Information Technology

Queen of the Holy Rosary - Wea
BUCYRUS, KS

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PAST TECHNOLOGY ENHANCEMENTS / PROJECTS

In the past few years, our technology at the Queen of the Holy Rosary School in Wea, Kansas has been significantly upgraded. These enhancements provide a rich technology environment for our students, teachers, and staff. Please see below.

Security & Safety – the safety and security of our students is paramount. Many enhancements were made to systems to improve our situation.

- **School Lock Down System** – (Summer 2019) This has been established for the highest level of emergency. This system, when any of the "Lock Down" buttons which are located at strategic places throughout the school or the master wireless "Lock Down" fobs are pressed, specified locations of the school will be put into a lock down mode. Specific doors will be closed, and mag locked, sirens and strobes will be active, a message will be broadcast, Miami County Police will be contacted, and certain policies & procedures will be enacted. The goal is to minimize school access, secure areas, provide additional barriers, and dispatch emergency personnel. (Fall 2020) we installed additional external speakers, strobes, and sirens for improved exterior coverage.

- **Controlled Door Access** – (Summer 2019) We've upgraded our door access control and systems to Kantech, added five (5) additional card readers to secure access to the building, and upgraded our cards and readers to encrypted versions. Card access can be granted based upon need. Doors can be opened and closed based upon dates / times. These systems can be managed by a local pc or a mobile phone.

- **Security Cameras** – (Summer 2019) We've upgraded our security system to include a 64 channel 4K network video recorder (NVR), eight (8) new cameras situated around the perimeter of the building and moved three existing cameras to provide better coverage inside the school. This brings the total number of cameras for the school to eighteen (18). Video can be viewed via a local pc or with your mobile phone. Our goal is to have 30 days' worth of video stored for each camera. (Fall 2020) we added three (3) additional cameras for better vision into our lunchroom, kitchen, and bathroom foyer.

- **<u>Thermal Camera</u>** – (Fall 2020) we purchased and installed a new thermal camera that takes student, staff, and visitors' temperatures 30 at a time. Notifications & alarms are active when someone with a temperature above a pre-determined level comes into our school. The principal, nurse, and others are notified with an email and picture of the individual who has a high temperature. All traffic is routed to our main entrance where they are scanned. This has helped enormously with our Co-vid pandemic safety procedures. This integrates seamlessly with our current security camera system.

- **<u>Visitor Management</u>** – (Summer 2019) This is a software and hardware solution that allows our front desk personnel to track and manage visitors to the school. A photo ID is required and scanned,

information is automatically gathered and populates identification fields (name, dob, etc.), information gathered is sent to a national sex offender database and if cleared a badge with picture of the visitor is printed. This all takes less than a minute. Date and time stamps are taken initially and when the visitor / contractor is leaving - checkout occurs in seconds. Management reports can be gathered, and end of day procedures can determine if someone hasn't left the building.

Devices – our educational tools are critical to our teaching and success in a modern world. To that end we've invested heavily in keeping our students, teachers, and staff's technology updated.

- **Chromebooks** – Since the beginning 2019 through this year we replaced our student Chromebooks grades 3-6. All students in grades 3-6 are now 1:1 with Dell Chromebook 3100 devices. We are working with the BFFKC foundation at this time to replace the 7-8 grade student Lenovo Chromebooks with Dell Latitude 3390 2-in-1 laptops. These devices will be the same as the teachers, thus allowing middle school students to use G workspace as well as Microsoft interfacing. We have noticed that the old Lenovo's do not allow students to use robotic kits in the STREAM lab efficiently. Two in ones would also provide the interactive use as iPads do for Math and Science instruction.

- **iPads** – In 2017 fifteen iPad Air 2's were purchased for grades K-2 to share. In 2019 these iPads were moved into a checkout cart for grades 3-8 to use. This cart is housed in the Music room since the instructor uses garageband, seesaw, staff wars and other apps daily in her class instruction. In 2019 with Grant money from BFFKC Foundation iPads were purchased so that First and Second grades had one iPad per student. A set was also purchased to be used only in the STREAM lab. Teachers in grades K-6 and Special teachers also received their own iPads for class instruction. In the fall of 2020, extra iPads were purchased to give Kindergarten, First and Second grade enough for 1:1 for a classroom of 19 students. All remaining teachers, preschool - Middle school, the Nurse and secretary also were given iPads for their use. It was important that all Preschool -Middle school teachers had iPads to use for Zooming during quarantine learning. At this time, Kindergarten has 18 iPads, First has 20, Second has 20 and the STREAM Lab has 19. All iPads in these classes are 6th-8th generation.

  Apps for using these devices to produce work instead of just consuming are used frequently in the classroom. SeeSaw is purchased as our interactive School Management System. This is our main communication piece between student, parent and teachers in grades K-2. Students can turn in work using this system as well as create videos, written work and drawing. Our main School Management System for 3-8 is Google Classroom. All grades have been set up on devices and have been instructed how to use both. Both systems allow for student production of work on home computers as well as at school. All of our instructional platforms for student use can be used out of school through our G workspace use. Platforms such as Discovery Education, Dreambox and Typetastic can be assessed through apps and used on all iPads in the classroom.

- **Laptops** – In the Fall of 2019 we purchased twenty (20) new Dell Latitude 3390 2-in-1 laptops for our teachers. These have been an invaluable tool for our teachers, especially important when we went to remote learning due to the pandemic. Teachers are connected to the school interface by using G

Workspace. Documents, lessons, student assignments and projects can easily be shared throughout the teacher community. Teachers can also use the apps from Google Store and the Chrome Web store to download features to supplement learning for students – i.e., Jamboard from Google and Flipgrid from Microsoft. Teachers are able to bring devices to meetings and home to work and share in a community. The laptops work well when Special teachers go to classrooms to instruct. They use Collage to screen from their own computers to the Clear Touch Panels in the room. Having a laptop has allowed for more organization in teacher preparation and planning and has let teachers become more creative as they become familiar with the tools and how to interact with the different platforms and tools in G workspace. The teachers have become mentors for the students on how to have a growth mindset in using technology in all forms of learning.

- **Desktops** – In 2019 and 2020 we replaced all of our staff desktop computers with Dell OptiPlex 3070 machines. For many we installed dual monitors increasing efficiency. These units provide faster and more reliable performance.

- **ClearTouch Panels** – we've installed all new ClearTouch interactive display monitors in all of our classrooms 1st – 8th grade and in Music and the STREAM Lab. Additionally, all of these units were ordered with the optional computer module that is hard-wired into our network. Teachers use a wireless keyboard and mouse to control the system. The ClearTouch panels have 20 points of touch allowing incredible control of the systems. Having these boards in the classroom have lessened the stress on teachers when presenting information. Being untethered is allows for movement and increased interaction with students because teachers are not forced to stay in one position. Teachers use the canvas application on the boards for whiteboard use. The annotation feature on documents and videos is invaluable. The dual use of the boards with the google Jamboard app ensures one to one teacher student interaction, thus providing 100 percent accountability in the classroom. All students have the Collage app installed so any student can share their work on the screen at any time. One of our online Curriculums is Discovery Education. This platform has interactive tools and lessons built into the online curriculum. The students can do these lessons on their devices as the teacher does them on the ClearTouch at the same time; again, 100 percent accountability. The ClearTouch panels also allow for the download of apps. Using Google Earth on the ClearTouch gives teachers an added plus because they can draw, write, etc. as student's travel the world.

Device Management – managing and maintaining our devices is critical to our overall ability to educate and work. Our device management solutions allow us to keep our operating systems, programs, firmware, etc., current. We can push applications and policies centrally without having to visit each client individually.

- Chrome Management – Google Admin – all students, teachers, and staff use Google Workspace for email, document management, slides, sheets, etc.
- PC Management – Dell Command Update
- Windows Updates
- LogMeIn

All of these allow us to manage our student, teacher, and staff security, devices, applications, etc.

Network Infrastructure – our network infrastructure has been massively overhauled since Spring of 2020. A managed, secure, and high-performance infrastructure provides the backbone of our daily operations. This isn't the "glitzy" stuff but it's absolutely integral to a successful school environment. Our entire network closet of old equipment has been replaced with enterprise level equipment. Uptime, high-performance, and security have been all significantly enhanced with these changes, allowing teachers to teach, students to learn, and staff to work.

- **Fiber** – a fiber connection to CenturyLink has been run to the school. This increases our internet speed from our old 80mbps download and 50mbps upload to 1,000mbps for both download and upload speeds. Actual speed varies depending on overall usage and whether you are hard wired or using Wi-Fi. This significantly reduces congestion of the internet pipe and allows staff, students, and guest high speed connectivity.

- **Inter-Facility Wiring** – new Cat 6 weatherproof wiring has been run to the Rectory, Adoration Chapel, and Large Daycare. The old wiring was Cat 5 and not weatherproof causing possible connectivity and performance issues. Additionally, a high-speed wireless building to building bridge has been installed between the school and church. This will allow us to overlay our technology from the school to the church and becomes the foundation for our live streaming of mass and other events. Mapped all building wiring.

- **School Annex Wiring** – the old wires running down the walls of the annex have been re-run in the walls. A new high-speed switch has been installed in one of the closets where the new wire runs have been terminated. The new switch operates at 1,000mg whereas the old one was 100mg.

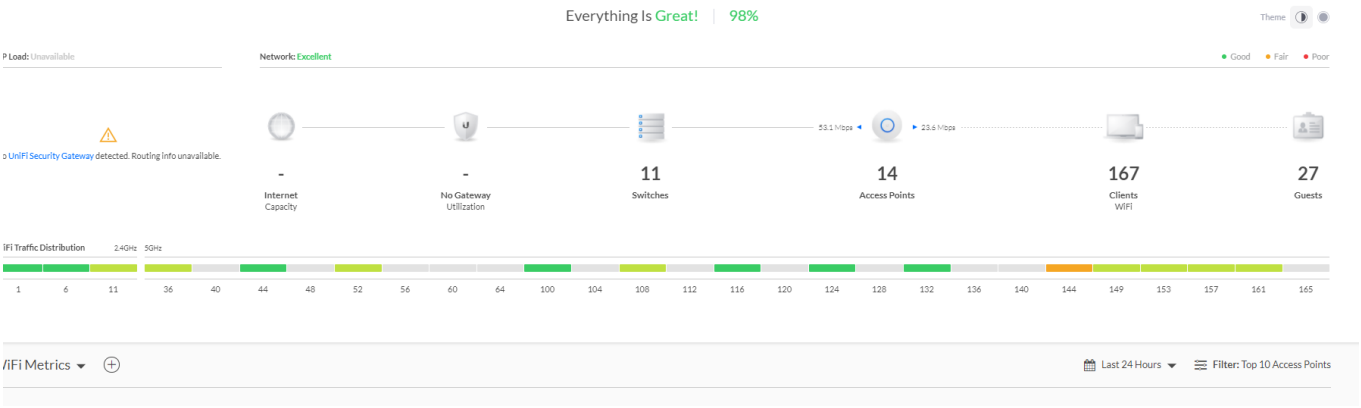
- **Office Wiring** – a number or wires have been pulled to accommodate phones where desks are located. For instance, wires have been pulled for our music teacher and third grade teacher so the phones can be located on their desks.

- **Switches** - – Four new enterprise level switches and a Controller have been installed in the IT closet to be the foundation for the network. These four switches are high speed, easily managed, and provide extensive insight into the performance of the network and client experience. This establishes a foundation for future technology.

- **Access Points** – in 2020, all school and campus access points have been upgraded to high density access points capable of handling 200 concurrent connections without significant performance degradation.

- **Controller** – a network controller has been installed which allows us management insight into the health of our network from one "pane" of glass. We can see how our system is working down to an individual devices' connectivity experience. We can push firmware updates to all of our networking

equipment including our switches, controller, access points, building to building bridges, etc. from one interface. Please see the below picture:



Communication – the ability to effectively communicate in all situations is paramount. Communication comes in many forms from a phone system, to radios, to communicating to our parents and parishioners. Our communication systems have been greatly improved since the Summer of 2019.

- **New Phone System** – A new CenturyLink IP phone system was installed the Summer of 2020. As part of this project, we installed a new fiber link (see above in Network Infrastructure). We ported over our existing numbers to the new system and modified our auto-attendants to help manage calls. Voicemail is integrated with our email such that if you leave a message the user will receive an email with the attached message. This is an IP system and our uptime, quality of calls, and performance has been enhanced. We have a phone in each classroom.

- **Motorola Two Way Radios** – Thirty (30) Motorola DLR 1060 two-way radios were purchased in the Summer of 2019. Every teacher and most staff will have these radios available. They have a 1.5 mile range and as we've tested have great coverage for the entire campus to include the very edges of the property and even the basement of the adoration chapel. They have six channels, light weight, and allow fast and effective communication. Teachers have a pre-programmed button that allows private conversation to the Principal. Currently, all radios are programmed to return to a "home channel" after a certain period of inactivity. This helps ensure all radios are tuned to an "all" channel for global communication during an emergency event.

- **Live Streaming** – We installed a new livestreaming hardware and software platform that allows us to stream mass, school, and other church events to Facebook, our website, and to Vimeo for archival purposes.

- **Flocknote** - For a number of years our parish has been looking for a new communication system that combines a parishioner / school database and communication tool into one. Previously, we've had all sorts of separate systems that are not integrated making maintenance of data inefficient at best and impossible most of the time. Flocknote is a system built specifically for churches allowing communication to be done via email or text for all types of groups (Parish, School, From the Pastor,

Deacon's Weekly Message, Weather Cancellations, Knights of Columbus, Ushers, Women's Club, etc). The system tracks who have read and replied to the communication. Additionally, Flocknote People an add-on module, is a member database that maintains contact information and tracks giving for our parish. The Flocknote system uses various strategies that allow members to maintain their information. "Intelligent Info. Gathering" is one such strategy. In a nutshell, the system will ask members to confirm their info in the footer of emails you send through Flocknote to ensure the information you have on file is up to date. It's a dynamic process not requiring near the staff time to accomplish.

Future Projects – to continue our positive direction we must maintain, enhance, and manage our technologies. Our ability to be fluid to the educational and environmental demands of the day require our constant attention. Here are a few future items we'll address.

- **Apple School Manager & Jamf Mobile Device Management System** – In order to manage our Apple devices more efficiently we will be instituting Apple School Manager and Jamf a school mobile device management solution. In combination, these products will enable us to update our iPads, Macs, etc. centrally. Operating System updates and the ability to push policies and applications by grade level and function will be a result. Current staff time managing this will be greatly reduced.

- **Installation of New Gateway** – We will be installing a new gateway to our network infrastructure. This equipment will provide enhanced security, management, and vision into our internet usage.

- **Web Filter** - we're analyzing various web-filtering systems that will enhance our student safety while using the internet.

- **Security Cameras** – expand coverage with additional cameras.

- **Door Access** – expand number of controlled doors.

- **Device Replacement Strategy** – address budget and possibility to replace certain percentage of devices every year.

Sincerely,

Mark Andrasik – IT Manager *Lee Gruss - STREAM Facilitator/PBL Coordinator*