Administration and Supervision of a Planned Growth Program – Jersey City Public Schools

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Mission of the District's Technology Program

As of November 2016, Jersey City Public Schools consisted of 3,158 instructional staff members to support the already existing 25 elementary schools, 4 middle schools, 8 high schools, 1 regional day school, 1 adult education school, and 40 childcare sites (Jersey City Public Schools, Nov. 2016). This school district served 27, 672 students during this time. These students together created our very diverse student population which consists of 7, 921 African-American, 4, 918 Asian-American, 3,516 Caucasian, 447 Multiracial, 64 Native American, and 187 Pacific Islander students (Jersey City Public Schools, Nov. 2016). This student population is comprised of more male students than female students, 14, 255 and 13, 417, respectively (Jersey City Public Schools, Nov. 2016). Next year Jersey City Public Schools is anticipating an increase in student population and will be building three new schools to accommodate the several new housing developments and apartment complexes scheduled to open.

Therefore, the mission of Jersey City Public Schools will continue to provide the best education for all students including this new influx of students. The mission includes providing not just students but the staff a technology rich supportive learning environment which "infuses the most appropriate technologies in the most natural manner into highly effective instructional and administrative applications" (Jersey City Public Schools, 2016). In addition, Jersey City Public Schools will provide equal access to all learners while using technology routinely in their studies to allow the development of 21st century skills such as thinking critically and communicating efficiently while addressing common core standards (Jersey City Public Schools, 2016).

The Jersey City Public Schools technology plan currently consists of five goals. However due to the growth population recently experienced in Jersey City due to the building of several new housing developments and apartment complexes Jersey City Public Schools are also expanding. With the projected plan to open two new elementary schools and one new middle school these five goals may have to be revised. The first goal addresses learning specifically preparing learners to continue learning beyond the classroom as they participate in our global society (Jersey City Public Schools, 2016). The second goal is to continuously assess students in order to continuously improve (Jersey City Public Schools, 2016). Goal number three addresses ensuring teachers will participate in professional development in order to continue to use technology in innovating ways to engage students (Jersey City Public Schools, 2016). The fourth goal will implement an infrastructure capable of supporting all users (Jersey City Public Schools, 2016). The last goal is to continuously change to improve technology usage, improve student performance, and maintain efficiency (Jersey City Public Schools, 2016). Since these five district goals are encompassing for an expanding district as we will have next year, they will be continued to be implemented.

School Laws

The New Jersey Department of Education in their Standards and Assessment code defines technological literacy as, "students meeting NJSLS (New Jersey Student Learning Standards) 8.1 Educational Technology, obtained through the integration of effective technology practices, strategies, and tools throughout all curricular areas (P. 13, 2016)." The Jersey City School District is addressing the legal requirements for the development of technology tools to facilitate the education of the increasing student population. The district intends to use the NJSLS as a guide to reach the five goals listed in the 2016 technology plan.

The first goal of preparing learners to move beyond the classroom and participate in the global economy as technologically ready learners is supported by the New Jersey Core Curriculum Content Standards 8.1 and 8.2. For the two new elementary schools and the one additional middle school, the Jersey City Public Schools will seek to meet the benchmark indicators are listed in the technology standards for kindergarten through eighth grade. Three of the key benchmarks listed that will ensure the production of technology ready learners and users for the future that the Jersey City Schools will focus on are, NJCCCS 8.1.5.A.1, NJCCCS 8.1.8.C.1, and NJCCCS 8.1.5.D.4 (NJ Department of Education, 2016). These three key benchmarks are selected for their use in preparing the younger students in the district for their lives and for ensuring they will be productive digital citizens.

The second district goal of assessing students to facilitate continuous improvement in their educational environments as well as in their ability to use technology is mandated under the NJSLS standard 6A:8-3.1 (c) curriculum and instruction. This standard specifically states that all districts and boards of education are responsible for reviewing the curriculum of all schools to work towards the continuous improvement of the curriculum and instruction specifically needed due to the growth of technology (P. 18, 2016).

The third district goal of providing teacher professional development to include technology in innovative, engaging ways for all the students in the district is mandated under the New Jersey Administrative Code 6A:9C. The administrative code states that all schools must actively aide and support teachers, administrators, and educational services staff in the achievement of professional development goals (P. 18, 2016). The encouragement of continuous growth will be supported by teacher created and school leader supported professional growth plans for all professionals working within the Jersey City School District.

The fourth goal of providing a sufficient infrastructure where all students and staff will be able to gain access to their needed educational resources both in and after school. The school district has deemed that in order to meet the educational needs of our community that the school needs to expand the availability of internet and broadband access to our students before and after school hours as well as during the school day. The Jersey City School District Technology Plan intends to continue to use E-Rate funding to provide advanced access to all users (P.37, 2016). The advanced availability of the internet and educational resources are deemed necessary to support the mandates of the State Board of Education's Technology 8.1 and 8.2 Core Curriculum Content Standards.

The Jersey City Schools addresses our fifth district goal under the mandates found in the New Jersey Student Learning Standards. The fifth district goal in the technology plan addresses continual growth involving student and district productivity. The district intends to improve technology usage, improve student performance, and maintain efficiency through a process of continuous improvement. The district is responsible for conducting an annual review and evaluation (N.J.A.C. 6A:8-4.4) of the entire school district, and through this review, we will analyze where there can be improvement and adoption of new, better technological tools to enhance student and district outcomes.

Needs Assessment and Goals

A needs assessment shall be conducted in the areas of infrastructure, personnel, and processes (Azimi & Rahmani, 2013; Lal et al., 2013; Broadley, 2007; Nichols & Anderson, 2005; Madar & Willis, 2014). IT infrastructure needs assessment will identify any issues pertaining to electricity, internet access, IT support staff, hardware, software, and networking. A survey will be administered to assess technology needs in the areas of instruction, curriculum

development, and assessment (Azimi & Rahmani, 2013; Lal et al., 2013; Broadley, 2007; Nichols & Anderson, 2005; Madar & Willis, 2014). A district wide technology inventory will also be conducted and analyzed to identify available resources for the new schools.

The needs assessment strategy shall align with the technology goals outlined in the 2016-2019 Jersey City Public Schools District Technology Plan. The action plan goals and objectives address five areas; learning, assessment, teaching, infrastructure, and productivity (Jersey City Public Schools, 2016). The learning goal emphasizes engagement and empowerment of students to prepare them for full participation in a globalized technology-rich community. Recommended actions to accomplish this goal include adoption of 21st century standards and enhancing STEM learning through the use of technology.

The assessment goal prioritizes the use of technology to measure student academic progress and systematic data collection and analysis to improve education practices. Recommended actions to achieve this goal include training educators to use technology-based assessments and maintaining rigorous information security practices. The document also recommends exploration of "gaming technology, simulations, collaboration environments, and virtual worlds" as a means to motivate and engage learners (Jersey City Public Schools, 2016).

The teaching goal emphasizes the use of technology by teachers to create more effective learning experiences for students. Actions to support this goal include encouraging the participation of educators in communities of practice, training educators to engage in technology-based instruction and learning, and developing educators proficient in online instruction.

The district's infrastructure goal statement prioritizes student and educator access to infrastructure for learning. Accompanying actions include maintaining adequate internet access,

equipping teachers and students with internet access devices, and utilizing open educational resources to encourage innovative technology-based teaching practices.

The productivity goal statement emphasizes improving efficiency and learning outcomes with the use of technology. Actions to accomplish this goal include improving the management, analysis, and sharing of data to enhance decision making throughout the district.

Resources for Implementation

The anticipated budget for the 2016-2017 school year was $672,600,458 (State of New Jersey Department of Education, 2016). The anticipated available amount for technology for this school year was $3,492.366 for undistributed expenditures admin info technology and $98, 433 for nonpublic technology initiative (State of New Jersey Department of Education, 2016). The budget for the 2017-2018 school year will slightly increase with the increased tax revenue from the new housing developments and apartment complexes. However, this slight increase in revenue will not be enough to cover the cost of providing technology to all the new students in the new schools. To fill this shortfall of finances, jersey school public school district can apply for donations and grants from various sources. Some suggested sources to acquire additional funding are donorschoose.org, getedfunding.com, and www.gatesfoundation.org.

Technology Acquisition

Mortara and Ford (2012) outline the following four major steps in the technology acquisition process.

1) Identification of desirable technologies
2) Opportunity assessment, identifying best match, and understanding terms
3) Negotiate terms of acquisition
4) Technology transfer

The authors break down the second stage of the process into three areas; acquisition context, acquisition evaluation, acquisition options (Mortara & Ford, 2012). The acquisition context phase involves understanding and defining the pertinent issues that must be considered and developing a framework for acquisition. Mortara & Ford (2012) offer the following three questions to define the acquisition context.

1) Why does the organization want to acquire the technology?
2) Who is the organization looking to acquire the technology from?
3) How established is the technology and how will this impact acquisition options?

During acquisition evaluation, a determination is made about whether the technology is a good fit. This phase involves analyzing the technology capabilities and the organizations' ability to make good use of the technology. Identification and evaluation of the various options for regulating and managing the acquisition takes place during the acquisition options phase.

Successful technology acquisition requires a clear definition of IT infrastructure and identification of vital staff to facilitate and maintain the technology. IT infrastructure encompasses all the inputs required to support a fully functional IT system. This includes hardware, software, and staff. IT staff will take part in meetings related to planning and implementation of technology. Two groups of IT staff will be required to support technology infrastructure (Lal et al., 2013; Broadley, 2007; Nichols & Anderson, 2005; Madar & Willis, 2014).

- Central systems administrator responsibilities include the following functions.
    - Installing and maintaining the server
    - Managing users, course updates, and system updates
    - Troubleshooting system issues and monitoring system performance

    - Providing technical advice, guidance, and status reports to management
- School IT staff responsibilities include the following functions.
    - Helping students and teachers to use the system
    - Basic troubleshooting

Central systems administrators will be responsible for user management by assigning users to one of four roles; administrator, group facilitator (teacher), content editor, and end user (student) (Lal et al., 2013; Broadley, 2007; Nichols & Anderson, 2005; Madar & Willis, 2014).

Among the essential technology requirements for the new buildings are a local area network, internet access, media center, and laptop carts. All new buildings will be equipped with a local area network (LAN), which will connect computers and peripherals to a server to enable file sharing and collaboration. Internet connectivity throughout the buildings will be provided using wireless routers and ethernet ports and cables. The media centers in each building will include desktops, printers, smartboards, and copy machines.

Procedures to Coordinate and Control the System

The District Technology Department in the Jersey City Public School district is responsible for maintaining and servicing the technological infrastructure for the entire district. The technology department will set up, service the newly built schools, and assume their technological operation as they come online and available for student use. The technology department comprises of one Technology Coordinator, Technicians stationed throughout the school district, a centralized help-desk with three employees to handle phone calls and troubleshooting. The Technology Department is responsible for technological staff professional development, which falls under the purview of the help-desk, which uses collected data from the phone calls to determine which areas of professional development would be most useful for the

people employed throughout the district (Jersey City Public Schools, 2016). The District Technology Department also is responsible for maintaining the student information system, the parent portal and all district held electronic curricular materials. The District Technology Department has one central focus; the department has the responsibility of ensuring that the district's technology resources are being used to their fullest effect by all parties who utilize the technology infrastructure teachers, administrators, students and support professionals (Frazier, 2012).

With the basics of the department listed above the District Technology Department has many responsibilities. The technology department first and foremost keeps open and accessible the computer networks in the schools. The networks include a Wide Area Network (WAN), multiple Local Area Networks (LAN), access to the internet and the required secured files and backups that ensure continued operation in case of emergency. Included in this initiative is the support of users in troubleshooting connectivity issues, software problems, and hardware issues. When a school or individual needs assistance, the individual contacts the help desk who attempts to troubleshoot the problem. If a solution cannot be affected remotely then a technician is dispatched to the location, the helpdesk further triages all cases and determines the order in which service should attend to the issue in order to facilitate that the greatest need gets the help the fastest.

All larger issues including district-wide training are routed through the District Technology Coordinator. The DTC uses his knowledge of the community, the schools, the staff and the needs directed by the state to develop technology staff development and instruction. The Technology Coordinator will often attempt to collaborate with schools or with departments within the schools to find areas of need and areas of interest to make the professional

development as meaningful as possible. The technology Coordinator himself can take on the responsibility for the modeling and teaching the effective use of technology in the learning environment through professional development instruction (Frazier, 2012).

The Jersey City Public Schools are Children's Internet Protection Act (CIPA) compliant. Through the district technology coordinator's office, the school district provides web filtering and firewall protection. The internet filters and firewalls allow system administrators to block websites and communication channels through which the students and staff could otherwise be exposed to a potential criminal element. Beyond the firewall and the filtering software, all school provided devices are required to pass through a web-Proxy server, which ensures that anyone using a school-supplied device, is adhering to the district's acceptable use policy.

The addition of three new schools to the district will increase the size and budget of the District Technology Department. However, some of the cost of the new devices and services that the district is planning to offer may be partially offset by E-Rate funding. Those services include the aforementioned access to broadband internet outside of the school before and after school hours, additional devices with which students can access their educational materials and a potential program for a school provided bring home device for students who have a documented need. The ongoing process of providing devices and internet access after school will continue as more devices are wirelessly capable, and the internet connectivity resources become available and affordable for the district (Jersey City Public Schools, 2016).

Evaluation Tools

The goals and objectives of the Jersey City Public Schools focus on five areas that include learning, assessment, teaching, infrastructure, and productivity (2016). In order to be able to assess the success of the technology program, evaluation tools must be developed and

implemented. To support the use of evaluation, Frazier (2012) suggests that evaluating technology is requires a systematic approach. Tools for assessment must be chosen based on the goals of the district's technology plan and can make use of "surveys, interviews, observations, focus groups, checklists, paper-and-pencil or online instruments, and analysis of additional data such as standardized test scores or scores from state or local assessments" (Frazier, 2012, p. 151).

To address the district's learning goal, evaluations will focus on assessing whether standards are truly reflecting 21st century expertise, the adoption of learning resources, and the enhancement of STEM (science, technology, engineering, mathematics). Teacher lesson plans will be reviewed and discussed as well as professional learning evaluations. Additionally, observations will be conducted in classrooms.

Regarding assessment, the district wishes to use technology to be able to conduct exams and evaluations. Assessment tools must examine which technology-based assessments are being used and how. This information can be collected through surveys given to all faculty and staff. An evaluation of how well PARCC assessments are conducted in addition to PARCC data itself will also provide a wealth of information.

The teaching goal focuses on support for educators in the use of technology in their teaching. The effectiveness of professional development, what is offered for teachers, and knowing what teachers want and need to support their ability to use technology effectively and innovatively will be assessed through teacher and staff satisfaction surveys and meetings with faculty.

Infrastructure effectiveness will be assessed through multiple means. Data will be collected from technology incident reports that outline issues with infrastructure, monitoring

internet users, and examining numbers of faculty, staff, and students who need access to devices. The technology coordinator manages when infrastructure needs updating and will report this to stakeholders. Additionally, the technology coordinator regularly deals with purchase orders, consultants, software recommendation reports, the business office, technology staff, and school administrators all of which will provide information and data about the status of each school's infrastructure in the district.

To assess productivity, stakeholders will come together to meet and discuss how to make sure the district is leveraging technology to improve learning outcomes, while at the same time being efficient with staff, time, and money (Jersey City Public Schools, 2016). Including the business office to discuss and assess budgets for future planning will play an instrumental role in understanding where the district is currently and where it would like to go with its technology. A committee comprised of teachers, staff, and the associate superintendent of curriculum and instruction will provide insight into what ideas may help save time, money, and make the most effective use of each school's staff.

Making use of in-district resources to collect data and provide feedback on the five different technology goals will be beneficial in seeing that the district meets or exceeds its goals. Jersey City Public Schools (2016) currently uses and will continue to use:

- Bi-annual student/staff surveys
- District and school-wide PLC (Professional Learning Community) monitoring
- An annual technology plan committee review of goals and objectives
- District-level bi-annual revision of the technology plan process
- Bi-annual district technology implementation status reports
- Online assessments of technology skills for students

Additionally, information obtained from the many different data-collection tools will be used to drive decision-making.

The district also plans to have an external evaluation process by 2019 (Jersey City Public Schools, 2016). A viable option for an external evaluation could be becoming a member of the Tri-State Consortium in which teams from other schools visit to analyze a district using eight indicators measuring how well a district utilizes student performance data to drive its planning (Tri-State Consortium, n.d.). This could allow for different academic disciplines to be evaluated through the lens of technology.

Data-Driven Decision Making

Data collected from assessments created by the technology coordinator or existing sources must be examined that will ultimately inform decisions about the technology program at Jersey City Public Schools (Frazier, 2012). The process of evaluation will need to be conducted regularly due to ever-changing technology. Results of the data collection process will be shared with key stakeholders such as school administrators, board of education, faculty and staff, parents and community members.

It is wise to also consider outside sources that can assist with data-collection, as well as items to compare the district's technology outlook and future. A useful tool that can assess the overall success of the Jersey City Public Schools District Technology Plan is the Clarity survey by BrightBytes. This tool, that would need to be purchased, collects survey data about student foundational skills compared to the ISTE Standards, provides a 21st Century Skills curriculum report, and a general curriculum report which assesses areas of foundational skills, online skills, multimedia skills, beliefs, digital citizenship skills, and confidence with technology (BrightBytes, 2017). The Clarity survey also provides the same information about teacher skills,

the classroom, access, skills, the learning environment, and priorities (BrightBytes, 2017). Information provided by the survey ranks each measurement as beginning, emerging, proficient, advanced, or exemplary (BrightBytes, 2017). The Clarity survey can be conducted at both the beginning and end of each school year, as well as through multiple years to show growth. The survey also provides suggestions on how to achieve higher scores by implementing specific classroom, school, or district-level initiatives.

In addition to a tool developed by a third party, the technology coordinator plans to meet with other nearby district technology leaders to compare how the Jersey City Public School District is doing relative to neighboring districts. At a meeting of technology coordinators, ideas, best practices, data, and suggestions will be shared. Collaboration is useful in addressing goals beyond that of just the school district alone.

There are plenty more tools and information available that can help a school district assess where they are in comparison to state and national standards. The Jersey City Public School District will make use of the ISTE Standards, as well as refer to the annual NMC/CoSN Horizon Report for K-12 schools, in addition to the already in use New Jersey Student Learning Standards for Technology and the New Jersey Core Curriculum Content Standards in Technology.

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