Creating a Meaningful Learning Environment with Technology

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Using technology in the classroom is a powerful vehicle for promoting learning and providing valuable educational opportunities for students. In addition, technology learning can enhance children’s cognitive development and teach them to become designers and creators of their own computerized projects (Bers, 2012, p.7). School districts establish a district technology plan for incorporating technology in their instructional process. This document serves as a guiding principle for administrators and educators towards aligning appropriate technology enriched activities with district curriculum. As districts develop their technology plans, an effective approach in the development is to use the Positive Technological Development Framework. The framework places an emphasis on teaching digital literacy for the 21st century and takes the overall development of the student into consideration.

PTD is comprised of three components: technology activities, applied practice, and individual assets. The assets are divided into six C’s, contribution, connection, caring, character, confidence, and competence, which are viewed as the path towards building a vigorous community. A second set of C’s are aligned to the individual assets and the application of practice as, community building, collaboration, communication, choices of conduct, creativity, and content creation. Bers (2012) describes these as technology-mediated behaviors that positively engage children when using technology in schools. This paper will focus on the technology-mediated behaviors to analyze the Hillsborough School District Technology Plan.

Hillsborough Township Public School District in Hillsborough, NJ established and published 2016-2019 District Technology Plan and expected to be implemented by June 30, 2019. The plan focuses on using technology as a transformational vehicle for enhancing learning. The district states that it created “a viable plan to systematically transform instruction through the development of enhancement of the effective implementation of digital learning” (Hillsborough Township Public Schools, 2016, p.2)

This paper evaluates the Hillsborough Township Public School District Technology plan through the lens of six technological design principles. They include content creation, creativity, choices of conduct, communication, collaboration, and community building (Bers, 2012, p.11-12). The items listed in the plan are analyzed by their ability to correlate, contrast, or extend the six technological design principles.

**Content Creation**

Content creation behavior is described as a possibility to captivate users in computer programming or computer applications that attract them in working with text, video, audio, graphics, and animations (Bers, 2012, p.11). This is a process of constructionism; in which children can develop a sense of competence, talent, and mastery. There are several items in the plan that support creativity and content creation. One of them is introducing students to coding. For example, the benchmark activity 1.5.3 reads, “Explore the feasibility to add coding into the Grades 1-8 curriculum” (Hillsborough Township Public Schools, 2016, p.14). Providing students with an opportunity to develop code levels gives them an ability to create content within open-ended space, such as creating a piece of code using a black palette of the programming environment.

**Creativity**

Creativity behavior is the capability to go beyond standard plans, rules, patterns, relationships, or interpretations and to produce and generate original new ideas and procedures of using innovate new technologies (Bers, 2012, p.12). Creativity can help children have a strong sense of confidence; which makes them believe that they can improve their skills and trusting in their own potential (p.84). Using Bers’ analogy of code in content creation, this activity could be comparable to a digital playground, where students are open to free exploitation (Bers, 2012). The setup of the digital playground also relates to the activity 1.6.1, which states “[r]esearch and explore the redesign of the physical space in classrooms, libraries, and other learning spaces to be more conducive to 21st century learners” (Hillsborough Township Public Schools, 2016, p.14). The ability to create an age-appropriate learning playground is an extension of all six guiding design principles, where students can not only create new content and choose to explore, but also to communicate, build, and collaborate with others, while contributing to the sense of the class community (Bers, 2012). The concepts of creating, building, communicating, and collaborating with others allow users to have strong connecting relationship to create new digital tools to solve general problems.

Some activities listed in the Hillsborough District Technology plan are not as encompassing in nature and focus on developing a specific skill set. For example, the activity 1.5.1 states, “[e]stablish grade level goals on mastering keyboarding, data entry, and basic technology skills into the Grades 3-4 curriculum” (Hillsborough Township Public Schools, 2016, p.13). While it provides the students with ability to develop a particular skill set, it contrasts the ideas of creativity, as how creative can one really get with typing or data entry? Perhaps, it could be further extended into other areas of technological applications, such as collaboration and communication.

**Choices of Conduct**

As children develop, they will go through various stages and experiences if life. At times, the right choice is made and at others, the wrong choice is made. The choices they make in terms of their behavior leads towards the development of their character. The Hillsborough School District Technology Plan correlates with the choices of conduct as stated in their second goal, in which they plan to promote and enforce policies to build 21st Century Global Citizenship (Hillsborough Township Public Schools, 2016, p.13). Twenty First Century Global Citizenship is a combination of the various skills below:

● Critical Thinking/Problem Solving - having inductive/deductive reasoning skills to analyze the interaction of elements.

● Community and Collaboration - the ability to improve verbal/nonverbal communication tactics in a variety of contexts.

● Technological Skills - the ability to determine the most effective use of technology.

● Adaptability- having the flexibility when situations change and obstacle are presented.

● Cross Cultural Awareness - the ability to communicate with and understand other cultures.

(https://blog.eftours.com/inspiration/education/21st-century-skills-of-global-citizenship)

Digital citizenship and digital responsibility will also be a focus for the district as they train all staff on cyberbullying, cybersecurity, and protecting oneself online. All staff will be trained as to what is digitally appropriate with students.

**Communication**

Technology guides children to communicate, facilitate social interaction, and construct stronger language and literacy development (Bers, 2012, p.103). Children tend to communicate two times faster when using technology to interact with their peers. In addition, collaboration is the process in which individuals work together to recognize common goals; which encourage social and pro-social development. Communication is the exchange of verbal and non-verbal information between two places. An effective communication process is attained through understanding. Technology provides children with supports to develop their communication skills through various ways. Over the years, social media has played a major role in the development of children’s various communication skills. Verbal/Non-Verbal communication skills are developed through the use of SMART phones, social media, and video conferencing on SKYPE or Google Hangouts. Written communication skills are developed through emails, texting, along with social media. Visual communication skills are developed and commonly used to communicate through the use of images or emoji’s.

The Hillsborough School District Technology Plan correlates with the behavior of communication as they continue to evaluate and implement new communications and educational programs to promote community digital citizenship programs (Hillsborough Township Public Schools, 2016, p.13). The district plans to create various committees to improve communication with parents and the local community to promote awareness on key issues such as cybersecurity, cyberbullying, and digital citizenship. The behavior of communication can be extended in the district technology plan by assessing parent and student accessibility/usage of technology in their homes. While the fourth goal in the technology plan focuses on ensuring that all instructional and administrative areas in the district have access to high-speed internet, assumptions that all students have technological devices and internet access at home cannot be made.

**Collaboration**

Collaboration enables individuals to work together to achieve a defined and common purpose. As children develop socially, they build relationships that involve emotions as they collaborate. Bers’s (2012) identifies a direct relationship between collaboration and caring. Effective collaboration consists of caring for the needs and ideas of others. As students develop and learn to respect and care for each, the behavior of collaboration becomes stronger and students progress academically. In a report titled The shared work of learning: Lifting educational achievement through collaboration, authors Bentley & Cazaly (2015) present the importance of collaboration as it enables schools to sustain their focus on student achievement building mutually reinforcing connections between academic progress and student wellbeing.

The Hillsborough School District Technology Plan correlates with the behavior of collaboration in their first goal as teachers utilize technology to enhance and transform the learning environment while maximizing opportunities towards globalization of the curriculum, asynchronous learning, and creation, collaboration, and publication of digital content (Hillsborough Township Public Schools, 2016, p.12). Through the integration and use of technology, students and staff can collaborate and communication and share files through platforms such as Google classroom.

**Community Building**

The behavior of community building is the ability to use technology to enhance the community and its relationships (Bers, 2012, p.12). The community building process in the technology plan is based on activities 1.5.5, 2.2.2, 3.2.2 as it focuses on offering community awareness programs on cybersecurity, cyberbullying, and digital citizenship. The plan also addresses the special needs of individual learners and plans to work closely with special education staff to find alternate technology services/devices that best meet the learner’s needs. (Hillsborough Township Public Schools, 2016, p.13-15). Working together with parents and special education staffs can create a strong bond within that community to enhance communication. This community building process allows student to learn more effectively to promote positive and productive behaviors. As stated by Bers (2012), parents are not familiar with the new virtual world of technology, especially with Internet safety (p.43). Parents and teachers can work together to learn to help children to be safe when using technology. Therefore, technology training can be provided to enhance that knowledge.

Furthermore, activity 3.3.3, “Implement the technology integration guide/rubric along with targeted, interactive digital resources to establish a framework for successful technology integration” (Hillsborough Township Public Schools, 2016, p.15) gives children the choice to use technology in their classroom, such as social media and social gaming in which users meet face-to-face and interact with one another. This process can also be a choice of conduct for the district because the district chose to transition to a technology resource that is always available to students. The digital landscape, such as the playground, allows children the freedom to make their own decision and learn to be aware of their consequences, to take risks, and to think on their actions (Bers, 2012, p.91). The ability to choose allows users to build a strong sense of character, explore their moral identities, and to self-grow. According to Bers (2012), the use of social media allows children to engage in “decision making, perspective taking, conflict resolution, and values clarification” (p.95).

**Conclusion**

The Hillsborough School District Technology Plan is an explicit report that details the dedications made by the district to give their students a valuable education strong in technology and that transform teaching through the expansion and innovation of digital learning. This plan was analyzed and compared to Bers’ (2012) six technology mediated behaviors: content creation, creativity, choices of conduct, communication, collaboration, and community building. Furthermore, this project expanded on the existing program to resemble the framework because most of the plan’s goals and activities align with the framework. Overall, Hillsborough Township Public School District made a positive technological effort to enhance, inform, and transform the learning outcome of today's’ youth development.

References

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