Information Technology In Council Rock

Citizens For Education recently set out to determine the current status and the future plans for Information Technology (IT) in Council Rock by meeting with CR's Director of Information Technology, Matt Frederickson. Mr. Frederickson, who reports to Superintendent Mark Klein, manages a $1.8M annual budget and leads a team of nine employees who are responsible for technology implementation. This includes purchasing, managing, and servicing infrastructure comprising over 5,300 desktop and laptop computers, 700 iPads, 130+ virtual and physical servers, 300 wireless access points, 200+ printers/copiers, and Smart boards in each of the 734 classrooms in the district. Many of the laptops, iPads, and Smart boards were purchased by school PTOs or through grants from the Council Rock Education Foundation, but the IT department remains involved regardless of the funding source. Additional tasks include managing the district website, supporting school and PTO webmasters, and programming for CRTV. The average response time to close a technology-related service ticket is 4-6 hours, an impressive statistic considering the district has 13,000 users in 18 buildings spread over 72 square miles. Network technicians can often connect virtually to troubleshoot computer problems in the classroom, enhancing the speed of the response. [Note: Home Access Center (HAC) is handled by a separate group reporting to Barry Desko, Director of Secondary Education].

Mr. Frederickson's computer and management savvy go way back – he built his first computer at age 11, later completing a Psychology degree from Shippensburg University, an MBA from LaSalle University, and an MS in Learning Technologies from Drexel University. Prior to his work at CR, he managed IT departments at several companies.

What's New or On the Horizon?
Moodle. One newly implemented IT resource is Moodle, a tool that allows teachers and students to work collaboratively online. Used on many college campuses, Moodle is an open-access, web-based learning management system that can be used at all age levels to submit homework, conduct and grade quizzes, and engage students in a discussion forum. While it could be used to offer courses online, its primary purpose is to augment classroom instruction and introduce students to the concepts of online learning.

Ericom. Currently each student is assigned a personal file storage location, referred to as their "H" drive, where they can place Microsoft documents that are generated at school or at home and access them from either site. Remote access (from home) has been traditionally through Citrix. Because support of this program has been problematic and expensive, CR is trying a new system which promises more flexibility at a lower price. Ericom, the replacement, has a browser-based front end for easier access, HTML5 compatibility, and operates on PCs, Macs, and Google Chromebooks. By the end of the 2013-14 school year, Citrix will be phased out completely; full implementation of Ericom will be less costly than the annual support cost for Citrix.

BYOD. One of the biggest issues in the district is the need for more laptop computers in the classrooms. In an ideal world, according to Mr. Frederickson, six laptops per classroom would enhance collaboration, allowing 4-5 students to share each laptop. In lean fiscal times, however, funding this many computers every four years can be cost prohibitive. Instead, the district favors a concept called Bring Your Own Device (BYOD), in which each student brings the portable computing device of his/her choice to school to

enhance classroom learning. Current CR policy prohibits students from bringing their own computer devices to the classroom, but this can be overruled by administration on a case-by-case basis.

The district has long-range plans to install wireless access points in every other district classroom to facilitate BYOD implementation. In spring 2014, Mr. Frederickson hopes the district will pilot a BYOD program; there is a committee that is meeting semi-regularly to work toward this goal. In order to enhance access for all students, Mr. Frederickson envisions an annual August technology fair where computer hardware companies would come to Council Rock to promote and lease their devices to students and their parents. Periodic on-site vendor support to address technical issues would be included, and at the end of their high school career students would be able to purchase their current device or trade it in to purchase a newer device for their higher education.

Fully implementing a BYOD strategy is not without its challenges, however, some of which are listed as follows:
1. All devices would need to be able to run on the same system and access the district interface.
2. Wireless access would likely be needed in _every_ classroom at a cost of approximately $800 per additional classroom.
3. The servers would need to be able to handle the traffic, and battery charging kiosks would need to be available during the school day.
4. Students need to be kept safe when using this technology by blocking inappropriate content while using the district's internet access and by monitoring or restricting data that students already have on their devices while at school.

Traffic Speed. The speed at which digital data moves between buildings is currently 1 Gigabit per second (Gb/s). The district goal is to improve this speed to 10 Gb/s within the next three years. Upgrading to 10 Gb/s between buildings is part of the natural progression of technology; as more data/voice/video are used in the classroom, the demand for better bandwidth increases. Implementing this will require upgrades of various pieces of equipment throughout the district, and will be phased in over the next few years as part of the normal operational budget.

Barcode Scanning. One idea that has streamlined an existing process involves how students select their specific gym class, i.e., volleyball, weight room, tennis, etc. Both high schools are currently using a system developed by the IT staff that allows the teachers to scan barcodes to populate a database. This database is then used to produce attendance sheets, allowing staff to know specifically where students are during gym while substantially reducing the quantity of paper reports utilized in the past.

eRate. eRate is a federal program whereby funds collected for telephony services (home phones, cell phones, etc.) are redistributed to public schools and libraries based on a funding formula similar to the one used to determine free and reduced lunches. Every year the FCC allocates a percentage of those funds to schools in Pennsylvania. CR receives, on average, approximately $75,000 annually. One of the new requirements this year for funding eligibility was the inclusion of Internet safety instruction at all grade levels in the district.

Staff Technology Support. Some district teachers are much more versed in new technology than others. Currently, CR implements a technology mentor program in

which each school identifies two teachers who are or want to be technology 'evangelists' by spreading technical expertise to others in the building. Due to budget constraints, however, a separate position of technology integration specialist, i.e., a full time, former classroom teacher who assists other teachers in using technology in the classroom, was eliminated approximately four years ago. With more technology being used every year, it would be advantageous to both students and teachers to reinstate one or more technology integration specialists that could serve teachers across the district. Working out of the main administration building, the former positions (there were two) served one at the elementary level and one at the secondary level.

Mr. Frederickson has been thoroughly researching many IT possibilities and carefully noting trends. While some districts around the country have already purchased iPads or laptops for every student, Mr. Frederickson stated that there are advantages to the 'wait and see' approach. By carefully monitoring what other educational establishments are doing, CR can learn from their successes and failures and avoid costly pitfalls. In the meantime, giving CR students the benefit of working with new technology so they can be prepared to compete for college acceptance and employment possibilities remains a key goal for Mr. Frederickson and his IT team. Citizens For Education thanks Mr. Frederickson for the time and information he gave in support of this article.