. Further, the increased demand for bandwidth won't happen overnight, and increases in bandwidth and infrastructure upgrades should be phased over a number of years. As utilization in classrooms increases, stay ahead of the growth with upgrading to a 5 GB connection, eventually moving that to 10 GB, etc. The cost, especially after eRate discounts, is not that high.

Lastly, utilize an Erate consultant to assist in the process. Regulations are constantly changing, and in recent years have become more complex, to the point that tasking a staff member with this is not practical. Continuing to work with the District's Erate consultant will assure that all the regulatory stipulations are met, and the District is getting the maximum discounts for internet connectivity possible.

### **1.3 Search out collaborators**

Collaboration is a powerful learning tool, both for individuals and organizations. Explore and join (as appropriate) organizations that facilitate interaction with other districts sharing a 21st Century Learning vision. Organizations such as [EdLeader21](#) have districts across the country with similar visions about 21st Century learning, and can be a great resource for addressing the myriad challenges associated with making the changes the District envisions. District and site leadership need to develop their professional learning networks along these lines, contacting and engaging with like-minded leaders both within California and across the country. Exploring

offerings from organizations like [CUE](#), [Buck Institute](#), [Edutopia](#), or [IDE Corp.](#) can also be an avenue for connecting with other districts and people with experience helping districts with this journey.

#### **1.4 Incorporate the Technology Plan into LCAP**

One historical aspect of technology that doesn't fit with a future ready vision is that it has somehow been treated as a separate entity in schools. It used to be that students went to a lab and engaged in technology essentially as a thing in itself. Today, technology is the portal through which students access information, create learning artifacts in various ways, and communicate about their learning. It's a tool. But it's a relatively expensive tool, one that has to be incorporated into conversations at all levels in terms of pedagogy and resources. Moving the technology plan into the LCAP brings the conversation about technology into the conversations about learning, instead of making it a separate idea essentially outside the general planning for resources and direction that the LCAP entails. It brings the technology needed for learning into the conversation about establishing other learning priorities, assuring that the technology needs for any given initiative will be considered along with other resources under consideration. The Review Team recommends MUSD moves in this direction.

## Conclusion

The JET Team is pleased to provide this professional review, critical data and evaluation, and recommendations to assist Petaluma City Schools in moving forward towards achieving its Educational Technology, Professional Learning, and student goals. Every journey is rife with challenges, hiccups, and victories. Keeping a clear vision of the end goal, and engaging in dialogue at every level is the key to success. Our hope is this document provides some impetus and ideas for those conversations.

JET Review Team:

Joe Ayala

Mike Vollmert, Ed.D.

*\*As members of this study team, these consultants were not representing their respective employers but were working solely as independent contractors for CUE, Inc.*