FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

Alvord Unified School District

Technology Review

April 25, 2019

Michael H. Fine
Chief Executive Officer

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Allan J. Mucerino, Ed.D.
Alvord Unified School District
9 KPC Parkway
Corona, CA 92879

Dear Superintendent Mucerino:

In September 2018, the Alvord Unified School District and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement for a review of the district's technology program and services. Specifically, the agreement stated that FCMAT would perform the following:

1. Conduct an analysis of the district's state of technology including department staffing and the ability to support the district's information and education technology goals and make recommendations for improvement, if any. Interview principals, department directors and classified staff to gather data. Review and analyze the district's technology master plan with an emphasis on the integration with the Local Control Accountability Plan (LCAP).

2. Analyze the status of the following and make recommendations for improvement, if any:
   a. Leadership of technology department.
   b. Leadership of overall technology use in the district.
   c. Project management.
   d. Help desk system and ticketing process.
   e. Capacity to support educational-focused technology initiatives including Smarter Balanced testing.
   f. Technology support in the classrooms.
   g. Current and planned use of district-wide email.

3. Review the job descriptions and staffing, and organizational structure of the technology department, including any site-level support.

4. Make staffing recommendations based on the support level necessary to meet the district's technology requirements.

5. Review the department's preparedness of data backup and recovery due to a catastrophic event and make recommendations for improvement, if any.

This final report contains the study team's findings and recommendations in the above areas of review. FCMAT appreciates the opportunity to serve the Alvord Unified School District, and extends thanks to all the staff for their assistance during fieldwork.

Sincerely,

Michael H. Fine
Chief Executive Officer

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About FCMAT

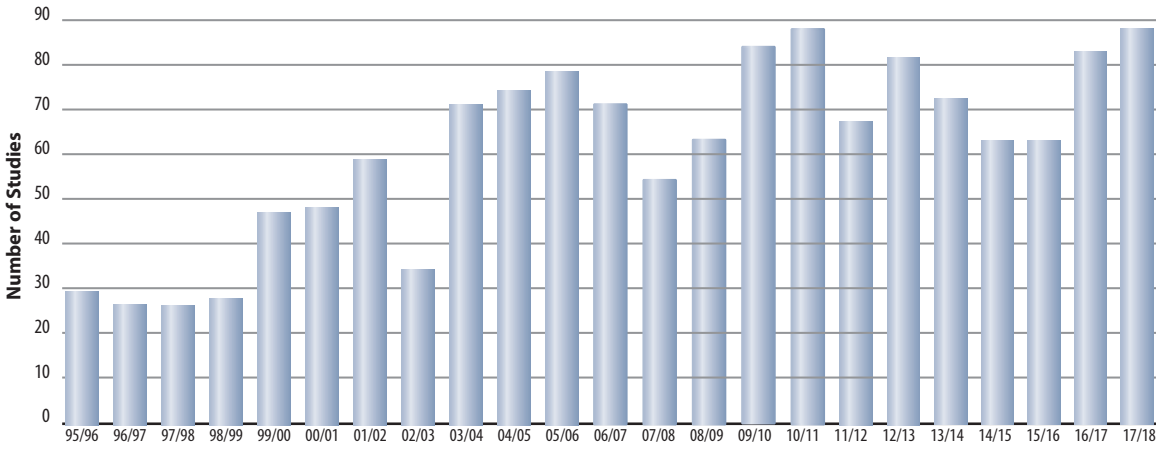
FCMAT's primary mission is to assist California's local K-14 educational agencies to identify, prevent, and resolve financial, human resources and data management challenges. FCMAT provides fiscal and data management assistance, professional development training, product development and other related school business and data services. FCMAT's fiscal and management assistance services are used not just to help avert fiscal crisis, but to promote sound financial practices, support the training and development of chief business officials and help to create efficient organizational operations. FCMAT's data management services are used to help local educational agencies (LEAs) meet state reporting responsibilities, improve data quality, and inform instructional program decisions.

FCMAT may be requested to provide fiscal crisis or management assistance by a school district, charter school, community college, county office of education, the state Superintendent of Public Instruction, or the Legislature.

When a request or assignment is received, FCMAT assembles a study team that works closely with the LEA to define the scope of work, conduct on-site fieldwork and provide a written report with findings and recommendations to help resolve issues, overcome challenges and plan for the future.

FCMAT has continued to make adjustments in the types of support provided based on the changing dynamics of K-14 LEAs and the implementation of major educational reforms.

Studies by Fiscal Year



FCMAT also develops and provides numerous publications, software tools, workshops and professional development opportunities to help LEAs operate more effectively and fulfill their fiscal oversight and data management responsibilities. The California School Information Services (CSIS) division of FCMAT assists the California Department of Education with the implementation of the California Longitudinal Pupil Achievement Data System (CALPADS). CSIS also hosts and maintains the Ed-Data website (www.ed-data.org) and provides technical expertise to the Ed-Data partnership: the California Department of Education, EdSource and FCMAT.

FCMAT was created by Assembly Bill (AB) 1200 in 1992 to assist LEAs to meet and sustain their financial obligations. AB 107 in 1997 charged FCMAT with responsibility for CSIS and its statewide data management work. AB 1115 in 1999 codified CSIS' mission.

AB 1200 is also a statewide plan for county offices of education and school districts to work together locally to improve fiscal procedures and accountability standards. AB 2756 (2004) provides specific responsibilities to FCMAT with regard to districts that have received emergency state loans.

In January 2006, Senate Bill 430 (charter schools) and AB 1366 (community colleges) became law and expanded FCMAT's services to those types of LEAs.

On September 17, 2018 AB 1840 was signed into law. This legislation changed the how fiscally insolvent districts are administered once an emergency appropriation has been made, shifting the former state-centric system to be more consistent with the principles of local control, and providing new responsibilities to FCMAT associated with the process.

Since 1992, FCMAT has been engaged to perform more than 1,000 reviews for LEAs, including school districts, county offices of education, charter schools and community colleges. The Kern County Superintendent of Schools is the administrative agent for FCMAT. The team is led by Michael H. Fine, Chief Executive Officer, with funding derived through appropriations in the state budget and a modest fee schedule for charges to requesting agencies.

Introduction

Background

The Alvord Unified School District is in Riverside County and encompasses the western portion of the city of Riverside, some unincorporated areas of the county and a small portion of eastern Corona.

According to Ed-Data (http://www.ed-data.org) the 2017-18 enrollment was approximately 19,000 students and consists of three comprehensive high schools with a combined enrollment of 5,722, four middle schools with a combined enrollment of 4,438, and 14 elementary schools with a combined enrollment of 8,536. Two hundred eighty students are enrolled at the Alvord Continuation and Alternative Education schools. Other operational facilities include the main district office, professional development center, nutrition services facility, and the former district office.

During the 2017-18 school year approximately 78.3% of students were eligible for the federal free and reduced-price meal program and 36.4% were English language learners. The unduplicated pupil count of free/reduced-price meals, English learners and foster youth during this same time was 15,524.

Study and Report Guidelines

FCMAT visited the district on November 27, 28, and 29, 2018 to conduct interviews, collect data and review documents. This report is the result of those activities and is divided into the following sections:

- Executive Summary
- Staffing Overview
- Leadership and Planning
- Help Desk
- Capacity to Support Educational Technology
- Classroom Support
- Email
- Data Backup and Recovery
- Job Descriptions and Duties
- Appendices

FCMAT's reports focus on systems and processes that may need improvement. Those that may be functioning well are generally not commented on in FCMAT's reports. In writing its reports, FCMAT uses the Associated Press Stylebook, a comprehensive guide to usage and accepted style that emphasizes conciseness and clarity. In addition, this guide emphasizes plain language, discourages the use of jargon and capitalizes relatively few terms.

Study Team

The study team was composed of the following members:

Scott Sexsmith
FCMAT Intervention Specialist
Bakersfield, CA

Laurel Krsek
FCMAT Consultant
St. Helena, CA

Steve Thornton*
Director of Information Technology
Menifee Union School District
Menifee, CA

Laura Haywood
FCMAT Technical Writer
Bakersfield, CA

*As a member of this study team, this consultant was not representing his employer but was working solely as an independent contractor for FCMAT.

Each team member reviewed the draft report to confirm accuracy and achieve consensus on the final recommendations.

Executive Summary

Staffing Overview

The Integrated Technology Support Services Department is led by the director II of integrated technology who reports to executive director of administrative services in the Administrative Services Division. The department is composed of three groups: IT operations, networks, and student information systems (SIS). Each is led by a management position that reports to the director II of integrated technology services. A total of 20 full-time equivalent (FTE) positions are assigned to the department.

Leadership and Planning

The director of integrated technology is an active participant in IT department projects, convenes weekly staff and team meetings, interacts with school site leaders, and leads the development of the IT department project list that guides the staff work. However, the director is not on cabinet and does not participate in regularly scheduled meetings with all cabinet level administrators.

The district should create a chief technology officer position to better serve the needs of the district though improved understanding, communication, and a focus on technology use to improve learning.

FCMAT was provided with a draft document titled Technology Executive Summary for 2018-21 that included an executive summary and three detail sections. The executive summary identifies three areas of focus: infrastructure, equipment, and PC refresh. The detail sections are labeled "Infrastructure," "PC Refresh" and "Classroom Chromebook Cart Proposal." This document lacks detail, funding sources, timelines and other critical components to be effective in guiding the district in technology use.

The district should develop a more comprehensive technology plan that is consistent with LCAP goals and as required under Board Policy 0440(a), District Technology Plan.

Help Desk

The Alvord USD technology help desk is staffed primarily by a full-time computer technician I who also provides primary technology support to staff at the district office. The IT operations manager supervises the help desk and provides backup support when needed. To track the requests for service the district uses Track-It! help desk and asset management software. Requests for service at the school sites are limited to a single point of contact at each site.

To improve the help desk system all users should be allowed to submit requests for service. This would allow for faster entry of requests and improved communication as to specific problems and resolution. The help desk software should also be configured to allow auto-routing of work orders, automatic work order status notifications to users, automatic work order escalation, work order submission by users via email, and automatic report generation for management.

Capacity to Support Educational Technology

The district lacks a consistent level of technical capacity for state testing across all sites. All students can participate in the annual state tests, but some sites have a markedly higher capacity for simultaneous testing and can thus compress the testing schedule into a shorter time frame. Sites with higher testing capacity have the advantage of greater flexibility in test delivery scheduling and the opportunity for more pre-test instruction.

To address this issue the district should develop a districtwide grade level test administration calendar for state testing and determine and document the minimum device access and network standards needed across all campuses to conduct testing following this calendar.

Classroom Support

Staff report that IT support at the classroom level is limited. They feel that technicians try to be responsive to service requests and to make progress on infrastructure deficiencies, but site staff are often unaware of any definitive plan to resolve long-standing issues with such things as limited wireless bandwidth and insufficient device availability in many classrooms.

A common complaint was the length of time between when an order of devices arrives in the warehouse to when those devices are in use, especially devices used for classroom instruction. IT staff acknowledge that the receiving and distribution processes are disorganized and that there are no standard expectations for deployment completion.

Site staff have not been surveyed comprehensively to determine their technology skill levels, their understanding of how technology can best support student learning, whether their classroom technologies are being used effectively, their level of satisfaction with technology support, their preferred professional development delivery models, or their recommendations for technology improvement in their classroom.

Email

Approximately four years ago the district implemented Google Apps for Education including Gmail for all staff. The FCMAT team was not provided a project plan for this initiative, but it was described by district staff as an effort led by a previous IT director. During fall 2018 the district implemented Microsoft Office 365 (O365) email for all staff including teachers. The technology department has completed the O365 email implementation and is also managing the Google Gmail service for students and teachers. No project plan is available for the Microsoft O365 implementation. The district now uses Gmail for instructional purposes in a secure, in-district-only environment, and staff utilize Microsoft-hosted email in a .org domain that is Internet accessible.

Staff interviews indicated that email currently works, but several staff at schools cited inadequate communication and confusion among their co-workers about the reasons for the various system changes, the abruptness of the changes, and their lack of input into the process. Some staff stated that the email groups are inaccurate, they may contain personal email addresses, and district communications intended either for broadcast or specific groups of employees return many "undeliverable" messages.

Data Backup and Recovery

The district has not engaged in any comprehensive disaster recovery/business continuity planning. The IT department is making an effort to make backup copies of critical data and has located the backup system remotely. However, fire suppression systems utilizing overhead sprinklers at both backup locations severely limit the viability of the district's data backup method.

Job Descriptions and Duties

Most reported duties are included in the job descriptions; however, some job descriptions could be improved by removing obsolete technology references and clarifying job titles. The lack of dedicated and cross-trained staff to support the network could be an issue in the case of a prolonged absence by the network administrator. Staff can be redistributed within the existing IT departmental groups to address this situation.

The position of director II of integrated technology support services should be eliminated and replaced with a chief technology officer position to better address the needs of the district related to technology planning, communications, and collaboration.

Findings and Recommendations

Staffing Overview

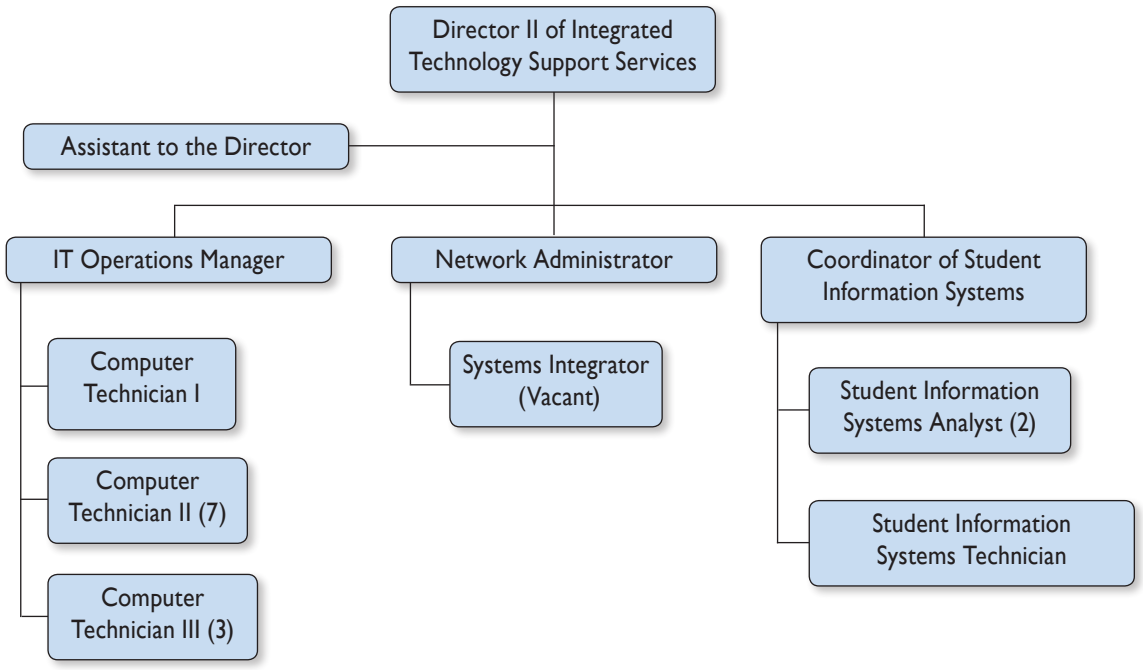
The Information Technology department is led by the director II of integrated technology who reports to executive director of administrative services in the Administrative Services Division. The department is composed of three groups: IT operations, networks, and student information systems (SIS). Each is led by a management position that reports to the director II of integrated technology services. A total of 20 full-time equivalent positions (FTE) are assigned to the department:

- 1 director II of integrated technology
- 1 assistant to the director
- 1 network administrator
- 1 IT operations manager
- 1 coordinator of student information services
- 1 computer technician I
- 7 computer technician IIs
- 3 computer technician IIIs
- 2 student information systems analysts
- 1 student information systems technician
- 1 systems integrator

The systems integrator position is vacant. More detailed information on staffing can be found in the Job Descriptions and Duties section of the report.

The department organization is illustrated below.

Current Information Technology Department Organizational Structure



Leadership and Planning

Information Technology Department

Turnover in top leadership at the district in recent years has resulted in shifts in organizational structure and staffing changes at the administrative level. The IT department has experienced changes in oversight from a director of innovation, to the executive director of administrative services, to the director of secondary education during 2017-18, and back to the executive director of administrative services since July 2018. The executive director of administrative services reports to the superintendent and oversees the maintenance and operations departments in addition to the IT department. There is no longer a director of innovation in the district. The current superintendent has been in the district since July 2018.

Interviews with various staff indicated that the leadership styles and priorities of each new administrator have resulted in uncertainty among the IT department and at school sites about district priorities for technology use and the role of technology in the educational environment. Comments from non-IT staff described a perception that IT is in disarray, that there is a lack of communication and a disconnect between IT and other departments, and a lack of trust between IT and other departments and within the department itself. Some IT and non-IT staff indicated that there has been progress toward collaboration within the IT department in recent months.

The director II of integrated technology is an active participant in IT department projects, convenes weekly staff and team meetings, interacts with school site leaders, and leads the development of the IT department project list that guides the staff work. However, the director is not on cabinet and does not participate in regularly scheduled meetings with all cabinet level administrators.

The FCMAT team received a project list and a draft document titled Technology Executive Summary for 2018-21, developed by the director of IT and department managers. The executive summary outlines the plans, budget and timelines for only a few items including infrastructure improvements, a teacher PC refresh, and classroom Chromebook cart proposal.

The director of IT has devoted significant effort to team-building and collaboration within the department and spends up to 50% of his time in meetings with IT department staff and approximately 25% visiting school sites. At the schools, discussions with administrators include problem solving and strategizing about technology issues from a school site vantage point, but there is no documentation of results of these interactions or other evidence of comprehensive districtwide technology planning.

Despite the teamwork within the department, IT staff interviews indicated that the list of priorities for technology projects that has been developed among staff is internal to the department and is not necessarily communicated to decision-makers at the cabinet level or throughout the schools. Several staff at the district and schools stated that some technology needs are not being addressed adequately and that the district lacks a unified vision for technology.

The PC refresh project for teachers has been impacted by district budget cuts, but IT staff do not fully participate in the decision-making process related to budgeting for the refresh project. Staff in the IT department indicated they do not feel empowered to propose technology solutions, and solutions that are initiated may not be successfully completed if funding is cut without an alternative plan in place. Some IT staff stated that they perceive their role as reactive rather than proactive.

Although IT department managers work closely as a team to develop action plans and facilitate projects, there is no consistent communication about technology use and department activities to all stakeholders in the district. District and school staff described the perception that the IT staff are reactive and uncommunicative. Although interviews indicated that IT staff are aware of and attempting to address many areas of need, IT visibility, activities, accomplishments and projects are not recognized and understood. This contributes to a lack of confidence in the performance and expertise of the IT department staff.

With no overall vision or unified approach, work completed or in process by highly qualified staff may be misunderstood and undervalued. Staff energy is devoted to critical issues, outages, and user requests, but their ability to prioritize is limited and may not align with other school or district administration priorities.

The IT director's access to other department leaders and ability to advocate for technology strategies and integrate technology into the district's educational programs is inhibited by the current organizational structure that places the IT department within Administrative Services with maintenance and operations. Successful technology departments are led by an administrator, often a chief technology officer (CTO), who can develop and sustain a culture of teamwork and high performance and can access the district's key education and administrative leaders. These technology leaders convene and conduct regular district technology committee meetings, oversee the development of a districtwide master technology plan, participate in cabinet, and report directly to the superintendent.

The organizational changes at the district over time have resulted in the SIS team being situated in different departments under various directors. According to various staff, there is a disconnect between SIS staff and the IT department and confusion about the rationale for placing SIS management within IT. SIS staff manage the data quality, produce state and federal reports, and train users. Many dependent data systems supported by the district's student information data reside in the primary student information system, Aeries. Some are educational and some, like the child nutrition system, are operational or administrative. SIS staff ensure that data interaction occurs between Aeries and other automated database systems.

Many districts place the data support staff, including SIS staff, within the IT department. The underlying network services and hardware requirements, user access control, data security, and the increasing interaction of data between systems make these functions an integral component of IT departments. In districts with a CTO who oversees a comprehensive, inclusive IT department, the SIS staff is able to interact with every group that may be relevant to their work.

Recommendations

The district should:

1. Restructure the organization to replace the IT director position with a CTO position reporting directly to the superintendent. (Sample job descriptions are included in Appendix B.)

Overall District Technology Use

School staff indicated they are uncertain about the technology priorities of the district's leadership. They stated they are generally aware of the initiatives outlined in the IT department executive summary, but they had not seen an executive summary document or any accompanying technology master plan. Opportunities to discuss technology issues occurred in the past when the district technology committee met, but the committee was inactive at the time of the FCMAT visit and future meetings were undetermined.

When the IT department was overseen by secondary education, the educational services staff and the IT department enjoyed close collaboration and communication. Interviews with IT staff indicated their appreciation of the frequent dialogue that occurred under this structure. School and district staff commented about a lack of interaction under the current structure and a general isolation and lack of knowledge about district priorities for technology integration into the instructional program.

Without a district vision and comprehensive plan for the integration of technology into teaching and learning, school administrators establish their own site priorities for technology use. Disparities become apparent as some administrators invest more in their educational technology programs than others. School site staff stated that this impacts their educational program as their incoming students may not have had a similar experience with technology in their prior school. School and district staff indicated there is a lack of guidance from the district about selecting and evaluating educational software.

The Local Control Accountability Plan is the guiding document for district educational programs. The district LCAP for 2018-19 contains two items specifically related to technology:

> Goal 1, Conditions of Learning
>
> Action 1.6
>
> Continue replacing outdated computers used for instruction & assessments at sites as needed. Outdated computers were identified at schools across the district.
>
> Goal 2, Pupil Outcomes
>
> Action 2.9
>
> Maintain additional instructional technology staffing support. Support of technology staff continued with the addition of 1 FTE IT tech I, and the reclassification of 6 FTE from IT tech II to tech III.

The investment in technology support staff and school computers addresses immediate needs but does not reflect a long-term vision for technology use throughout the organization or the strategic importance of technology in supporting every aspect of the educational program and district operations.

Successful districts have developed comprehensive technology plans that include short and mid-term goals and actions that align with overall district LCAP goals and designate funding. These districts also have active district technology committees that participate in planning and development of a technology master plan for the district, and that assist with communication to and from their constituents about technology issues and initiatives.

Recommendations

The district should:

1. Ensure IT department leaders participate in other district department meetings to ensure communication and alignment of initiatives.
2. Convene regular meetings of the district technology committee to promote interaction and communication between schools, departments, and IT.

Technology Plan and the Local Control Accountability Plan

Technology Plan

The federal E-Rate program began in 1997 to provide significant financial support for the advancement of technology use in schools and libraries. If used properly, these funds can drastically reduce districts' costs to maintain network infrastructure and connectivity. Since its inception districts were required to develop and maintain a comprehensive technology plan to qualify for funds. The importance of the plan increased as other federal and state grant programs adopted its use as a qualifying requirement. The Local Control Accountability Plan (LCAP) is now the overarching document determining the use of funds to support student achievement including support of technology. At the same time, E-Rate has dropped the requirement that districts maintain a comprehensive technology plan to qualify for funds. Districts may now include in the LCAP their goals and actions for technology enhancement and integration in support of student achievement. A separate working technology plan document can then provide the details for accomplishing the goals and actions outlined in the plan.

FCMAT was provided with a draft document titled Technology Executive Summary for 2018-21 that included an executive summary and three detail sections. The executive summary identifies three areas of focus: "infrastructure, equipment, and PC refresh." The detail sections are labeled Infrastructure, PC Refresh and Classroom Chromebook Cart Proposal. Tables in each section identify the costs associated with that area of focus. Some of the tables are incomplete.

Infrastructure

This section of the plan document focuses on the need for additional wireless access points and edge switches throughout the district and states that progress has "already begun to create a robust technology infrastructure." The plan does not indicate what has been completed and what still needs to be done. It is not clear from any documentation or interviews conducted with staff that a plan for project completion exists. There is no cost data associated with this focus area.

The FCMAT Technology Questionnaire completed by district IT personnel states that "classrooms and offices are serviced by 802.11g and 802.11n Wi-Fi access points." The Technology Executive Summary plan does not indicate what performance standards are expected regarding simultaneous access and overall bandwidth per classroom and site. There is no indication of what engineering resources will be used to ensure that the completed project meets or exceeds performance expectations.

PC Refresh

This section describes the district's intent to replace desktop computers for all 810 teachers and 189 certificated administrative staff within two years and replace monitors as needed in the third

year. The per-unit cost detail is reasonable. The plan does not clarify what positions the certificated administrative group includes. There is also no evidence in the plan nor in any supporting materials provided to FCMAT of an accurate inventory of existing equipment with acquisition dates. An inventory is necessary to corroborate the replacement quantities called for in the plan. Interviews with staff revealed that existing teacher workstations are very old, highly susceptible to malware, and incapable of utilizing the current version of the Windows operating system or application software. Malware infections on individual workstations are a constant threat in this environment and can harm the entire network.

Replacement of these devices is warranted due to their diminished capacity relative to current requirements, high repair rate, and the risk of network instability posed by devices that cannot be secured.

Classroom Chromebook Cart Proposal

This section states that "AUSD will strive for one cart of mobile devices per teacher classroom district wide in grade K-12." The narrative is followed by a table showing various options to reach a 1:1 or 1:2 cart-to-classroom ratio in grades K-12. Options include:

- Provisioning all new Chromebook carts for grades K-12; or
- Provisioning new Chromebooks in grades 7 through 12, and deploying student PCs that have been converted to Chromebooks in grades K-6.

The cost detail is not complete. Converting a PC to a Chromebook and placing it into the district's Google domain requires the purchase and installation of Neverware software, or functional equivalent, on each device and provisioning a Chromebook Education license for each device. Staff indicated that the district has already purchased Neverware software. The remaining cost to convert existing PCs to Chromebooks is the cost of the Chromebook education license for each device and the cost of the carts. The conversion will also require technician time to manually convert each device. The Neverware software licensing must be renewed annually, and there is no indication that this ongoing cost is factored into the cost details.

Staff interviews revealed that the district has purchased or is planning to purchase used empty carts from another district, but it isn't clear whether these will be used only with the converted student PCs or whether they will house new Chromebooks.

The plan includes cost calculations that assume the need for 40 devices in each classroom at all grade levels. It is not clear how the district arrived at the need for 40 devices in each cart or what the curricular needs are for Chromebooks at each grade level.

The district's Technology Executive Summary for 2018-21 does not, in its current form, provide enough detail to serve as a tool for achieving technology-related LCAP goals, or for guiding technology work priorities, organizational design changes, and expenditures. It is also insufficient to serve as a tool to communicate with stakeholders so that stakeholder expectations match organizational capacity.

Related project documents provided to FCMAT and staff interviews describe an environment where everyone seems to be working diligently but there is little consensus within and outside the technology department on how the department's work enhances student achievement, how to prioritize that work, and what outcomes are expected.

The technology plan makes no mention that technology users will need to learn how to use the new technologies provided to them and does not indicate how the district will offer professional

development to staff. The plan does not provide an estimate of the costs associated with needed professional development for staff in the use of these technologies.

A complete technology plan should include a vision of technology that serves to accelerate student achievement, and should explicitly state how work should be prioritized and what outcomes can be expected.

Technology plans should provide enough detail of the expected outcomes, current conditions, and gaps between them so that it may serve as a roadmap for success. For example, an accurate inventory of devices to be replaced in both the PC refresh and Chromebook cart proposals is needed to accurately estimate the cost and time to complete these projects. Districts often rely on established templates to ensure their plan is comprehensive and consistent throughout. The Los Angeles County Office of Education has developed an online template that is free for any district to use called the LACOE Technology Plan Builder (https://tpb.lacoe.edu/tpb/).

The quantity and types of devices deployed for students should be driven by curricular need. For example, if it is determined that the expected use of technology in TK through second grade is limited to small group instruction or to full class instruction during designated periods of the day that can be coordinated with adjoining teachers, a 40-unit cart dedicated for each of those classes may not be warranted.

The Wi-Fi project is a special case due to its complex and highly technical nature. Plans for projects of this nature should include performance outcomes based on the intended use in each area (e.g., higher density in classroom locations, lower density in office and other common areas). This can drive decisions about the quantity, capacity, placement and overall design of project components. Districts often utilize an outside engineering company to thoroughly review the current status and develop a technical specification that can be used to produce an request for proposal (RFP) so that the project can be completed comprehensively and in a timely manner in coordination with district network specialists and the technology director.

Technology enhancement projects often involve new devices, software, and procedures for users. These changes can lead to temporary inefficiencies and user frustration. Technology projects should always consider the effect of change on users and mitigate the negative effects of change by allocating resources for targeted professional development. Several comprehensive survey tools are available to school districts to gauge user readiness including BrightBytes Technology and Learning Module (https://www.brightbytes.net/techlearning). Tools like this can be run annually to track progress over time and guide ongoing professional development for all users.

Local Control Accountability Plan Integration

The district's 2018-19 Local Control Accountability Plan and Annual Update is posted on the district's website and was approved by the governing board on August 2, 2018. It addresses district educational technology in three principal areas.

Action 1.6

This action addresses the need to fund replacement of older computers. It states, "This action is principally directed towards unduplicated students and is effective in increasing or improving services provided to these students. By providing Alvord's unduplicated students with access to computers and related technology, students will benefit from the more intellectual uses of computer technology and learning state academic standards in math, language arts, science, history, world languages, and English language development." (2018-19 LCAP, page 163)

The LCAP indicates that outdated computers were identified at schools across the district and that replacement began with the oldest Windows XP systems. It also states that the district will need to provide additional funding to purchase technology. The technology plan may align with this LCAP action, but it isn't clear whether it addresses the technology plan's focus on a PC refresh for certificated staff or whether it addresses the focus on a classroom Chromebook cart proposal, or both.

Action 2.9

This action addresses the need for additional staff to support technology initiatives. It states, "This action is principally directed towards unduplicated students and is effective in increasing or improving services provided to these students. Unduplicated student groups benefit the most from having access to instructional technology resources and devices resulting in improved learning for these student groups. In addition, equitable access to and use of computers by educationally disadvantaged students helps to close the achievement gap and boost student engagement. The additional staff added to maintain working technology is critical and effective in providing this equitable access to technology for unduplicated students." (2018-19 LCAP, page 165)

The LCAP states that the additional instructional technology staff needed includes one FTE of IT technician I, reclassification of six FTE of IT technician II to technician III, and addition of one manager. According to the district's LCAP, this was accomplished during the 2017-18 fiscal year. The technology plan does not address staffing needs at all. However, interviews with staff and documentation provided to FCMAT for this study support the district's intent to add staff and make organizational changes.

Action 3.15

This action addresses the need to support family and student engagement with stipends provided to teachers. It states, "This action is principally directed towards unduplicated students and is effective in increasing or improving services provided to these students. Alvord teachers participate in and facilitate effective opportunities for both student engagement and parent involvement to promote school connectedness with a focus on targeting needs of unduplicated students. Schools continue to improve the quantity of parent services while featuring family involvement in academics. Both student engagement and parent involvement positively affect academic achievement, especially for low income students." (2018-19 LCAP, page 168)

The LCAP indicates that stipends were originally intended for teachers serving as ATPs (Action Teams for Partnership) but were expanded to include a Google for Educators stipend with the intent of increasing student engagement in academics. It states that actual expenditures for implementing the action were much higher than originally budgeted.

The intent of the stipends seems to have been for stipend teachers to provide unspecified services to families and students, but it is unclear what standards for success are in place. FCMAT was not provided with documentation or any information in staff interviews that describes the nexus between staff receiving Google for Educators certification stipends and any specific outcomes for student engagement in academics. While this item is not mentioned in the technology plan, staff indicated that designated teachers on each campus support student use of technology including ordering replacement parts, making device repairs, and conducting other activities normally provided by technology department staff.

Recommendations

The district should:

1. Develop a more comprehensive technology plan that is consistent with LCAP goals and required with Board Policy 0440(a), District Technology Plan.
2. Include in the new plan a goal to engage an engineering company to develop desired network performance requirements and assist in developing a Wi-Fi upgrade RFP.
3. Clarify components of the LCAP that specify the use of funds that support technology integration and their expected outcomes.
4. Include in both the technology and LCAP plans a goal to utilize a survey tool to measure user readiness to support technology-enhanced instruction and learning.

Project Management

During the FCMAT team site visits, several IT projects were presented by IT staff as being in process, including:

- Microsoft Active Directory management tool
- Automated user account management system
- Remote desktop support systems
- Learning management systems
- Teacher PC refresh program
- Chrome OS implementation

Recently completed projects reported to FCMAT included Microsoft Office 365 email and Google Apps for Education including Gmail.

The IT department maintains a list of projects that has been developed in the department during team and staff meetings. However, these are primarily related to infrastructure hardware upgrades and replacements, and network systems implementations.

The district email migration from Google Gmail to Microsoft Office 365 was cited during interviews as an example of a highly visible IT project that had districtwide impact but was not well planned or communicated and resulted in confusion and communication problems in district schools and offices. Also, school site staff stated that the teacher PC refresh project was launched without input from the schools.

Although IT staff skills and teamwork ensure successful technical implementation of new systems, the high-impact implementations like new email systems may be perceived as unsuccessful without a project plan that is communicated and developed with participation by all groups.

A well-communicated project plan ensures participation by stakeholders, adoption of realistic timelines and risk assessments, and budget support. Confusion is minimized, and likelihood of success is greatly increased. Project plans with measurable outcomes provide tangible data for evaluation and review and may increase buy-in and support for future projects. Many districts are adopting project management tools to facilitate plan development and communications in every department. A single, districtwide template and system for tracking projects provides a unified framework for planning, developing and evaluating new initiatives. . Without this plan, the many initiatives that must be undertaken in successful IT operations are at risk of delay or failure.

Recommendations

The district should:

1. Identify, create, and maintain a comprehensive list of current and pending IT projects and develop project plans, including the staff resources needed and prioritization and funding for each.
2. Investigate project management tools for use throughout the district.
3. Ensure that all technology plans are communicated to all district staff on an ongoing basis.

Help Desk

The Alvord USD technology help desk is staffed primarily by a 1.0 FTE computer technician I who also provides primary technology support to staff at the district office. The IT operations manager supervises the help desk and provides backup support when needed. The technology department secretary also provides backup support, as do other technicians who may be in the office when calls come in and the primary staff member is unavailable.

The help desk is available for phone call support from 7:30 am to 4:30 pm.

The district uses Track-It! help desk and asset management software from BMC Software. Track-It! is full-featured and can be configured to integrate with the district's Microsoft Active Directory system to automate access by users and technicians and can autoroute tickets to technicians based on user location, request type, and other criteria. It can be configured to allow creation of work orders by email, can create automatic notifications of work order status to users and technicians, and can auto-escalate tickets to specialists or technical managers based on several criteria. It also includes numerous reports to track such things as open work order aging, response time by technician, and completed work orders by location. The system can be configured to regularly send reports to designated individuals (e.g. technology managers, site administrators, etc.). Track-It! can be licensed for individual or concurrent access by technicians, and user licenses can be for all users or for limited access by designated users only.

The district opted for a more limited licensing model that precludes work order submission by users. Instead, the district elected to identify a single point of contact for each school site and department, typically a secretary, who submits and tracks technology work orders on behalf of the users at their location. All work orders are submitted to a general queue that is reviewed by the computer technician who is responsible for the help desk system. This person makes the decision to resolve the work order themselves if possible or to route it to another member of the technology team to be resolved.

IT staff indicated that the single point of contact per location was intended to ensure that site/department management were aware of the work orders being submitted by their staff and to prevent the help desk system from being overwhelmed by potentially frivolous, duplicate, or otherwise inappropriate work order requests by users. The submission of work orders to a single queue and manual routing to technicians was a means to ensure that the most appropriate technician was assigned to resolve the work order.

This approach makes the help desk workflow inefficient due to the reliance on the single point of contact at submission on one end and work order routing at the other end.

Work order submitters at each school site and department do not communicate with their users in a consistent manner and do not have the same capacity to resolve the simpler technical issues that precede normal ticket submission. Their own workload (or absence from work) sometimes limits their ability to respond to user requests and work order submissions. This leads to service delays that are outside the control of the technology department.

It is also inefficient to rely on a single individual to scrutinize each work order as it arrives and either resolve it or escalate it to another team member. This individual has other department responsibilities and cannot perform the routing function while attending to these other responsibilities. This adds response and resolution delays that can be avoided through automation of the routing function.

The Track-It! system can be configured to notify users and technicians of changes in work order status including the ability to automatically email the submitter that the work order has been resolved. It was not clear whether this setting has been configured, whether submitters are expected to log in to the system periodically to review open ticket status, or whether some other means is used to communicate with submitters when work orders have been resolved. Users reported to FCMAT that they lack clear knowledge of how or whether a given work order was resolved and are limited in their ability to determine the status of open work orders.

The Track-It! system includes numerous reports that can be reviewed regularly by management, used in staff meetings, or accessed by the technology committee. These reports can be helpful in identifying common problems, including the need for professional development or self-help tools that can help users develop greater independence and higher satisfaction with technologies. It was not clear that these reports are utilized in any kind of coordinated manner or that they are regularly analyzed to drive decision making.

Primary responsibility for the help desk is assigned to a computer tech I who also provides technical support for phoned-in support requests. This position is expected to have enough technical skill to analyze and either resolve or escalate work orders to the appropriate support person.

This help desk position also provides primary support to district departments. District users have a reasonable expectation that their primary technical support person should have familiarity with district-specific technologies they rely on. These technologies often differ from systems and devices that support the general user population and include employee onboarding/offboarding processes, the employee badge system, the sub-calling system, Live Scan system, the conference facilities request system, nutrition services software, networked printers, and more. District staff indicated to FCMAT that technology staff are not as skilled at resolving issues with some of the district-specific systems as they are with more general technical support issues. IT staff would benefit from greater familiarity with these systems to enhance their support capability.

All technicians working at school sites are either computer technician II or computer technician III. Because of the disparity between the school site technician position and the help desk support position, it isn't possible to rotate the help desk responsibility among staff. If this disparity didn't exist, technology management could have the added flexibility of cycling technicians through the help desk responsibility, enabling management to enhance professional development of all technical staff and monitor skill sets with greater precision.

The hours that the help desk is available is typical for many technical support service operations. User support could be enhanced by extending phone support hours so that users can reach technology support when the first site person normally arrives and the last district office person normally leaves.

The Track-It! work order system is typical of many full-function systems, but the district does not fully engage all these functions to its advantage. Some of these functions include full integration with the district's Microsoft Active Directory management system to allow autorouting of work orders, automatic work order status notifications to users, automatic work order escalation, work order submission by users via email, and automatic report generation for management. Some of these functions are only available with an enhanced license.

Several technology department and user staff member representatives reported concern about having users submit work orders directly. They felt that users might swamp the system with potentially frivolous, duplicate, or otherwise inappropriate work order requests. This can occur in the beginning, especially as users are learning the system, becoming familiar with pre-submission

support steps, and as they submit repeated work orders for the same problem when resolution doesn't occur quickly enough. Over time, these problems can be mitigated by communicating in a focused manner with the user community. Examples of this include:

- Set a policy that technicians enter an initial response in each work order within 24 hours and ensure automated notifications are enabled in the work order system.
- Close duplicate tickets quickly with a work order response entry referencing the original ticket, then escalate the original ticket if appropriate.
- Provide searchable self-help tools for common problems that are easily accessible from the website and market these to users frequently via blog posts, emails, training sessions, and individual conversations.

When users experiencing a technical problem can submit a request for help directly, communicate with technical support providers directly, and receive status notifications directly through the resolution process, they have greater participation in the process and are more likely to report satisfaction with technologies they use.

Well-run IT departments rotate help desk service among highly skilled technicians with field experience and good interpersonal and analytical skills. These staff members are well-versed in the various technologies used throughout the district and can resolve many support issues directly or by remote access to the caller's device. They are also sufficiently knowledgeable to be able to appropriately escalate calls they cannot resolve.

Help desk support hours should be configured so that calls are answered at all hours when technology users are typically working.

The most effective school district technology departments utilize a full-featured work order tracking system that integrates with the district's directory management system, autoroutes work orders based on location and other criteria, ages work orders, allows users to submit tickets and receive automatic notification of work order status, and includes numerous reports that can guide decision-making.

Recommendations

The district should:

1. Rotate help desk staffing among skilled technicians with field experience.
2. Stagger district technology office staff work hours to increase help desk availability.
3. Provide training opportunities for technical support staff at the district office in the use of department-specific technologies.
4. Configure the work order management system to enable additional useful features.

Capacity to Support Educational Technology

The district's sites lack a consistent level of technical capacity for state testing. All students can participate in the annual state tests, but some sites have a markedly higher capacity for simultaneous testing and can thus compress the testing schedule into a shorter time frame. Sites with higher testing capacity have greater flexibility in test delivery scheduling and the opportunity for more pretest instruction. Education staff reported that last year's simultaneous testing capacity ranged from three weeks to complete all testing (at Twinhill Elementary School) to nearly three months (at Villegas Middle School).

Simultaneous testing capacity can be affected by several factors, most especially student access to testing devices and wireless bandwidth. Both factors vary across campuses throughout the district.

Primary responsibility for state testing in the district rests with an instructional specialist working in the Educational Services division who monitors testing readiness, coordinates site testing protocols and schedules, and coordinates with the technology department.

The IT department is not directly responsible for administration of the state tests. Rather, its responsibility is to ensure that existing testing devices at each campus are configured properly and available and that the existing wireless network is optimized to accommodate testing network traffic. Department management did not report that any adjustments are made to technology support priorities or procedures during testing except to be generally aware of testing dates to minimize impediments to testing progress caused by technical issues with devices or the network. More generally, the IT department is responsible for upgrading existing devices and wireless bandwidth within funding and project capacity limits to make improvements in simultaneous testing capacity over time.

A few years ago, the district rolled out many HP Streambooks for use as student devices across the district. These are compact laptop computers that run the full Windows 10 operating system with limited storage space and system memory. The intent of offering these devices over Chromebooks was to provide students and teachers with a familiar environment (Windows) that would be useful online or offline. IT staff reported that some teachers continue to prefer this environment. However, the district determined that the Chromebook platform was simpler to manage and made the same or better use of online classroom resources that augment and enhance classroom instruction. The district then began a project to upgrade the existing Streambook inventory with special software (Cloudready OS by Neverware) that converted them to Chromebooks. As funds become available, these devices are being augmented with purchases of new Chromebooks. The district's intent is to eventually standardize on a testing and learning environment that is based exclusively on Chromebooks.

School site and instructional services leadership do not identify the IT department as a partner in the planning and execution of the state tests, and there is no evidence that daily coordination between instructional services, technology, and school sites is part of the testing protocol. Technology staff reported that testing success is not a priority for the IT department and that no effort has been made to have them work proactively to maximize testing success and achieve device access parity across the district during testing.

Districts that are successful in supporting technology use design and maintain testing environments across the district that are reasonably similar in terms of access capacity to allow grade level testing to occur over similar time periods at all campuses.

These districts ensure that educational services and technology departments coordinate closely regarding the administration of state tests and student learning by developing common priorities, having specific responsibilities for each department, and conducting ongoing communication between them regarding curriculum delivery, test preparation, campus testing schedules, technical impediments, etc.

Recommendations

The district should:

1. Develop a districtwide grade level test administration calendar for state testing and determine and document the minimum device access and network standards needed across all campuses to conduct state testing within that calendar.
2. Prioritize network upgrades at campuses where current access capacity is insufficient to conduct state testing within a common test administration calendar.
3. Prioritize acquisition of new devices and conversion of existing HP Streambooks to Chromebooks at campuses where current device access capacity is insufficient to conduct state testing within a common test administration calendar.
4. Consider moving devices in the short term among campuses during the test administration window to achieve device access parity if it is not achievable through acquisition of new devices and conversion of existing devices.
5. Consider how the district might reorganize to provide better coordination between the IT and Educational Services departments that will enhance teaching and learning in general and state test administration specifically.

Classroom Support

The FCMAT fieldwork plan included group interviews at the district office with several principals and with a group of teachers selected by the district; however, no principals were available to attend the planned group interview. The group interview with teachers was attended by two teachers on special assignment (TOSAs) working at the district office. They were joined later in the interview by an instructional specialist who also works at the district office. The FCMAT team was able to visit one middle school (Arizona) and one high school (Hillcrest). Those visits included group interviews with site teams, which included one teacher, two administrators, and a clerical employee at the middle school and two teachers, two administrators, and a clerical employee at the high school. A planned visit to an elementary school was cancelled due to a scheduling conflict. The lack of access to a wider staff group limited the team's insight. However, the individuals that were able to participate in interviews had extensive knowledge of the district's circumstances and provided helpful background and perspective.

Technicians are assigned primary responsibility for one or more school sites. Their work is driven largely by service tickets submitted by the assigned point of contact at each school site who is responsible for receiving support requests from the site users, creating service tickets, monitoring progress on open service tickets, and communicating between the IT staff and the user regarding ticket completion. Other work is self-assigned as technicians work on projects such as the conversion of older Windows devices to Chromebooks, or the deployment of new devices as they are purchased and processed through the warehouse. IT staff report that supervisors do not regularly observe their work or provide coaching to help them improve. They report that supervisors are typically consumed by a heavy workload themselves and this limits their ability to provide active supervision except at weekly staff meetings and up to one field visit per staff person per year.

Most technicians are assigned a company vehicle and are required, within their duty day, to pick up and return the vehicle to a district facility. This limits accountability for work start/end times and results in time spent away from school sites every day. This time can be significant depending on the distance between the vehicle storage location and the school site being visited that day. The use of district-owned vehicles is deemed necessary so technicians can maintain a supply of parts and equipment on hand. It is assumed that staff would otherwise have to store items in their personal vehicles and be responsible for them during their off hours or haul these items with them in a large backpack.

The IT department holds weekly meetings (often on Fridays). While these meetings are not typically lengthy, they do occur during the regular workday. These meetings, along with the need to pick up and drop off a district vehicle, limit the available time to work on service requests or projects.

The district clearly delineates between traditional IT functions that include maintenance of the network and systems infrastructure, new equipment rollouts, and device break/fix tasks on the one hand, and support that focuses specifically on effective technology integration at the classroom level. The IT department provides services to the district and sites in the former areas but does not lead, guide, train, or coordinate deeply in the area of technology-enriched curriculum delivery.

The district office-based instructional specialist and TOSAs have primary responsibility for integrating technology into the curriculum. Sites have part- or full-time lab assistants that act as the primary point of contact between teachers and the district office. Sites also have part- or full-time librarians and/or library assistants that are responsible for instructional media. Most

sites have designated teachers or site-based classified staff with ancillary responsibilities for campus technology including repair, inventory, and coordination between users and the district technology staff. Most sites also have a full- or part-time instructional coach that focuses on curriculum delivery but is typically not expected to provide professional development for teachers on technology integration.

Decisions about the quality, depth, frequency, and methods of technology use in the classroom are largely made by each teacher independently. While all students have an active Google account and can access internet resources when required by their teacher, there are no identifiable districtwide expectations for classroom technology use at each grade level other than preparation for and execution of the state tests. Students are not provided a comprehensive grade level appropriate curriculum for internet safety.

Staff report that IT support in the classroom is limited. They feel that technicians try to be responsive to service requests and to make progress on infrastructure deficiencies, but site staff are often unaware of any definitive plan to resolve long-standing issues with such things as limited wireless bandwidth in some places and insufficient device availability in many classrooms.

There is also a consistent sense that service responsiveness is insufficient. It is possible this could be the result of insufficient communication with users regarding ticket status.

A common complaint was the length of time between when an order of devices arrives in the warehouse to when those devices are fully deployed and in use, especially devices used for classroom instruction. IT staff acknowledge that the receiving and distribution processes are disorganized and there are no real standard expectations for deployment completion time.

Site staff have not been surveyed comprehensively to determine their technology skill levels, their understanding of how technology can best support student learning, whether their classroom technologies are being used effectively, their level of satisfaction with technology support, their preferred professional development delivery models, or their recommendations for technology improvement in their classroom.

Technicians are assigned primary responsibility for one or more sites and visit their sites in response to service requests or project work assigned to them by technology management. Staff report that they do not have a designated secure work area on each campus where they can store parts, equipment, and tools, and where they can conduct repairs as needed. Instead, they are assigned a district vehicle where they store these items. This results in several deficiencies in technology support delivery. Foremost is the built-in loss of productive work time. Also, because technicians normally start and end their day at a vehicle storage location rather than at a school facility under site supervision, they are not accountable for their time and cannot maximize the productive use of their whole workday. The beginning and end of the day are often when students are not on campus, when technicians can work directly with teachers to resolve their issues and communicate with them about their ongoing needs. Starting and ending their days on campus would increase their overall visibility, increasing user confidence in technology support and enhancing the technician's understanding of their sites' needs.

IT staff do not report to the Educational Services division and often are not represented fully in discussions regarding technology in instruction. They have an imperfect understanding of the teacher's perspective, ongoing and new curricular initiatives, the immediacy and flow of classroom activities and technology's role in enhancing learning. Instead, they see themselves as technology users see them: as the team that deploys new technologies, fixes broken devices, and keeps the network running. Neither they nor the user community view IT as a significant

partner in determining how best to amplify student learning or the operation of schools through technology. Thus, their work focus is reactive rather than proactive.

Several district personnel have direct or ancillary responsibility for developing and implementing the district's technologies including IT department staff, the principal at each school, a district-based instructional specialist and TOSAs, lab assistants, library/media specialists, and stipend teachers. There are also instructional coaches who are not expected to directly support technology but do so when their instruction to teachers includes technology-enriched curriculum delivery. Despite these resources there is no evidence of a shared vision regarding technology's role as an amplifier of student achievement and how to realize that vision. The work of each group seems isolated. Support providers including the IT department, school site decision makers, and other individuals are left to make their own assumptions about how best to move forward, and overall progress is diminished or stalled.

There is no evidence that the district has set expectations regarding technology use at each grade level, and there is wide variance from classroom to classroom and site to site regarding the use of technology in curriculum delivery. Some schools have a much lower ratio of students to devices than others and some have much better wireless coverage. Staff shared that the vision of technology's role in student success is largely principal-driven. This has led to diffuse purchasing decisions and priorities from site to site that ultimately has resulted in some students proceeding from higher technology elementary or middle schools to lower technology high schools and vice-versa. Students coming from the higher technology schools are frustrated to find themselves working beneath their capacity as they matriculate. Those coming from lower technology schools are starting at a disadvantage to their peers from higher technology schools. The lack of well-communicated district expectations for technology use leads to inconsistent and inefficient use of technology across the district and diminished student success.

The district has not provided a common, grade-level-appropriate technology safety and responsible use curriculum for students early in each school year that is mandatory, monitored, and reviewed throughout the year. Students who are trained in the appropriate use of technology tend to engage more deeply and responsibly with the technology. Students treat devices with greater respect, repair costs are lower, and students hold one another accountable, reducing off-task time and increasing the available learning time.

Free materials are available to districts to provide robust, grade-specific lessons such as those produced by Common Sense Media (https://www.commonsense.org/education/).

The best school organizations develop strategic educational plans collectively and include technology in those plans. Once the district's vision, mission, and objectives are developed, they are communicated widely among staff and that framework guides ongoing conversations, joint decision making and tactical planning. IT departments in these organizations proactively communicate with users regarding the ongoing status of individual service requests as well as the status of major initiatives, upcoming service outages, and adjustments to services.

Districts that operate optimally seek feedback from their stakeholders and analyze their needs over time to focus their efforts on areas of greatest need, to design more effective professional development, and to ensure more successful outcomes for all their initiatives. These districts often invest in a technology survey system such as, or similar to, the Technology and Learning module from BrightBytes Technology and Learning Module (https://www.brightbytes.net/techlearning) that can provide the district with actionable data regarding user readiness for technology initiatives, what professional development is needed, how best to apply technology resources for

the biggest gains in student achievement, and what mid-course corrections will help maximize outcomes over time.

Recommendations

The district should:

1. Maximize technician on-site time through efficient scheduling, the use of remote access tools, and a secure work location for technicians on all campuses.
2. Publish and communicate grade-level expectations for technology use by students and teachers in terms of content, frequency and depth.
3. Develop a strategic educational plan in conjunction with the district's LCAP that includes technology as a primary component.
4. Utilize a survey tool to measure stakeholder readiness to support technology-enhanced instruction and learning.

Email

Approximately four years ago the district implemented a Google Apps for Education rollout including Gmail for all staff. The FCMAT team was not provided a project plan for this initiative, but it was described by district staff as an effort led by a previous IT director. During fall 2018 the district implemented Microsoft Office 365 (O365) email for all staff including teachers. The technology department has completed the implementation and is also managing the Google Gmail service for students and teachers. No project plan is available for the Microsoft O365 implementation. The district now uses Gmail for instructional purposes in a secure, in-district-only environment and staff have Microsoft-hosted email in a .org domain that is internet accessible.

The process of setting up accounts for staff begins with human resources. Human resources staff notify various administrators and departments by email about a new employee or a change of status for an existing employee. The IT department is copied on the email, and the technology department assistant creates work orders for each of the technology tasks related to the user onboarding or change of status. This may involve creating up to three separate work orders per human resources email notification.

IT staff interviews indicated that the process of account creation and the email method utilized by human resources to notify IT of new employees or changes in status sometimes results in delays for the user, and contributes to inefficiencies and heavy workloads for the IT department. The large volume of email received by the IT department assistant may cause the time-sensitive notifications related to user accounts to be missed or delayed.

Most school districts have experienced an increase in number of systems and variety and complexity of the security levels each employee must have access to for their work. Automated onboarding tools streamline these processes and improve timeliness of account creation and system access and security. The district has licensing for Microsoft Active Director to assist in this process, but it was not fully implemented at the time of the FCMAT team visit.

Efficient management of employee accounts, assignment of access rights and passwords is a critical function of the technology department and depends on efficient and timely communication with human resources. Many human resources departments utilize the district help desk system or other automated work flow systems to reduce paperwork and time delays, improve communication and track approval processes between departments.

Staff interviews indicated that email is currently working, but several staff at schools cited inadequate communication and confusion among their coworkers about the reasons for the various system changes, the abruptness of the changes, and their lack of input into the process. Some staff stated that the email groups are inaccurate, they may contain personal email addresses, and district communications intended either for broadcast or specific groups of employees return many “undeliverable” messages. The accuracy of the email accounts and the timeliness of employee updates was questionable.

Many districts have converted from in-house email systems to hosted solutions offered by Microsoft or Google. In successful conversions, the project plan is the product of a collaborative effort and is clearly communicated to all stakeholders from planning stages to completion. Because email has systemwide impact, the development of a project plan in collaboration with representatives from all departments, staff and schools ensures a realistic timeline, adequate resource allocation, and includes provisions for possible delays or other risks.

Recommendations

The district should:

1. Implement the licensed Microsoft Active Directory enterprise account management system to facilitate employee onboarding, reduce manual workload, and increase efficiency.
2. Investigate alternatives to email notifications about staff changes such as automated workflow or help desk systems to improve communication between human resources and technology.
3. Develop a practice of creating and communicating project plans with district users.

Data Backup and Recovery

IT staff report that the district has 113 virtualized servers on physical HPC7000 and Nutanix hosts running the VMware Hypervisor system. The data backup solution in use by the district is a Barracuda virtual appliance running on an HP Proliant server running VMware. The district email server is a hybrid on-premises Microsoft Exchange server and Office 365 in the cloud. All email in and out of the district is archived on a hosted Barracuda email server.

The Barracuda backup virtual appliance is located at the district's Child Nutrition Center, which is approximately nine miles away from the district office. A computer technician III is assigned primary responsibility for the backup system. There is no documented backup plan although staff reported that one is being drafted. FCMAT was unable to verify the frequency and methodology of system backups, what is included in critical systems backups, whether any redundancy exists, or whether the backup system is ever tested. FCMAT was also unable to ascertain whether a recovery plan includes provisioning of replacement equipment or alternative telecommunications services including internet connection.

The district network operations center and the remote data backup facility where essential servers and storage systems are located are both served by fire suppression systems that utilize overhead sprinklers to extinguish flames. These systems are more appropriately utilized in regular office and classroom facilities and not in network operations centers. In the event of extinguishing a fire either in or near the network operation center, overhead sprinklers are very likely to cause immediate and permanent damage to sensitive equipment and nearly certain loss of critical data stored on these systems.

IT management staff is considering replacing the existing Barracuda backup system with a Veeam cloud-based system, and there have been discussions about developing a disaster recovery (fail-over) capability at either the Riverside County Office of Education Network Operations Center located at 3939 13th Street (approximately 12 miles from the district office) or at the old district office on Keller Street (approximately 5.5 miles from the district office). No details were provided regarding which systems would be included at a prospective fail-over site.

The district has not engaged in any comprehensive disaster recovery/business continuity planning. Independent of comprehensive planning, the IT department is making a best effort to make backup copies of critical data and is providing some measure of protection by locating the backup system remotely. However, fire suppression systems utilizing overhead sprinklers at both locations severely limit the viability of the district's data backup method.

Disaster recovery includes more than just reliable backup of critical data. It should also include restoration of critical technology-based services including internet access, VoIP phone services, and rapid provisioning of network and server equipment. Data backup and restoration capability should include user files, databases, and system state information and should be tiered to include rapid local restoration of individual files, access to redundant copies and geographically distant remote storage at a secure location.

The backup plan should also include regular testing to ensure reliability should an actual event occur.

Data backup and recovery plans are best considered within the larger context of the district's overall business continuity plans. This larger context considers the organization's tolerance for the temporary unavailability or permanent loss of various system components and capabilities and considers the organization's capacity to afford various recovery solutions. Several resources exist

to help school districts develop comprehensive plans for systems and data recovery. The Ready.Gov website includes a helpful article at https://www.ready.gov/business/implementation/IT/ that fully describes recovery strategies available to school districts and other businesses. This site contains numerous resources available from the National Institute for Standards and Technology along with publications that can be helpful in developing business impact analyses and continuity plans. Homeland Security has developed an IT Contingency Plan template (https://bit.ly/2XewVUh) that can be used to assist in developing a comprehensive plan.

The National Fire Protection Association Code 75 is the national standard for fire prevention in information technology installations. While minimum requirements provide for sprinkler systems in network operations centers with valves separate from the rest of the building, the code does recognize the sensitivity of technology to water damage. Alternative fire suppression technologies including clean agent or inert gas systems are recommended to preserve the utility of technology equipment in the event of a fire. The Society of Fire Protection Engineers website includes a helpful article on clean agent fire suppression (https://bit.ly/2GUYcWd).

Recommendations

The district should:

1. Develop a comprehensive disaster recovery plan that considers the district's available financial resources and tolerance for the temporary unavailability or permanent loss of data and technology services.
2. Replace the overhead sprinkler-based fire suppression systems in the district network operations center and data backup center with a clean agent or inert gas fire suppression system.

Job Descriptions and Duties

Director II and Assistant to the Director

Director II of Integrated Technology Support Services

The job description for this position includes responsibility for the development, oversight and implementation of the district technology plan, participation in long-term strategic planning, and development of budgets. Duties listed in the job description include recommendations for technology integration into instruction, infrastructure planning, ensuring department performance and emergency preparedness planning. The job description is not dated and is noted as pending board approval.

Among other duties listed in the job description, the director of integrated technology support services is responsible for district technology planning and implementation, technology support services, infrastructure planning, leadership and vision for use of technology in instruction and operations, and support for technology integration.

The director has been in the position for two years. Input from staff indicated that IT personnel management, time spent developing and maintaining a productive team environment in the department and seasonal, time-intensive tasks like E-Rate planning and Smarter Balanced Assessment preparation limit the ability of the director to focus on mid- and long-term planning, emergency preparedness, and strategic communications with other district departments, especially Educational Services. An interim organizational structure during 2017-18 that placed the IT department under the oversight of secondary education provided opportunities for communication and alignment with educational initiatives, but the recent changes that placed the IT department under the oversight of administrative services has resulted in a lack of communication and collaboration with district education leaders. Currently the schedule of one-to-one meetings with the executive director of administrative services conflicts with the regular meetings of the Educational Services division, further impeding interaction and communication between the director of IT and Educational Services leadership.

The director devotes significant time to staff management and meetings with department managers, project management, IT purchases, visiting schools and meeting with principals. While these all align with the job description, there is no overall district technology plan to guide the work, provide a framework for prioritizing tasks, or measure success. This is not a cabinet position, and therefore information about district-level issues and plans is routed through the executive director of administrative services. This indirect pipeline to district administrators and other departments contributes to the disconnect and isolation between IT and the district that was cited in several interviews.

In districts with high-performing technology departments and technology-infused instruction, chief technology officer (CTO) positions at the executive level are becoming increasingly important as a necessary bridge between educational, operations and administrative divisions. These individuals attend cabinet, have direct and regular interaction with district leaders and ensure that the technology systems and infrastructure underlying all aspects of the organization efficiently and cost-effectively serve the needs of all stakeholders.

Recommendations

The district should:

1. Establish a chief technology officer position to enable a stronger and more efficient collaboration between IT and all other departments and ensure progress toward integrating technology into instruction. (Sample job descriptions are included in Appendix B.)
2. Coordinate IT department meetings to enable regular participation by the IT director in other department meetings.

Assistant to Director of Integrated Technology

The job description for the assistant to the director states that this position "assists in the coordination, preparation and implementation of activities" in the department. This may include maintaining calendars and departmental records, material and equipment inventories, ordering supplies and materials, coordinating and preparing meetings and workshops, and assisting computer users in the use of Microsoft applications. The job description was last updated in 2005.

During FCMAT fieldwork, the study team learned that this individual handles all district technology purchases, including quotes, contracts, purchase order processing, and technology-related school board approval requests. The duties of this position include staff timekeeping, department phone answering, help desk assistance for users, staff meeting minutes, and initiating work orders for new or changed employee accounts. Because the executive director of administrative services oversees the IT department, there is some overlap and confusion about the scope of work for this position relative to the assistant for the executive director and maintenance and operations departments. A lack of documentation and IT manuals necessitates one-to-one assistance on the phone or by email, and the assistant to the director often responds to these time-consuming requests.

The job description is broad and includes several help desk duties. The workload involved in handing department phones, all district technology purchasing, creating and routing work orders for employee additions and changes, and assisting the director to submit board items precludes fulfilling the range of duties itemized in the job description.

Recommendations

The district should:

1. Evaluate the assistant to the director job description to determine a manageable scope of work for this position.
2. Evaluate workflows and communication methods between HR and technology to utilize the work order system or other automated workflow tools for more efficient employee account management.
3. Develop documentation and training manuals for users to reduce time-intensive basic help desk requests.

Student Information Systems Group

Student Information Systems (SIS) Coordinator

The student information systems coordinator reports to the director of integrated technology and supervises a staff of two student information systems analysts and a student information systems technician. The responsibilities for this position include managing the student information system, coordinating state and federal data collections, compiling reports for district staff, managing data integration between student information and other data systems, data quality assurance, and providing support and training for staff and parent Aeries users.

IT staff interviews indicated that the demands for data integration between student information and other district operational and educational systems have increased. Feedback also indicated that requests for custom reports and analytics for student achievement have increased while the demands for state and federal mandated compliance and accountability data have also risen greatly in recent years.

The job title is specifically student information systems coordinator. The job description describes the responsibilities related to the student information data system only and does not address the additional tasks involved in integrating other data systems with Aeries to provide a wider scope of data integration services or data use among administrative and educational departments in the district.

As in many other districts that are increasingly dependent on a broad array of separate data systems, staff time devoted to providing custom data extracts and reports has increased. Use of data is no longer isolated to student information. Some districts have implemented data warehouse solutions to address the need for combining multiple data systems into an integrated repository that can produce on-demand, real-time reports for staff. The placement of the data systems staff in the information systems department is critical and contributes to the efficient performance of all database systems, not just the student information system. The emerging need among outside agencies and district staff and administrators for greater accuracy, interoperability and easy access to multiple sources of data necessitates a highly efficient information systems team that includes data staff and IT.

Recommendations

The district should:

1. Evaluate and update the student information systems coordinator job description and change the title to data systems coordinator to accurately reflect a broader array of systems not isolated to student information.
2. Maintain the current structure of the data systems staff in the information technology department.
3. Ensure that the data staff meet regularly with the other IT department staff and with Educational Services to align initiatives, establish priorities and improve collaboration.

Student Information Systems Analyst

There are two student information systems analysts under the direction of the coordinator of student information systems. The duties of this position include providing Aeries data and assessment reports and analytics and assisting the student information systems coordinator to compile and submit state and federal data collections and accountability reports. These individuals also interact with schools and parents by responding to user calls for assistance, creating and publishing Aeries training materials, attending parent meetings and conducting training workshops for parents and staff.

IT staff interviews indicated that as the district has launched the parent portal access to Aeries, the demand for user training in addition to the increased demands for state and federal compliance and accountability reporting place a heavy burden on these individuals. Staff comments also indicated a high demand for Spanish language training materials and translators at workshops. Staff indicated that their recent move from the Educational Services department to IT has inhibited regular interaction with Educational Services staff.

Because the student information system provides source data for many other educational databases and impacts teaching and learning at the schools, the interaction and communication between Educational Services staff and IT staff is critical to optimizing district information systems.

The job description for this position aligns with the actual tasks bring performed; however, the time-consuming demands of the parent and staff workshops and the lack of structured interactions with Educational Services staff have contributed to a stressed environment and sense of isolation in this department.

Districts that implement large-scale changes in systems impacting all stakeholders in the organization, such as the parent portal launch, often develop project plans that include ample resources and strategies for training and user support. In these districts the training plan for an initial rollout includes models such as "train the trainer" that distribute the burden for training and contribute to sustainability and confidence in the system over time among school site users and parents.

Well-run technology departments focus on educational technology in every aspect of the technology operations, especially data systems. Data staff in these departments may specialize in the student information system, but as a group they also continuously communicate with schools and educational leadership to understand other district data systems, and to provide the support needed for students and teachers.

Recommendations

The district should:

1. Implement a train the trainer model to increase capacity for site staff to assist parents and colleagues with Aeries and allow student information systems analysts to devote time to their other duties.

2. Institute regular interactions between student information systems staff and Educational Services staff through regularly scheduled meetings and/or the creation of an educational technology position in the IT department.

Student Information Systems Technician

This position was established in 2017 to support the student information systems department and reports to the coordinator of student information systems. Position duties involve technical support for the student information system (Aeries) such as monitoring database accuracy and data quality, user account setup, login access and security levels, system maintenance and troubleshooting, staff training, and provision of data extracts related to state and federal mandated reports such as CALPADS. This individual is also responsible for maintaining the student information systems department website.

Staff interviews indicated that the tasks performed by this individual align with the job description.

IT Operations Group

The IT Operations group consists of an IT operations manager who oversees the technical staff in the group consisting of one computer technician I, seven computer technician IIs, and three computer technician IIIs. All three computer technician IIIs and some computer technician IIs have responsibilities for ancillary technologies including VoIP telephony, employee badge system, Smartboards, Google G Suite for Education and Microsoft O365 administration, security cameras, data backup, network maintenance, bells, online locks, Active Directory administration, remote access tools, and data integration.

There is significant disparity in the amount of time scheduled for technical support at each site each week. Staff indicated that sites differ in the frequency that technology is used, the technical skill level of teachers and staff, and age of equipment. These differences are considered the primary determinants of the support time needed per site.

Hillcrest High School has approximately 1,600 students and receives four days per week of on-site support provided by a technician III. Norte Vista High School has approximately 2,000 students and receives three days per week of on-site support provided by a technician II. La Sierra High School has approximately 1,600 students and receives two days per week of on-site support provided by a technician III. Among the four middle schools, Villegas, with approximately 1,300 students, receives two days per week of scheduled on-site support. The other three have between 850 and 960 students each, yet two sites receive only one day of scheduled on-site support and one, Arizona, gets 1.5 days of scheduled support per week. Nine of the elementary schools receive one day per week of scheduled on-site support and five receive .5 days of support.

Most technicians have an assigned vehicle that they pick up and park at a district facility every day. This vehicle is used to transport and store devices, parts, and tools. In most cases, the parking location is not the same as their first or last site assignment of the day. This limits their time on site.

Staff meetings are held mid-morning each Friday. Staff pick up their vehicles at the start of day, travel to the district office to attend the staff meeting, and provide technical support at sites in the afternoon. They then leave early enough to drive their vehicle back to the parking location and end their shift on time. This further limits their time on site.

Staff working at sites have no regular supervision. The operations manager has significant technical responsibilities outside of supervising staff and has not been able to schedule time to regularly visit the 10 staff members who have site assignments. Nor is he able to regularly visit key users served by the technicians to get feedback to refine the technical support program over time.

Professional development resources exist for technical staff that can enhance their skills and help them provide more efficient and higher quality support to the user community. These resources include online training tools such as CBT Nuggets and Lynda.com, participation in job-alike workshops available through organizations like CETPA and CASBO, IT conferences, and training meetings held by and for IT department staff. Staff report that while they are aware of these opportunities, no time is allocated within the workday or otherwise for professional development. Instead, staff are given access to online training tools to use on their own time as desired. For the most part, they are unused.

IT Operations Manager

The operations manager works at the district technology office. All 11 computer technicians report directly to him. He is responsible for all technology systems including the technology help desk, and spends significant time personally maintaining, repairing and upgrading servers and software systems. He has significant experience in the private sector utilizing project management tools to organize work processes but reports only nominal success implementing these techniques in the district due to lack of interest in or perceived value by the organization and the necessity that the technology department remain agile in an environment of continuous change. Staff supervision has consisted primarily of weekly staff meetings and reviewing help desk tickets. Site visits that focus on monitoring, coaching, and supporting staff and soliciting feedback from key stakeholders and technology users are infrequent.

The job description is comprehensive and is a reasonable representation of the position as it is being performed.

Computer Technician I

The sole computer technician I works full time in the IT department and is the primary support position on the help desk. In that role, he answers help desk calls, troubleshoots and resolves issues, and routes calls to other technical support personnel as needed. He is responsible for inventory including receiving equipment and scheduling device deployments. He provides primary technical support to district office staff and general administrative support to the IT department along with the assistant to the director.

Minimum requirements listed in the position description for the computer technician I include a working knowledge of personal computer workstations, software distribution, and data communication concepts. In fact, the position requires technical troubleshooting skills on par with work normally conducted by the computer technician IIs, along with significant organizational skills that are needed to successfully support the administrative functions of the position.

Computer Technician II

Seven computer technician IIs are typically assigned primary responsibility for several elementary or middle school sites. Most are scheduled to visit one or more of these sites Monday through Thursday of each week although a few have no Monday site assignments. Each is also assigned as a backup for sites assigned to other technicians. Technician IIs are not dispatched to calls from the district office each morning. Rather, they begin their day at the site indicated by their daily schedule and work at that location until they are needed elsewhere based on ticket volume or direction from the district office. One technician II has no site assignments. Instead, they work at the district office and spend most of their time assisting with network or server-based projects. They also back up other site assignees and are dispatched to sites as needed. Another outlier is a technician II who provides primary support to Norte Vista High School three days per week, a role filled by technician IIIs at the other two comprehensive high schools.

The minimum requirements in the position description include an in-depth technical knowledge of personal computer operations, which is similar to the observed skill level required of a computer technician I serving at the district help desk. The job description duties and responsibilities state that a person serving as a computer technician II may organize and lead small work teams to install workstations, but organizing and leading teams is rarely if ever an actual part of the job.

Computer Technician III

Three computer technician IIIs are based at the district office and typically provide service to the district's comprehensive high schools. They each also have significant responsibilities for many of the ancillary technologies indicated above. One has primary responsibility for supporting Hillcrest High School four days per week. Another has primary responsibility for supporting La Sierra High School twice per week. And the third has no responsibility for primary support of any high school facility although he does provide primary support to McAuliffe Elementary School once per week. Instead, a technician II supports the third comprehensive high school.

The position description for the computer technician III includes skills and minimum requirements that significantly exceed those of the technician I and technician II positions. Staff at this level are expected to be able to research computer and network systems; upgrade, configure, and maintain major network and server systems; conduct staff trainings; create internal systems to enhance staff productivity; attend outside seminars and meetings to increase their knowledge; and support other technicians.

Other Technology Staffing Issues

The district has 11 non-management technical staff members serving 21 regular TK-12 school sites, alternative education and operational facilities and over 17,000 students. This is on par with similarly sized school districts, although the district is hampered by significant deficiencies in the infrastructure including network reliability and sufficiency issues, excessive device age, user skill level, and lack of districtwide standards in system performance, equipment specifications, dedicated technical support time, and classroom technology integration. The overall performance of the IT department is further diminished by inefficient scheduling, insufficient supervision of staff, and insufficient opportunities for staff to enhance and increase their technical skill levels.

Front-line technical support in schools and elsewhere has for a long time emphasized configuration and maintenance of individual personal computers. Today, more and more applications are provided in the cloud. Devices used to access these applications are becoming more of a user choice, more powerful, less expensive, and more reliable. The definition of a user device is changing, which is making more of our world and classrooms "smart." Technical support is becoming more about connectivity, access configuration, peripheral technologies, and utility. The term "personal computer" is losing prominence in this changing landscape. Forward-thinking organizations are recognizing these changes and considering new titles for their technical support staff that reflect this reality.

School districts successful with technology integration develop standards to guide IT operations. This is especially true in scheduling technical support staff for school operations and setting expectations for technicians about what successful resolution of a technical problem includes. School district technicians operate optimally when they know the school and its inhabitants and when they communicate directly with users, listen to understand the problem completely, ensure users are updated on job status, and verify that users are satisfied with the outcome.

Successful technology departments typically deploy their highest skilled technicians at the high schools and include more dedicated time on campus to support those more complex environments. They then scale down to less dedicated time and fewer skill requirements at the middle and elementary schools. A common breakdown would include one dedicated full day of a technician's time on campus per week for elementary schools, two per week for middle schools, and three per week at comprehensive high schools. Alternative education programs with small student populations and fewer technology deployments are often included as ancillary responsibilities that are handled on days where a given technician is not assigned dedicated time on a particular campus.

Technical staff in successful districts remain responsible for all their site assignments every day. These districts have a service level agreement in practice and often in writing that specifies on average how quickly the user can expect an initial response and how quickly they can expect tickets to be resolved. IT management monitors adherence to this agreement by site and by technician and makes necessary adjustments to ensure consistent compliance over time. Technicians typically provide at least an initial response to all tickets within 24 hours of receiving them and can resolve tickets within one week on average. Often this requires them to use remote access tools or a phone call to a user on a remote site, or to schedule a site visit to resolve the ticket.

Well-organized school district technology departments utilize organizing principles and technologies to remain responsive to user needs. Foremost among these principles is the assertion that technician time needs to be structured to maximize available non-student time with users. Technicians should arrive on campus early enough to work with teachers before class starts or leave late enough to work with them after the student day ends. Regular IT department staff meetings are scheduled as infrequently as practicable (typically monthly). Meeting times are planned to maximize the time spent on campus. Additional meetings for specialized training or announcements are held sparingly but can be conducted in smaller groups at high schools or other locations that are close to technicians' assigned sites.

Technical support staff work in a constantly changing environment of new tools, new systems, and new solutions to problems they must understand sufficiently to configure, troubleshoot, and maintain. School district technical staff have the added challenge of understanding the K-12 classroom context. School district IT departments operate optimally when they allocate time and resources to provide all their staff with training that is regular, purposeful, practical, and contextual. Training can include release time for online learning, shadowing, vendor-sponsored training events, having staff members take turns facilitating training for their colleagues at staff meetings, and spending time in the classroom working with teachers on technology lessons. Supervisors continually review the need for training, construct training opportunities for all staff, and monitor the learning program to ensure all staff participate and benefit from training.

Recommendations

The district should:

1. Retitle technology support positions to de-emphasize personal computer support. Titles such as technology support analyst (I, II, III) and information technology analyst (I, II, III) are common.

2. Develop an organizational culture in the technology department that emphasizes direct communication between users and technology support providers

and shared responsibility for student success using technology tools and integration.

3. Balance the assignment of on-site technician time so that all schools at the same grade level receive equivalent support time and technician skill.
4. Develop a written service level agreement for initial response and final resolution of service requests, monitor attainment of the agreement, and provide IT staff with remote tools, communication standards, and management support to sustain compliance over time.
5. Maximize technician time on site and non-student time with teachers.
6. Assign supervision of level III technicians to the network administrator and require both supervisors to conduct regular site visits to support their staff and key users.
7. Require level III technicians and network administrator to attend the operations manager's staff meetings to ensure consistent technology support and enhanced communication.
8. Provide regular dedicated time for professional development for all technology support staff members, and monitor outcomes.

Networking Group

Network Administrator

The district has one network administrator who reports to the director of integrated technology. This is a management position. The duties include participation in the design, maintenance and installation of the district systems and wired and wireless networks; assisting in the development and implementation of district and school technology plans; evaluation and recommendation of technology hardware and software; training, evaluation and supervision of personnel; maintaining network firewall, access control and mobile device management; and performing cyber investigations. The network administrator is responsible for WAN and LAN hardware planning, recommendations, upgrades, installation and maintenance, network security and content filters, and back-up and disaster recovery planning and implementation. The job description is not dated.

There are no other network positions, and staff interviews indicated that the computer technician III staff aid the network administrator with network troubleshooting, maintenance, and installations. These technicians are also assigned to support specific school sites. The computer technician III job description was updated in 2016 to include network skills and troubleshooting. Because this group of technicians was automatically reclassified from computer technician II to computer technician III, they may not have had enough training to perform network tasks independently. The network administrator assists and trains these individuals, thereby taking time away from other important duties of the network administrator job.

The organizational structure of the department does not reflect the day-to-day work of the network administrator and collaboration with the computer technician III staff.

Most medium-sized districts employ a team of network technicians under the supervision of a network administrator. Although the district has redefined the computer technician III position to include some network tasks, their background knowledge and experience may not meet the demands of the job. Also, their other duties at the secondary schools as site technicians reduces their available time for network support. District backup systems are in place to some degree, but critical areas of emergency preparedness, network security and disaster recovery are not addressed in the job description and may not be sufficiently attended to because of lack of support staff for this position.

Recommendations

The district should:

1. Update the network administrator job description to include responsibility for developing and implementing disaster recovery and network security plans.
2. Reassign the computer technician IIIs to report to the network administrator.

Systems Integrator

The systems integrator position reports to the network administrator and is currently vacant. Responsibilities outlined in the job description include planning, installation, maintenance, and support of district systems such as phones, data networks, servers, electronic locks and building security.

These are critical functions for school districts that are fulfilled by network and technology support staff. Districts are increasingly implementing integrated telecommunications, environmental control, and security systems that rely on network infrastructure to operate and technology skills for installation and maintenance.

A qualified CTO has skills and knowledge to coordinate with and support facilities and operations departments' initiatives. The creation of a CTO position in addition to the assignment of the computer technician IIIs to work with the network administrator would fulfill the tasks described in the systems integrator job description.

Recommendations

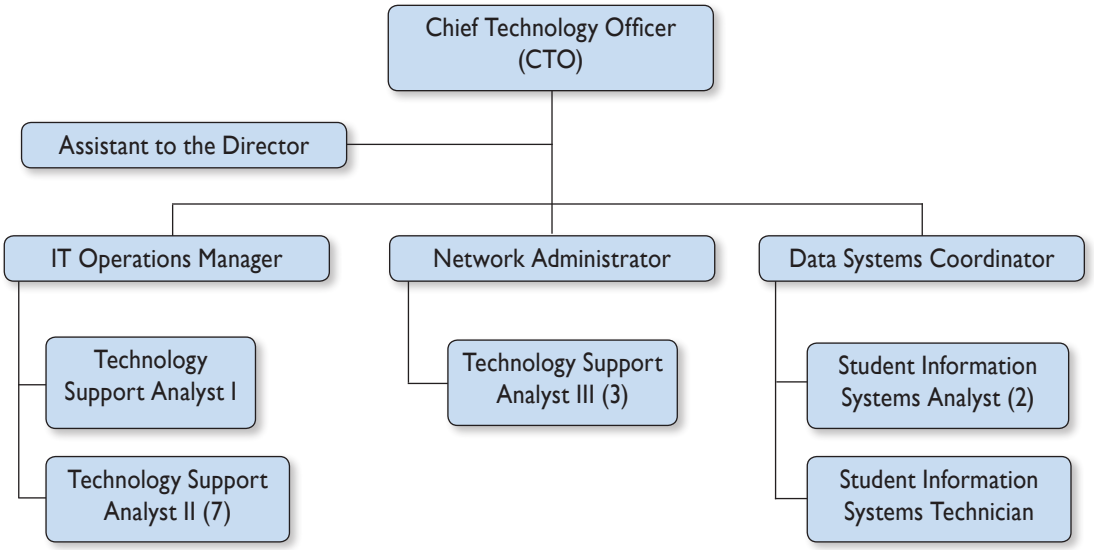
The district should:

1. Eliminate the systems integrator position.

Revised Organization Chart

The proposed departmental organizational chart is presented below:

Proposed Information Technology Department Organizational Structure



Appendices

Appendix A

Study Agreement

Appendix B

Sample Job Descriptions for Chief Technology Officer

Appendix A

FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
September 21, 2018

The Fiscal Crisis and Management Assistance Team (FCMAT), hereinafter referred to as the team, and the Alvord Unified School District, hereinafter referred to as the district, mutually agree as follows:

1. BASIS OF AGREEMENT

The team provides a variety of services to local education agencies (LEAs). The district has requested that the team assign professionals to study specific aspects of the district's operations. These professionals may include staff of the team, county offices of education, the California Department of Education, school districts, or private contractors. All work shall be performed in accordance with the terms and conditions of this agreement.

In keeping with the provisions of Assembly Bill 1200, the county superintendent will be notified of this agreement between the district and FCMAT and will receive a copy of the final report. The final report will also be published on the FCMAT website.

2. SCOPE OF THE WORK

A. Scope and Objectives of the Study

1. Conduct an analysis of the district's state of technology including department staffing and the ability to support the district's information and education technology goals and make recommendations for improvement, if any. Interview principals, department directors and classified staff to gather data. Review and analyze the district's technology master plan with an emphasis on the integration with the Local Control Accountability Plan (LCAP).

2. Analyze the status of the following and make recommendations for improvement, if any:

   a. Leadership of technology department.
   b. Leadership of overall technology use in the district.
   c. Project management.
   d. Help desk system and ticketing process.
   e. Capacity to support educational-focused technology initiatives including Smarter Balanced testing.

f. Technology support in the classrooms.
g. Current and planned use of district-wide email.

3. Review the job descriptions and staffing, and organizational structure of the technology department, including any site-level support.

4. Make staffing recommendations based on the support level necessary to meet the district's technology requirements.

5. Review the department's preparedness of data backup and recovery due to a catastrophic event and make recommendations for improvement, if any.

B. Services and Products to be Provided

1. Orientation Meeting - The team will conduct an orientation session at the district to brief district management and supervisory personnel on the team's procedures and the purpose and schedule of the study.
2. On-site Review - The team will conduct an on-site review at the district office and at school sites if necessary.
3. Exit Meeting - The team will hold an exit meeting at the conclusion of the on-site review to inform the district of significant findings and recommendations to that point.
4. Exit Letter – Approximately 10 days after the exit meeting, the team will issue an exit letter briefly memorializing the topics discussed in the exit meeting.
5. Draft Report - Electronic copies of a preliminary draft report will be delivered to the district's administration for review and comment.
6. Final Report - Electronic copies of the final report will be delivered to the district's administration and to the county superintendent following completion of the review. Printed copies are available from FCMAT upon request.
7. Follow-Up Support – If requested by the district within six to 12 months after completion of the study, FCMAT will return to the district at no cost to assess the district's progress in implementing the recommendations included in the report. Progress in implementing the recommendations will be documented to the district in a FCMAT management letter. FCMAT will work with the district on a mutually convenient time to return for follow-up support that is no sooner than eight months and no later than 18 months after completion of the study.

3. PROJECT PERSONNEL

The FCMAT study team may also include:

A. To be determined	***FCMAT Staff***
B. To be determined	***FCMAT Consultant***
C. To be determined	***FCMAT Consultant***

4. PROJECT COSTS

The cost for studies requested pursuant to Education Code (EC) 42127.8(d)(1) shall be as follows:

A. $800 per day for each staff member while on site, conducting fieldwork at other locations, presenting reports or participating in meetings. The cost of independent FCMAT consultants will be billed at their actual daily rate for all work performed.

B. All out-of-pocket expenses, including travel, meals and lodging.

C. The district will be invoiced at actual costs, with 50% of the estimated cost due following the completion of the on-site review and the remaining amount due upon the district's acceptance of the final report.

Based on the elements noted in section 2A, the total not-to-exceed cost of the study will be $26,800.

D. Any change to the scope will affect the estimate of total cost.

Payments for FCMAT's services are payable to Kern County Superintendent of Schools - Administrative Agent, located at1300 17th Street, City Centre, Bakersfield, CA 93301.

5. RESPONSIBILITIES OF THE DISTRICT

A. The district will provide office and conference room space during on-site reviews.

B. The district will provide the following if requested:

1. Policies, regulations and prior reports that address the study scope.
2. Current or proposed organizational charts.
3. Current and two prior years' audit reports.
4. Any documents requested on a supplemental list. Documents requested on the supplemental list should be provided to FCMAT only in electronic format; if only hard copies are available, they should be scanned by the district and sent to FCMAT in electronic format.
5. Documents should be provided in advance of fieldwork; any delay in the receipt of the requested documents may affect the start date and/or completion date of the project. Upon approval of the signed study agreement, access will be provided to FCMAT's online SharePoint

document repository, where the district will upload all requested documents.

C. The district's administration will review a preliminary draft copy of the report resulting from the study. Any comments regarding the accuracy of the data presented in the report or the practicability of the recommendations will be reviewed with the team prior to completion of the final report.

Pursuant to EC 45125.1(c), representatives of FCMAT will have limited contact with pupils. The district shall take appropriate steps to comply with EC 45125.1(c).

6. PROJECT SCHEDULE

The following schedule outlines the planned completion dates for different phases of the study and will be established upon the receipt of a signed study agreement:

Orientation:	to be determined
Staff Interviews:	to be determined
Exit Meeting:	to be determined
Draft Report Submitted:	to be determined
Final Report Submitted:	to be determined
Board Presentation:	to be determined, if requested
Follow-Up Support:	if requested

7. COMMENCEMENT, TERMINATION AND COMPLETION OF WORK

FCMAT will begin work as soon as it has assembled an available and appropriate study team consisting of FCMAT staff and independent consultants, taking into consideration other jobs FCMAT has previously undertaken and assignments from the state. The team will work expeditiously to complete its work and deliver its report, subject to the cooperation of the district and any other parties from which, in the team's judgment, it must obtain information. Once the team has completed its fieldwork, it will proceed to prepare a preliminary draft report and a final report. Prior to completion of fieldwork, the district may terminate its request for service and will be responsible for all costs incurred by FCMAT to the date of termination under Section 4 (Project Costs). If the district does not provide written notice of termination prior to completion of fieldwork, the team will complete its work and deliver its report and the district will be responsible for the full costs. The district understands and agrees that FCMAT is a state agency and all FCMAT reports are published on the FCMAT website and made available to interested parties in state government. In the absence of extraordinary circumstances, FCMAT will not withhold preparation, publication and distribution of a report once fieldwork has been completed, and the district shall not request that it do so.

8. INDEPENDENT CONTRACTOR

FCMAT is an independent contractor and is not an employee or engaged in any manner with the district. The manner in which FCMAT's services are rendered shall be within its sole control and discretion. FCMAT representatives are not authorized to speak for, represent, or obligate the district in any manner without prior express written

authorization from an officer of the district.

9. INSURANCE

During the term of this agreement, FCMAT shall maintain liability insurance of not less than $1 million unless otherwise agreed upon in writing by the district, automobile liability insurance in the amount required under California state law, and workers compensation as required under California state law. FCMAT shall provide certificates of insurance, with Alvord Unified School District named as additional insured, indicating applicable insurance coverages upon request prior to the commencement of on-site work.

10. HOLD HARMLESS

FCMAT shall hold the district, its board, officers, agents and employees harmless from all suits, claims and liabilities resulting from negligent acts or omissions of its board, officers, agents and employees undertaken under this agreement. Conversely, the district shall hold FCMAT, its board, officers, agents and employees harmless from all suits, claims and liabilities resulting from negligent acts or omissions of its board, officers, agents and employees undertaken under this agreement.

11. CONTACT PERSON

Name: Susana Lopez
Telephone: (951) 509-5000
E-mail: susana.lopez@alvordschools.org

9-21-18

Allan Mucerino, Superintendent — Date
Alvord Unified School District

September 5, 2018

Michael H. Fine, — Date
Chief Executive Officer
Fiscal Crisis and Management Assistance Team

Appendix B

Capistrano Unified School District

Chief Technology Officer

Under direction of the Superintendent, plan, recommend, organize, and direct district-wide information and computer operating systems; provide leadership and guidance in the implementation of technology. Develop and oversee a department budget; coordinate contract services; and general oversight responsibility for classroom/school site technology. Collaborate with sites and district departments on technology-related issues; manage professional and technical staff.

EXAMPLES OF DUTIES

- Provides leadership and direction in district-wide technology planning, computer acquisition, applications development, and computer operations to increase access to information and facilitate productivity.
- Consults with division managers to develop network and communication solutions and data services that integrate computer systems for information processing and data sharing.
- Directs development of information systems including database management, business, and financial applications to improve operations and delivery of instruction.
- Develops and implements departmental goals, priorities and procedures.
- Monitors data security to ensure the integrity and reliability of computerized information systems.
- Directs the continuous improvement of the information and technical system staff, equipment and systems to maintain pace with district needs.
- Oversees an annual budget and establish controls to stay within the limits of that budget.
- Prepares for and follows up on technology-related audits.
- Coordinates student and staff events, promoting the use of instructional technology.
- Oversees bid requests, proposals, and vendor contracts.
- Supervises and evaluate department certificated and classified management personnel.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:

Current K-12 instructional practices; principles and techniques of educational technology; principles and techniques for project planning, scheduling and control; public sector business practices; emerging trends in instructional technology, and management of budget planning and oversight.

Ability to:

Supervise, coordinate, and direct managers, teachers, classified staff, advisory groups, and other stakeholders; communicate clearly and concisely, orally and in writing; develop sound strategies to accomplish objectives; incorporate new technology into future plans; facilitate and lead change; comply with the District's customer service standards, as outlined in Board Policy.

Experience:

Demonstrates strong management/leadership skills. A minimum of five years' experience at site or district level coordinating technology integration into instruction or management of technology/information systems.

Education

Current California teaching credential.
Educational Administrative Services credential.
Masters degree in related area or postgraduate educational technology coursework preferred.

Irvine Unified School District

CHIEF TECHNOLOGY OFFICER

DEFINITION

Under the supervision of the Superintendent, the Chief Technology Officer provides dynamic, responsive, collaborative and forward-thinking vision, leadership and management of technology systems and services to support the mission and goals of the District. This includes the planning, development, implementation, management and maintenance of all applications, infrastructure, security, networks, technology training and communications, as well as comprehensive support for the teaching and learning activities of the staff and students.

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Work collaboratively with schools and departments to support technology integration and innovation.
- Provides oversight and direction for integrated data communications networks and the use of integrated database management systems.
- Plans, schedules and directs the development of computer programs, including needs analysis, interface with other existing and planned programs, debugging, and development of comprehensive documentation.
- Identifies and supports instructional applications for technology.
- Designs and implements on-line quality assurance support programs including system and database security.
- Implements and evaluates systems and procedures to protect data integrity, reliability and accessibility.
- Organizes and coordinates appropriate staff development activities to ensure proper use of equipment and programs. Assures training is both operational and conceptual in scope.
- Develops functional specifications, standards and requirements for hardware and/or software purchase and design to ensure optimum system and end-user performance.
- Promotes participation of and collaboration with end-user and staff representatives in needs assessment, program development, service delivery efforts and project review.
- Evaluates technological changes, emerging technologies and best practices in computer and communication fields to recommend innovative and cost effective integration of new technologies.
- Manages operating budget covering all centralized computer support throughout the District and recommends prudent fiscal approaches for long-term hardware and software acquisition and maintenance.
- Coordinates staff development to support technology integration.
- Leads both short and long-range planning efforts related to technology.

- Coordinates the systems design work necessary to support the integration of information systems and platforms.
- Hires, supervises, develops and evaluates the work of assigned staff.
- Other duties as assigned.

QUALIFICATIONS GUIDE
Knowledge and Abilities:

- Ability to articulate and understand complex issues and facilitate effective problem-solving.
- Knowledge of principles, techniques, procedures and developments for the operation of data processing and communications technology.
- Understanding of technology integration in support of the instructional program.
- Knowledge of computerized educational management practices.
- Knowledge of complex computer systems design, analysis and operations, with a background in managing integrated database file structures.
- Ability to plan and direct a large, complex operation that involves coordination and integration of multiple interrelated activities.
- Knowledge and experience in system design, program development, debugging and system operation.
- Knowledge of operating systems and the integration of personal computers in information systems.
- Understanding of distributed processing.
- Ability to develop and maintain cooperative relationships with community members, certificated staff and classified staff.
- Knowledge of consensus building techniques and conflict resolution strategies.

Education and Experience:

- Master's Degree from an accredited college or university with major coursework or extensive experience in Technology, Educational Technology, Computer Science, Information Systems or Business Administration or a related field; Teaching or Administrative credential preferred; valid California driver's license.
- Preference for administrative experience, in a supervisory or management capacity, with educational technology, technology support and communications.
- Demonstrated record of strategic planning, budget management, integration and staff development.

REASONING ABILITY
Ability to apply common sense understanding to carry out instructions furnished in written, oral, or diagram form. The capacity to deal with and solve problems involving multiple variables.
PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable

accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit; walk; use hands and fingers, handle, or feel objects, tools, or controls; and talk or hear. The employee is occasionally required to stand, stoop, kneel, or crouch, and reach with hands and arms. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. While performing the duties of this job, the employee occasionally works near moving mechanical parts. The noise level in the work environment is usually moderate.

SANTA ROSA CITY SCHOOLS Excellence is our Common Ground	**POSITION DESCRIPTION**
Title: Chief Technology Officer	
Department: Information Technology	**FLSA Classification: Exempt**
Bargaining Unit: None	**Work Year: 12 Month**
Reports to: Superintendent	**Board Approval Date: 7/10/2013**

Salary Grade: Range 15 –Unscheduled Management Salary Schedule

Primary Function:
Under the supervision of the Superintendent, the Chief Technology Officer provides dynamic, responsive, collaborative and forward-thinking vision, leadership and management of technology systems and services to support the mission and goals of the District. This includes the planning, development, implementation, management and maintenance of all applications, infrastructure, security, networks, technology training and communications, as well as comprehensive support for the teaching and learning activities of the staff and students.

Essential Job Functions include, but are not limited to the following:

1. Works collaboratively with schools and departments to support technology integration and innovation. Identifies and supports instructional applications for technology.
2. Provides oversight and direction for integrated data communications networks and the use of integrated database management systems.
3. Plans, schedules and directs the development of computer programs, including needs analysis, interfaces with other existing and planned programs, debugs, and develops comprehensive documentation.
4. Implements and evaluates systems and procedures to protect data integrity, reliability, security and accessibility.
5. Organizes and coordinates appropriate staff development activities to ensure proper use of equipment and programs. Assures training is both operational and conceptual in scope.
6. Develops functional specifications, standards and requirements for hardware and/or software purchase and design to ensure optimum system and end-user performance.
7. Promotes participation of and collaboration with end-user and staff representatives in needs assessment, program development, service delivery efforts and project review.
8. Evaluates technological changes, emerging technologies and best practices in computer and communication fields to recommend innovative and cost effective integration of new technologies.
9. Directs the assessment and evaluation of the Information Technology Department, and the District standardized testing programs. Develops formative assessment processes in conjunction with Curriculum and Instruction.
10. In conjunction with Curriculum and Instruction, provides implementation to Smarter Balance Assessments and Common Core Standards.
11. Manages the District's presence on the Internet and provides the appropriate technologies to do so.
12. Manages operating budget covering all centralized computer support throughout the District and recommends prudent fiscal approaches for long-term hardware and software acquisition and

maintenance. In conjunction with the Purchasing Department, oversees bid requests, proposals and vendor contracts.
13. Coordinates student and staff events, promoting the use of instructional technology.
14. Serves as a technical resource and assures proper levels of technical support for District personnel; communicates with other administrators, District personnel and outside agencies to coordinate programs and activities, resolve issues and exchange information.
15. Directs the architecture, implementation and management of the District's technology infrastructure and information systems; assures infrastructure supports administrative and instructional technology services District-wide.
16. Directs the development and maintenance of the District's networked information systems including feasibility studies, systems analysis and design, programming, conversion of data, instructional technology and data storage and retrieval.
17. Directs the activities of the Help Desk to assure the resolution of problems and ongoing evaluation of customer satisfaction and problem resolution rates.
18. Confers with and coordinate with District sites and departments that share separate and related services to enhance the integration of technological support to users.
19. Supervises and evaluates the performance of assigned personnel; interviews and selects employees and provides mentoring and coaching to ensure staff development.
20. Provides technical expertise and information to the Superintendent regarding assigned functions and participates in the formulation of policies, procedures and programs; advises the Superintendent of unusual trends or problems and recommends appropriate corrective action.
21. Prepares and delivers oral presentations.
22. Attends and participates in a variety of meetings, workshops, conferences and trainings to maintain current knowledge of emerging technological trends; makes presentations regarding District information services objectives, plans and achievements to groups and committees.
23. Other related duties as assigned.

MINIMUM QUALIFICATIONS

Education and Experience

- Master's Degree from an accredited college/university or extensive experience in Technology, Educational Technology, Computer Science, Information Systems or a related field.
- Demonstrates strong management/leadership skills. A minimum of five years' of management experience.
- Demonstrated record of strategic planning, budget management, integration and staff development.

Licenses/Certifications:

- Teaching or Administrative credential preferred;
- Valid California driver's license.

Abilities

1. Act in a professional and positive manner
2. Establish and maintain cooperative and effective working relationships with others
3. Use tact, patience, and courtesy
4. Ability to articulate and understand complex issues and facilitate effective problem-solving.
5. Knowledge of principles, techniques, procedures and developments for the operation of data processing and communications technology.
6. Understanding of technology integration in support of the instructional program.
7. Knowledge of computerized educational management practices.
8. Knowledge and experience in system design, program development, debugging and system operation.
9. Knowledge of consensus building techniques and conflict resolution strategies.

Working Conditions

While performing the duties of this Job, the employee is often exposed to moving mechanical parts. The employee is occasionally exposed to risk of electrical shock. The noise level in the work environment is usually moderate.

Physical Abilities

While performing the duties of this job, the employee is regularly required to sit; walk; use hands and fingers, handle, or feel objects, tools, or controls; and talk or hear. The employee is occasionally required to stand, stoop, kneel, or crouch, and reach with hands and arms.

Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

PC APPROVED 9/19/07
Rev. 9/17/12

VENTURA UNIFIED SCHOOL DISTRICT

CLASS TITLE: CHIEF TECHNOLOGY OFFICER

BASIC FUNCTION:
Under the direction of the Assistant Superintendent-Business Services and the Assistant Superintendent-Education Services, plan, organize, control and direct Technology Services operations and activities including the development, design, installation, operation, analysis, maintenance and repair of computer and network systems and related hardware, software, databases and applications; coordinate and direct the development and maintenance of the District Technology Master Plan; design, develop and implement plans and projects for the integration and networking of computer hardware, software, infrastructure and telephones; supervise and evaluate the performance of assigned personnel.

REPRESENTATIVE DUTIES:
ESSENTIAL DUTIES:

- Plan, organize, control and direct Technology Services operations and activities including the development, design, installation, operation, analysis, maintenance and repair of computer and network systems and related hardware, software, databases and applications including student information systems, district networks, provision of web services, information and system security, telephone and communication systems, and other approved district technology needs.
- Ensure that data processing and network activities are coordinated with all affected district operations and appropriate and adequate service is provided to those district functions and offices that rely heavily on information systems including, but not limited to: the Business Services Office fiscal and attendance accounting functions; Human Resources; the Superintendent's Office; Educational Services; and school cafeteria point-of-sale systems.
- Monitor all District technology systems, including, but not limited to: the student information system, network, web servers, email services, and client machines and make recommendations concerning the purchase of software, supply items, and new hardware designed to increase efficiency, access, and reliability.
- Enable the district to offer technology-based and online learning opportunities for students and explore revenue-generating programs for the District.
- Adapt existing technologies to new uses and envision natural relationships between emerging technology resources that can benefit delivery of educational opportunities and District operations.
- Understand and communicate the ramifications of technology use, and develop medium and long range plans for technology use.
- Coordinate and manage the resources necessary to implement and maintain a comprehensive technology strategy.
- Work with District Purchasing office to establish technology procurement processes for the district that meet regulatory requirements and ensure the best value for district software and hardware purchases and consistent with the District's commitment to environmentally friendly technology.
- Provide student data in order to facilitate data-driven decisions that will guide instruction, improve student achievement, and promote Response to Intervention (RTI).

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- Support the integration of K-12 standards-based technology skills into curriculum and assessment.
- Work effectively and communicate with all stakeholders to include, but not be limited to, certificated and classified staff, management, students, parents, governmental entities, and community members.
- Explain, in non-technical terms, what various types of technology do and why each can be essential to learning.
- Communicate and keep the District compliant with legal and ethical issues associated with the use of technology (e.g. cyber ethics, privacy, child protection, public access, copyright).
- Chairs the Technology Committee and works collaboratively to build, manage and monitor the District Technology Plan.
- Confers with all appropriate departments to ensure adequate infrastructure (electrical, structural, temperature controls, etc.) exist throughout the district to support district technology needs.
- Select, supervise and assess the performance of assigned personnel.
- Maintain current knowledge of technological advancements in the computer field; knowledge of personal computers, handheld and personal data devices, network operating systems, bandwidth options, system integration opportunities and emerging technologies.

OTHER DUTIES:
Perform related duties as assigned.

KNOWLEDGE AND ABILITIES:
KNOWLEDGE OF:

- Planning, organization and direction of Technology Services operations and activities including the development, design, installation, operation, analysis, maintenance and repair of computer systems and related hardware, software, networks, databases and applications.
- Computer systems, hardware, software, databases and applications utilized by the District.
- Practices, procedures and techniques involved in the design, set-up, development and modification of computer, telecommunication and network systems, web sites, hardware, software and applications.
- Educational software and technology applications and trends.
- Principles, methods and procedures of operating computers, network systems and peripherals.
- Computerized data collection, management, manipulation and distribution requirements for analysis and reporting functions.
- Principles, practices and methods of database structures, computer programming and system design.
- System utilities and design and program applications.
- Principles and techniques of systems and network analysis.
- District organization, operations, policies and objectives.
- Policies and objectives of assigned programs and activities.

VUSD: Chief Technology Officer - Continued **Page 3**

- Applicable laws, codes, regulations, policies and procedures.
- Principles and practices of administration, supervision and training.
- Budget preparation and control.
- Oral and written communication skills.
- Interpersonal skills using tact, patience and courtesy.

ABILITY TO:

- Plan, organize, control and direct Technology Services operations and activities including the development, design, installation, operation, analysis, maintenance and repair of computer and network systems and related hardware, software, databases and applications.
- Coordinate and direct the development and maintenance of the District Technology Master Plan.
- Design, develop and implement plans and projects for the integration and networking of computer hardware, software, infrastructure and telephones.
- Supervise and evaluate the performance of assigned personnel.
- Direct the design, set-up, development and modification of computer, telecommunication and network systems, web pages, hardware, software, databases and applications.
- Evaluate and implement educational technology and software.
- Plan, organize, control and direct the investigation, troubleshooting, diagnosis and repair of hardware, software and network malfunctions.
- Coordinate the installation, configuration, maintenance and repair of telecommunication systems.
- Communicate effectively both orally and in writing.
- Interpret, apply and explain laws, codes, rules, regulations, policies and procedures.
- Establish and maintain cooperative and effective working relationships with others.
- Operate a computer and assigned office equipment.
- Analyze situations accurately and adopt an effective course of action.
- Meet schedules and time lines.
- Work independently with little direction.
- Plan and organize work.
- Prepare comprehensive narrative and statistical reports.
- Direct the maintenance of a variety of reports, records and files related to assigned activities.
- Maintain regular and consistent attendance.

EDUCATION AND EXPERIENCE:

Any combination equivalent to sufficient experience, training and/or education to demonstrate the knowledge and abilities listed above. Typically, this would be gained through: bachelor's or master's degree in computer science or related field and five years increasingly responsible experience in the development, design, operation, analysis, maintenance and repair of computer and network systems and related hardware, software, databases and applications. Recent experience with the evaluation and implementation of educational technology and software is highly desirable.

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LICENSES AND OTHER REQUIREMENTS:
Valid California driver's license.

WORKING CONDITIONS:
ENVIRONMENT:
Indoor work environment.
Driving a vehicle to conduct work.

PHYSICAL DEMANDS:
Dexterity of hands and fingers to operate a computer keyboard.
Hearing and speaking to exchange information.
Seeing to read a variety of materials and view a computer monitor.
Sitting or standing for extended periods of time.
Lifting, carrying, pushing or pulling moderately heavy objects as assigned by the position.
Bending at the waist, kneeling or crouching.
Reaching overhead, above the shoulders and horizontally.