Administration and Supervision of a Planned Growth Program for Hillsborough Public Schools

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Introduction

The Hillsborough Township Public School District administration is committed to service and maintaining the highest quality of educational programs for every student who enters and walks the education hallways. The district administration is aware of new requests for building permits to construct additional residential homes and apartment complexes. With the anticipated influx of new families with school-aged children, the district expects a need for two other elementary schools (grades PK to 4) and one middle school (grades 7 to 8) to accommodate the anticipated increase in students entering the school system. The newly renovated intermediate and high school have sufficient space to accommodate the additional anticipated student population. The district is holding firm and committed to the 1:1 student device technology program in the upcoming new school buildings.

Background

Hillsborough Township Public School District is of 54 square miles located in suburban Somerset County in central New Jersey. According to the New Jersey Department of Education [NJDE], (n.d.), there were 7,315 students enrolled in the 2016-2107 school year. The district has six elementary schools divided into two (grades PK to 4) and four (grades K to 4); one intermediate school (grades 5 to 6); one middle school (grades 7 to 8); and one high school (grades 9 to 12) (NJDE, n.d.).

The district staff is comprised of 666 teachers, 36 administrations, and support staff (NJDE, n.d.). The student population by racial and ethnic group consists of 60.2% White; 25.4 % Asian; 8.7% Hispanic; 4.9% Black or African American; 0.4% Native Hawaiian or Pacific Islander; 0.1% American Indian or Alaska Native; and Two or More Races 0.4% (NJDE, n.d.).

Interestingly, the student group makeup has not changed over the past three school years with females 495 and males 51% (NJDE, n.d.).

Mission

The Hillsborough Township Public School District's mission is in place for guiding and nurturing every student to attain accomplishments into a model citizen in the global world. According to their website "Our district mission statement reflects our educational goals and the values we embrace: The Hillsborough Township Public Schools is committed to providing a superior education for all students so that they will lead us successfully and responsibly into the future" (NJDE, n.d., p. 50). In alignment with the district's vision utilizing technological tools to create and enhance the students' academic activities. District vision statement directly aligns with the mission statement concerning student academic success and future-driven learning. The vision is in place for the entire district. This vision will be set in motion for all new three schools in the district. The vision is: "We believe that technology is a tool for enhancing, informing, and transforming learning that builds equity and promotes independence and collaboration to create 21st-century learners who are responsible digital citizens. All students should have equal, ubiquitous access to technology resources as they would to any traditional non-technology resource. It is the vision of Hillsborough Township Public Schools that students be engaged in a stimulating academic environment that supports rigorous student-centered, inquiry-based learning" (Hillsborough Township Public Schools, n.d., p. 4).

New Jersey State Laws

The Hillsborough Township Public Schools complies to the laws which govern education in the State of New Jersey along with the local Board of Education. The district's AUP

(Acceptable Use Policy) updated in August of 2018 for students and parents/guardians, and the staff AUP updated 2013. Rules and regulations are accessible on the district website. The district forms include media consent and PC Device Usage Policy forms. In compliance with New Jersey School Law, the district implements standards guiding student learning toward 21st-century skill set and global initiatives which drives the district's mission, vision and goals. The New Jersey Student Learning Standards are governed by the New Jersey Administrative Code which include nine academic content areas including technology which the standards benchmark student achievement guided by the 21st-century learning initiatives (6A N.J.A.C. 8: Standards and Assessments, 2016).

The District Board of Education shall ensure that standards, assessments, curriculum, instruction, and professional development aligned in a local support system that enables all students to achieve 21st-century outcomes through the establishment of student-centered learning environments that provide opportunities for academically diverse students. Along these lines, the district follows the guidelines and initiatives within the NJCCS (New Jersey Core Content Standards) and ISTE (International Society for Technology in Education) standards. The district's technology curriculum components aligned with the NJCCS Educational Technology 8.1and 8.2 Technology Education, Engineering, Design, and Computational Thinking (New Jersey Student Learning Standards: Technology, 2017).

The Education Technology (8.1) standard interconnects with the ISTE standards which all students become an (a) empowered learner; (b) digital citizen; (c) knowledge constructor; (d) innovative designer; (e) computational thinker; (f) creative communicator; and (g) global collaborator (ISTE Standards for students, 2018). The Technology Education, Engineering,

Design, and Computational Thinking (8.2) aligns with the K12 Creative Science Creative Commons standards framework with the emphasis on all students in grades K through 12 engaged and develop a foundation in the concepts, ideas, and practices of computer science in the realms of the 21st-century learner (Framework Statements by Grade Band, (n.d.).

Also, the district technology plan for all grade levels will move the district forward in a technological-based education system and achieve the mission, vision, and goals. There will be a need for additional equipment with the increase on student population necessary to prepare for the PARCC (Partnership for Assessment of Readiness for College and Careers) or any other standardized test as a graduation requirement (6A N.J.A.C. 8: Standards and Assessments, 2016).

Goals

To meet the technological needs of all students in the district and to provide adequate environments for the digital citizenship of the 21st-Century, the following district-wide goals are: (Hillsborough Township Public Schools, n.d., p.12).

- Goal 1. In alignment with the state curriculum requirements, district educators will utilize technological resources to promote engaged learning environments, collaboration, communication, building community and globalization during the learning process to enhance skills essential to a modern day society.
- Goal 2. In accordance with the national and state policies, the district will continue to attribute to developing 21st-Century Global Citizenship among students. Special attention paid to cybersecurity and safe online behaviors.
- Goal 3.The district will promote and support professional development opportunities for faculty and staff.

- Goal 4. The district will continue to maintain and upgrade technological infrastructure to support the safe and efficient use of network resources, in-class equipment (hardware) and software and administrative systems.

Technology Implementation and Strategies

With the surplus of the new students, teachers, and staff joining the district, the technology growth plan recognizes two major focus areas: continuous incorporating of technological resources into existing schools and bringing the new schools to the district-wide technological level. Both focus areas are of equal importance and need for the respective allocation of resources since all students in the district, regardless of the schools they attend, are to be provided with equal technologically-enhanced opportunities. Special consideration is given to allocating technological resources to the three new schools in the district in a more assertive manner. At the same time, the existing schools will continue receiving appropriate levels of support and growth in all areas of their technological landscape.

The technological landscape of the district incorporates several focus areas outlined below.

- the educational technology used in teaching and learning;
- the supportive technology used in modern day communication and connection, such as network infrastructure and applications;
- the technological applications needed for administrative computing and organizational operation;

- professional technical support required for administering, configuring and maintaining the above-listed systems;
- planning and budgeting for all the above.

Each of the mentioned focus areas is reviewed in detail in the context of the existing schools and the three new schools in the district. The administration and supervision of the proposed growth plan are approached through the lens of either expanding the capacity of the existing categories or establishing new initiatives in the district.

In recognizing the rapid growth of technological changes, the district assumes the responsibility to adapt and modify the established goals based on the needs of the community it serves. The innovative educational technology trends will be continually evaluated and proposed as needed. The current document is considered work in progress and may be modified based on the needs of student, faculty, staff, parents or administration.

In accordance with the established goals, the proposed plan focuses on all aspects of technology utilization and integration within the district. To accomplish the benchmarks of Goal 1, which focuses on utilizing technological resources for promoting enriched learning environments for collaboration, communication and building of the community, the tools and strategies will be implemented in the following areas: synchronous and asynchronous learning; creating, collaborating and posting digital content; effective use of productivity tools; developing practical technological skills, specific to the grade level, promoting globalization of curriculum. Some examples of the implementation activities include, but are not limited to creating global connections, participating in virtual field trips, incorporating e-learning techniques, producing

and publishing digital content, utilizing online and offline productivity tools, such as Google App or Office suite, and redesigning the learning space to promote communication and collaboration (Hillsborough Township Public Schools, n.d., pp.12-13).

With the continued orientation on technology-driven teaching and learning, the Goal 2 is focused on the developing of the 21st-Century Global Citizenship. It consists of promoting educational opportunities on understanding and practicing Digital Citizenship, enhancing communications and establishing a dialog within the community and parental involvement, and raising awareness in all facets of cybersecurity and safe online behavior. Some examples of the implementation activities include but are not limited to incorporating New Jersey Learning Standards 8.1 Strand D on Digital Citizenship into individual content areas (New Jersey Student Learning Standards: Technology, 2017), promoting student educational activities the cyber hygiene and safe online behaviors, involving parents and the community into outreach cybersecurity awareness programs. To ensure that all district employees are skilled in the area of cybersecurity, faculty and staff are provided with professional development opportunities and training on responsible global citizenship, cyberbullying and online protection (Hillsborough Township Public Schools, n.d., p.14).

Availability and variety of professional development opportunities continue to be one of the district goals, listed as Goal 3. Its focus is to ensure that technology-driven training includes innovative approaches to teaching and learning and promotes the implementation, integration, and efficient use of technological resources by district employees. To achieve the goal, the following strategies will be implemented: (a) establish a technology coach position dedicated to

the three new schools; (b) offer targeted summer training to the new hires and ample training opportunities to all district employees; (c) support the feedback and survey opportunities to establish faculty and staff technological needs; (d) assess and evaluate the current use of technological resources and adjust offerings as necessary; (e) establish the knowledge base of best practice approaches for technological integration; and (f) disseminate among faculty, especially the new hires (Hillsborough Township Public Schools, n.d., pp.15-16).

To support the implementation strategies listed under the Goals 1, 2 and 3, it is necessary to establish and maintain a robust technological infrastructure consisting of hardware and software for classrooms and offices, timely repair procedures, reliable and secure Internet access throughout the district. These are the primary focus areas of the Goal 4. They include one-to-one programs for all constituencies involved in teaching and learning, support administrative and managerial functions, and ensure adequate Internet connectivity processes. Special attention will be paid to creating necessary technological infrastructure for the three new schools in the district. More specifically, the following implementation activities will be included, but not limited to: obtaining equipment and software necessary to conduct computer-based state testing; maintaining and evaluating the life-cycle of the media resources, providing all new students in grades 3-4 and in middle school with Chromebook tablets under one-to-one initiative (extra Chromebook tablets need to be purchased for the new students in the district); evaluating the best software and hardware needs for existing and incoming K-2 students; monitoring the existing intercom equipment and installing the new intercom systems at the three new schools; adding surveillance cameras and systems at the three new schools; implementing reliable and robust Internet connectivity channels throughout the district, taking into account the increase of the

network traffic from the surplus of users from three schools (Hillsborough Township Public Schools, n.d., p.16-18).

Program Assessment

Assessments allow the teacher and student to monitor progress towards achieving learning objectives. In order to assess and measure the success of a technological/academic program, teachers and instructional leaders must create various approaches to assess if the instructional goal and learning objective has been met. Formative and summative assessment are two methods to assess a program.

Formative assessments are a combination of formal and informal assessment procedures conducted by teachers during instruction. An assessment is only formative if it used to modify the teaching and learning process to improve student achievement. Effective formal assessments include descriptive feedback to the student that allows them to improve the quality of their work. Good descriptive feedback focuses on the goal/intent of the lesson, the students' relation to the goal/intent, and what actions are needed to close the gap between the two.

Summative assessments evaluate student learning, knowledge, proficiency, or success at the end of a course, unit, marking period, semester, etc. This is considered post learning and is not an accurate reflection is the student has learned the content given. Summative assessments are formally graded and often heavily weighted. When the focus is on summative assessments, students do not learn. The best way for students to learn is through formative assessments that include checks for understanding/checkpoints along the learning process.

Assessments must be measurable in order to determine if the student has learned what we want them to learn or met the expectation. Effective instructional delivery will ensure that students learn the content. They inform instructional designers and teachers if the students met the objective and if changes need to be made to the instructional design in order to have true alignment between the course objective, instructional strategies, and assessments (Brown & Green, 2016, p. 159).

Another approach that can be used with formative and summative assessments is through the combination of a technology evaluation tool or rubric. The evaluation tool below would be used to assess the overall technology program and how students engage with the technology. It begins by focusing on the integration of technology into the content areas and the variety of technology used in the lesson. The evaluation tool then looks at the level of technology integration and variety ranging from basic to distinguished level.

Table 1
The Technology Integration Matrix

Technology	Not Evident	Basic	Emerging	Proficient	Distinguished
Integration of Technology into the lesson(s)	No evidence of technology integration	- Evidence of technology considered as a tool for drill and practice and computer based training. - Technology is used to deliver information to students. - Students use technology to complete assigned activities that are generally unrelated to real-world problems. - Students receive directions, guidance, and feedback from technology, rather than using technology tools to set goals, plan activities, monitor progress, or self-evaluate.	- Students begin to utilize technology tools to create products, for example using a word processor to create a report. -Students begin to utilize constructive tools such as graphic organizers to build upon prior knowledge and construct meaning. -Students have opportunities to apply technology	- Students have opportunities to select and modify technology tools to assist them in the construction of understanding. - Students have opportunities to select and modify technology tools to solve problems based on real-world issues. - Students have opportunities to select and modify the use of technology tools to	- Throughout the day and across content areas, students utilize technology tools to facilitate collaborative learning. - Throughout the school day, students are empowered to select appropriate technology tools and actively apply them to the tasks at hand. - Students self-select appropriate technology tools to complete authentic tasks across disciplines. - Students use

			tools to some content-specific activities that are based on real-world problems.	facilitate goal-setting, planning, monitoring, and evaluating specific activities.	technology tools to set goals, plan activities, monitor progress, and evaluate results throughout the curriculum.
Variety of Technology Used in the Lesson(s)	No technology used during the lesson, or technology is outdated.	One instance of technology usage or technology is utilized by the teacher only.	At least one instance of technology usage by the teacher and one or more students	More than one type of technology or application is integrated into the lesson, at least one of which is used by all students, at least once during the day.	Multiple types of technology or applications are integrated into lessons throughout the day, and students use two or more of these on a regular basis.

Note: Florida Center for Instructional Technology (FCIT). (n.d.). The Technology Integration Matrix.

The Florida Center for Instructional Technology uses a technology integration matrix which is comprised of five levels of technology integration that can also be used to assess the technology program at the Hillsborough Township Public School district (FCIT, n.d.). The matrix begins by looking at five characteristics of the learning environment which are, active, collaborative, constructive, authentic, and goal-directed learning. It then focuses on the five

levels of technology integration in the specific learning environment. The five levels of technology integration are described below:

1. Entry Level - Teacher starts to use technology to deliver the content
2. Adoption Level - Teacher models the traditional/procedural way to use technology
3. Adaptation Level - Teacher facilitates students in exploring and using technology independently
4. Infusion Level - Teacher provides the learning content and students make the decision of what technology to be used to achieve the outcome
5. Transformation Level - Teacher encourages the innovative use of technology. Technology is used to promote higher-order thinking tasks that cannot be achieved without the use of technology

Data-Driven Decision-Making

Formative evaluation of technology programs will include assessment of whether or not equipment was received on time, if the expected number of teachers received professional development, what skills teachers learned from professional development, or if the equipment is being used in the classroom as planned (U.S. Department of Education, 1998). Student growth is dependent upon systems being in place and ready for use and that teachers are adept at using the technology to facilitate student acquisition and demonstration of 21st-Century skills. Summative evaluations will assess student outcomes set by established goals. The summative evaluation may include expectations for improvement of teacher technology skills, as well as, expectations of student performance.

The continuous data-driven decision-making process will look at pre/post assessment data of both district and state level assessments. MAP (Measurement of Academic Progress), STAR Renaissance for Reading and Math, district benchmarks, and PARCC assessments are all taken on a technological platform. To gain an accurate scope of the success of the program, targeted student populations will take formative assessments designed by the teachers using PARCC samples at the beginning of the year. Throughout the year, teachers will provide students with descriptive feedback through formative assessments such as surveys, blogs, chats, boards, short quizzes, exit slips, simulations, games, virtual lab, daily journals, Kahoot, polls, etc. The feedback given to students is to allow them the opportunity to improve the quality of their work. Throughout the year all assessments will be aligned and with or scored using the NJ PARCC Scoring rubrics. At the beginning of the spring prior to students taking the actual PARCC assessment, teachers will administer a teacher created summative assessment using PARCC samples based on Individual Student Reports (ISR) and the PARCC Evidence Statement Analysis Reports which identified the individual student's specific areas in need of growth according to each specific standard assessed in both content areas. Overall, the expectation is to show significant growth when comparing the pre/posttest or annual assessment data, but a true symbol of success is to see the significant increase in the PARCC scores.

Conclusion

Instruction paired with technology is the path for all students to succeed in life. "Creating a 21st-Century education system is about making sure that all students are prepared to succeed in a competitive world.--It's about maximizing the impact of technology to develop proficiency in 21st-Century skills, support innovative teaching and learning, and create robust

education support systems." (ISTE: Maximizing the Impact). Creating and supporting a technology plan that provides for district expansion and increasing sustainability of related technologies, are the foundation for technology-rich learning spaces for all students. This aligns with the district mission in that technology tools transform educational experiences for students and provides opportunities for participation in a global society. The district will continue to evaluate and implement tools that support increased levels of achievement and personal growth for all students.

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