RANDOLPH TOWNSHIP SCHOOL DISTRICT TECHNOLOGY PLAN

FOR NEW SCHOOLS

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1. **GENERAL INTRODUCTION AND BACKGROUND**

1.1 District Profile

Randolph Township is an upper-middle class suburban community in Morris County, with a median household income of $123,578, and a 97% education attainment rate above high school (United States Census Bureau, 2010). Census 2010 demographic profile shows that there are 9,013 households, 7,078 families, and 6, 962 children under 18 years old in Randolph Township. Among its total population of 25, 734, 82.4% residents are white. The largest ethnic minority is Asian which consists of 10.5% of total population, and the remaining are Hispanic, African American, and other races.

Currently, there are four elementary schools, one middle school, and one high school in Randolph Township. Among the total student population in the district, there are 16.5% students with disability, 7.0% economically disadvantaged students, and 1.3% limited English proficient students (New Jersey Department of Education, 2014). Due to population increase in the recent years, there will be an addition of two elementary schools and one middle school (note: this information is not based on fact. Rather, it is a hypothetical scenario created for this project). The three new schools will bring vibrant energy to the school community. This technology plan provides a framework for action to ensure that the technologies in the new schools are integrated with the district-wide technology strategic goals.

1.2 Planning Process

This technology plan takes a system approach to designing, developing, implementing, and evaluating the effective use of new technologies to enhance teaching and learning across curriculum. It involves all stakeholders, including: students, classroom teachers, information technology staff, administrators, and parents. It fosters school and community partnership to ensure communication and resource sharing. It also applies Universal Design for Learning (CAST, 2011) concepts to enable, motivate, and inspire all students to achieve their full potential, regardless of background, languages, or disabilities. Additionally, this plan is based on federal and state laws, standards, and curriculum framework in regard to technology in education, including the Education Technology Plan for New Jersey (New Jersey Department of Education, 2007), and the New Jersey Core Curriculum Content Standards for Technology (New Jersey Department, 2014). Furthermore, this plan is designed to meet the requirement for e-rate (FCC, 2014), federal funds in compliance of No Child Left Behind Act (NCLB) (2001) and Children's Internet Protection Act (CIPA) (United States, 2003).

2. MISSION AND VISION FOR THE TECHNOLOGY PLAN

2.1 District Mission

The Randolph Township School District is committed "to inspiring and empowering all students in Randolph schools to reach their full potential as unique, responsible and educated members of a global society" (Randolph Township Schools, 2015).

2.2 Vision for Technology Strategic Plan

Within the context of the Randolph Township School District's mission statement, we believe that technology is a powerful tool to expand instructional capability, and is an enabling means to maximize learning capacities for students. Therefore, we envision the following as the vision statement for the technology strategic plan:

The Randolph Township School District connects students, teachers, and parents to the global information and knowledge through evaluation, planning, and application of innovative technologies in education transformation to meet the curriculum needs of 21st century learners. It provides technology tools that expand educational opportunities for students and enhance their lifelong learning skills so they can succeed in a rapidly changing society.

2.3 Mission Revision for the Three New Schools

In alignment with the core value stated in the Randolph Township School District's Mission to create a thriving environment to maximize all students' achievements, this technology plan provides a blueprint to ensure that technology is distributed effectively to the three new schools in the district. It sets specific objectives in the areas of curriculum integration, technology implementation infrastructure, and professional development as following:

- Manage technical solutions to technology infrastructure, hardware and software to ensure access to current technology for all students and teachers

- Set policies and procedures to guide the safe and appropriate use of technology in schools
- Nurture students to acquire media and information literacy, critical thinking and problem-solving skills, and digital citizenship responsibilities
- Implement technology enabled learning analytics to evaluate the educational programs and students' progress to enhance accountability
- Establish on-going professional development arrangements to keep teachers informed and trained in new technology tools and systems
- Create assessment and evaluation procedures for this technology plan to sustain and maximize the use of technology in teaching, learning, and administration
- Meet the needs of all students with different learning styles and skills, and various cultural and learning backgrounds

3. NEEDS ASSESSMENT/GOALS

According to Dr. Eval of ISTE's Research and Evaluation Department (2015), a needs assessment is a form of evaluation regarding the anticipated hardware, software, network, and service needs; prepares and administers the budget for technology as it relates to administrative and academic needs. The process evaluates the needs, concerns, and opportunities among stakeholders prior to implementing new initiatives. Also taken in to consideration are the following aspects of technology integration in teaching and learning provided by Fraziers (2012): instructional software, curriculum integration, digital citizenship and Internet safety, interactive

online learning, cloud computing, professional development, and web-based instruction materials.

The district has a very solid needs assessment process to identify the essential hardware, software and services using various tools to examine the needs to integrate technology into curriculum. The follow methods are employed to gather feedback:

- Conducting inventories of the age, capacities, and speed of existing hardware and software to make them up-to-date
- Analyzing data analytics reports to evaluate the usage of technology in the teaching, learning and administrative settings
- Surveying teachers, students, parents, and administrators on their technology needs for curriculum development, teaching and learning effectiveness
- Surveying and analyzing technology skills of students, teachers, staff, and administrators to determine training and professional development needs
- Check the compliance of PARCC readiness, CIPA and NCLB compliance and e-rate mandate
- Conduct testings on safety and universal accessibility to technology

4. FUNDING PLAN

Adequate funding support is crucial for the fruition of this technology plan. Frazier (2012) suggests these funding needs be covered: hardware, software, contracts and services, professional development, maintenance and upgrades. We also include network, filtering, and other miscellaneous services. Budget will be allocated as follows:

- Hardware 20%
- Software 15%
- Contracts and services 10%
- Professional development 20%
- Maintenance and upgrades 15%
- Network 15%
- Filtering 1%
- Other miscellaneous services 4%

The funding sources for this technology plan are drawn from federal, state, local, and donations and grants. In compliance with federal and states laws and regulations governing school funding, the district technology plan as a whole has addressed and met the requirements, including but not limited to the No Child Left Behind Act , Children's Internet Protection Act, Americans with Disabilities Act, New Jersey Educational Technology Teacher Training Fund (N.J.S.A. 18A:6-105), and Common Core State Standards.

Donations and grants will be sought from the following:

- Department of Education STEM and educational technology grants: http://www.nj.gov/education/archive/techno/grants/
- National Science Foundation funding and grant awards: http://www.nsf.gov
- Ford Foundation funding and endowment to support 21st century educational innovations: http://www.fordfoundation.org

- Donations of money and technology equipment from business, families and friends in local communities

In addition, the government e-rate program provides substantial discounts to schools and libraries for telecommunication and Internet access costs (Frazier, 2012; Fletcher, 2014). The Randolph Township School District Technology Plan has completed the required forms and documentations to receive the funds from the FCC. This technology plan is consistent with the district plan in fulfilling the requirements for government e-rate program with due diligence.

5. TECHNOLOGY ACQUISITION PLAN

At any school organization, there are different types of technology users, it is the job of the technology coordinator to make sure that different types of needs are being met. According to Frazier (2012), Technology coordinators ought to make sure to use technology to support the instruction not as a replacement of traditional classroom (ex. eBooks for books, word processing for writing utensils). Tech coordinators must have a clear understanding of how equipment will be used because the setting will determine software and hardware needs (Frazier, 2012)

Randolph Township School District has indicated in the technology plan that they need the following:

- Technology equipment including assistive technologies
- Networking capacity
- Filtering method
- Software used for curricular support and filtering

- Technology maintenance and support

Technology coordinator (TC) will first visit the three school buildings to decide on the ergonomics and make sure that the placement of equipment won't pose any health risks for the users. The size of monitors and screens will be determined to be placed at a comfortable heights and position of windows will be taken into consideration so the monitors won't face them. Adjustable chairs will be provided and training on how to use the equipment ergonomically to reduce eye and neck strain and prevent injuries resulting from repetitive-motion problem associated with the use of technology.

TC will meet with the staff of all teaching levels to understand their various needs and to determine the software and hardware to use for each group (Fraizer, 2012). Before looking into purchasing the equipment Eisele-Dyrli (2011) suggests to focus on functionality. She suggests to write down the needs in a form of verbs (ex. share, collaborate, research, etc...) to determine the purpose of acquiring the technology. Fraizer (2012), suggests that TCs be mindful of venders who will try to sell the latest new technology buzz.

TC will obtain a current pricing from variety of retailers and manufacturers, compare prices through a competitive bid process. A formal bid request will be used that describes the specifications of items to be purchased, a timeline for when the bid should be returned and the date and time for formal bid opening (Fraizer, 2012).

For equipment support and maintenance, TC will look for a service that can manage, inventory and secure workstations and laptops. The service should provide mobile management for the use of tablets and smartphones. TC will look for a vender that can

provide a service desk for when a staff member is requesting a new application or has a notification of a critical service interruption. TC will also make sure that the vendor is providing a way to manage USB/Mass Storage Devices and make sure to block access to unauthorized use of these devices (Micro Focus, 2015).

6. ACCESS

Before the rollout of the equipment for students, teachers will be given equipment first and adequate training on instructional planning that integrate technology to get acquainted with the software and hardware before implementing it in their classrooms (Fraizer, 2012).

One of TC roles is to make sure that technology is been utilized by students and staff in different settings and for all learning abilities (Noeth &Volkov, 2004). It takes a certain level of planning, structure, preparation and evaluation to ensure that access to technology actually enhances learning and drive achievement. According to Noeth &Volkov (2004), enhancing the technology skills of teachers and administrators and develop standards that include technology, will have a great impact on learning because it expands technology from being used as an instructional delivery to and integral part of the learning process.

To provide technology access to the new three schools, TC will provide these services:

- Access to digital content for example text eBooks and supporting subscription databases that provide differentiation depending on learning abilities (Noeth & Volkov, 2004).

- Simulation and real-world experiences by utilizing three-dimensional (3-D) immersive virtual software. According to Hew & Cheung (2010), virtual spaces provide students with communication, spatial and experiential involvement. It also fosters social interactions among students in K-12 settings.
- Productivity tools that employ software applications such as spreadsheets, word processing and databases to organize information and produce intellectual products (Noeth & Volkov, 2004).
- Professional development that enable teachers to use technology for personal productivity, support learning in their content areas, design learning activities, manage student-created, technology-supported activities and assess student skills within all those activities. According to Noeth & Volkov (2004), successful integration of technology depends on individual teachers and it's essential to prepare them with the necessary skill levels.
- Provide Assistive Technology (IT) tools for students with disabilities. According to McCrea (2014), combining tablets with applications like Proloquo2 and Panopto help students with disabilities to communicate efficiently and enable teachers to apply concepts like flipped classroom to special education classes.

7. USER SUPPORT PLAN

Different types of users have different purposes of using technology and the technology coordinator has to make sure that there is a well-established support

system for each of them that he/ she delivers in a timely manner. A technology coordinator is in this role as a customer service manager (Fraizer, 2012). According to Fraizer (2012), TC should coordinate between teaching stuff and IT stuff by listening to all sides of an issue and then finding a solution that meets the needs of all groups and end-users.

According to NCES (2002), in the early stages of technology integration in schools, the need for maintenance is mostly unanticipated. Schools often enlist the help for volunteers and teachers with knowledge in technology, but such roles are not sustainable. NCES (2002) recommend a formal system for maintenance and support to be established.

The 2004 Virginia General Assembly passed legislation that requires a ratio one instructional technology resource teacher (ITRT) and one technology support position for every 1,000 students in grades K-12. Roles are divided as follows; ITRT will manage technology integration, while technology support personnel help ensure smooth operation of teaching and learning applications (Office of Education Technology, 2008).

TC will establish a help desk for all three schools that can be contacted by phone or email. An IT staff member who is knowledgeable of software and hardware will be responding to call to the help desk. The IT staff member will manage a team of computer science student volunteers and maintaining their schedule. TC will make sure that the help desk gives priority to problems depending on the number of users and the nature of the problem. Help desk service will be assessed through surveys and

a problem tracking system (Fraizer, 2012). A help desk software will be installed to track requests for support and responses (NCES, 2002).

8. PROFESSIONAL DEVELOPMENT

Providing staff with training on the application of technology to educational theory is essential in the success of the plan. It is necessary to provide high quality, customized and continued professional development to administrators and teachers that demonstrate how to best weave technology into curriculum. Administrators and teachers are key members of the integration team because they control which technologies are chosen and how they are used in the courses. It is important that these professionals are given adequate pre-service preparation, continuing and up-to-date training, and access to learning communities and other tools for backing and knowledge. Teachers should not only understand how to use technology they should also understand how it improves education (Noeth &Volkov, 2004).

Teacher training will be placed in two categories; basic use of Learning Management Systems and applied educational theory using technology. Learning Management System training will focus mainly on record keeping such as, attendance or grades while the other classification of training will involve pedagogical theory as part of the class. The purpose for this is to help teachers and staff members understand that technology does not stand alongside teaching methods, technology merges with pedagogy. The technology coordinator will provide training to staff and in turn teachers will provide lessons with examples showing how they have used technology in their rooms. Classes will be offered after school and on in-service

days. Professional develop hours will be awarded upon completion of the class. A survey will be provided to teachers in order to determine their needs. Subject matter of the classes will be chosen based on the survey results (Noeth & Volkov, 2004).

9. PROGRAM EVALUATION

Proper evaluation of a technology plan is paramount because justification of funding these programs relies on demonstrating the effective use of equipment and applications in education (Noeth &Volkov, 2004). Trustworthy data will assist and direct the course of developing thorough practices. The complex environment of education makes this a challenging task (Noeth &Volkov, 2004). The ACT policy report authored by Noeth and Volkov list the following questions that should be addressed in a well prepared program evaluation;

- How and when will evaluation of technology's impact on teaching, learning, and achievement be done?
- Who will be responsible for collecting ongoing data to assess technology's effectiveness? How will accountability for implementation be assessed?
- How will the level of technological proficiency of students and teachers be assessed? How will technology be used to evaluate teaching and learning?
- What is the key indicator of success for each component of the technology plan?
- How will the effectiveness of disbursement decisions in light of priorities be analyzed? How will implementation decisions to accommodate for changes as a result of new information and technologies be analyzed?

Ongoing review of the effectiveness of technology in the three new schools is essential to success. Feedback provided by students, teachers, staff members, administration and parents will be solicited on a quarterly basis through the use of surveys, focus groups and review of usage data provided by the applications themselves. The surveys will determine the confidence level and satisfaction of technology users. Focus groups will attend to but not limit themselves to specific topics such as Learning Management Systems or the use of a particular application. Administration will track the use of online learning communities by teachers. In addition, administration will retrieve data from the network to determine the speed, usage levels and efficiency of the network. Data analytics will be employed to determine the value of applications by reviewing test scores.

Administrators and teachers should also be evaluated on their ability effectively use technology in the classroom. This accountability divides the responsibility of effective teaching to all professional stakeholders (Noeth &Volkov, 2004).

Teachers should be assessed on their ability have technology improve their individual productivity. Also, how they use and design technology to address the needs of their curriculum should be measured. Additionally a teachers success rate in assessment of students should be evaluated (Noeth & Volkov, 2004).

Evaluation of the program can take a variety of forms including but not limited to

- performance assessments
- standardized tests
- observations

- writing samples
- surveys
- focus groups with students and parents

It is imperative that the evaluation of the program be both summative and formative to insure that the process of applying technology be include in the measurement of success and not just the final outcomes.

10. E-RATE PROGRAM

Constant diligence and research is required of the technology team. The ever evolving nature of educational technology is evident in the E-rate program. A revision of this program is causing districts to review their technology infrastructure. The E-rate program, also referred to as The Schools and Libraries program, reduces the cost of telecommunications and information services for schools and libraries in the United States. In 1996 Congress authorized this program that is managed by the Federal Communications Commission. E-rate provides telecommunications, Internet access, and internal connections at a reduced rate to eligible schools and libraries (FCC, 2014). The E-rate Modernization Order, recently implemented by the Federal Communications Commission, will require districts to re-evaluate the application process for these programs (Fletcher, 2014).

In September state E-rate coordinators will meet for training provided by the Universal Service Administrative Company and the Federal Communications Commission. Information gained here at these meetings will then be distributed to districts.

Technology leaders will need to continue their research to find a network that is designed to handle bottle necks in different parts of the building and other schools in the district. Also, time of day requirements like traffic that exists during the start of school should also be considered when choosing a network for the E-rate funding application. The new E-rate allocates more funds to Wi-Fi and less for voice then the previous version. Therefore in order to prepare for this process the three new schools will:

- Conduct meetings with all stakeholders to discuss the new demands curriculum will have on the network. Members should cover curriculum items such as gaming, simulations or other high demand products on the network.
- Create a clear budget that makes the most of E-rate funding. There are new rules for financial aspects of the program.
- Plan for the future. Create a flexible strategy that can be modified as needs change.
- Communicate technological needs to the Federal Communications Commission allowing the agency to create a program that helps schools at the highest level.

Thorough completion of the E-rate program is essential for the success of a technology program because it provides leaders with a framework from which to design their program and receive adequate funding for its implementation.

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