Creating Meaningful Learning Environments with Technology

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Introduction

Developing digital educational programing is a challenge in the 21st century as schools try to prepare students to navigate an ever-changing digital landscape to become progressive, productive global citizens. Marina Bers's (2012) concept of a Positive Technology Development framework, which integrates elements of collaborative and constructivist learning with applied developmental science and positive youth development, provides a lens to evaluate the extent that technology plans address digital literacies, while developing a student's sense of identity and purpose. When designing a digital landscape, Bers (2012) identifies six behaviors that should be used as guidelines to promote technological proficiency and positive youth development: content creation, creativity, choice of conduct, communication, collaboration and community building. By examining the Jersey City Public Schools District Technology Plan through the lens of Bers' Positive Technology Development framework, one can clearly see correlations, contrasts and the need for extension of the six identified elements.

Creating Content and Promoting Competence

The goals and objectives outlined for teaching can be extended using Bers's framework for creating digital content to promote competence (2012). These goals involve training teachers in use of "...technology to provide access to the most effective teaching and learning resources...to provide more options for all learners at all levels" (Jersey City Public Schools, 2016, p. 16). This variety of options complements other objectives outlined, which posit that teachers will be enabled to use technology "...in ways that improve learning, assessment and instructional practices" (Jersey City Public Schools, 2016, p. 16). It would be prudent to base the selection of technologies — which would help to improve learning and assessment — in theory,

so teachers would have some guidance as to how technology could be used for the

aforementioned purpose and what technologies would best be suited to fulfill that purpose.

Additionally, as improvement of learning would involve the incorporation of soft skills, which

would be conducive to functioning in various professional contexts, teachers will also have to

have a sense of what skills — aside from content specific ones — should be assessed. As such, it

would behoove teachers to approach the selection of technologies and creation of assessment

through the lens of the tenets of constructionism and the various developmental phases that

pupils undergo at given points in their lives.

Constructionist principles encourage the act of engaging pupils "...in learning by playing,

by exploring, by discovering [and by encouraging pupils] to engage in reflection and to think

about their own thinking" (Bers, 2012, p. 15). With these principles in mind, teachers can

determine what technologies are appropriate for engaging students in these learning and

meta-processes, within the context of various hard skills associated with particular content areas.

Many of the technological platforms that are conducive to this will invariably involve the

creation of content through project-based learning, which will also foster the development of soft

skills. As Bers states, "A child who can create projects will develop [soft skills such as] a sense

of competence, a sense of mastery" (2012, p. 67). Moreover, Bers's framework can further

inform the types of technologies teachers select and activities that teachers create by having them

consider the various developmental phases, outlined by Bers (2012), which pupils undergo

during different times. For instance, "...a four year old with the developmental need of exploring

issues of autonomy...might benefit from working with developmentally appropriate software

that...show the results of his efforts in a simple way" (Bers, 2012, p. 67). As such, a platform

must be selected and an activity must be created, which afford the development of autonomy (which is a soft skill) through exploration of contents associated with hard skills. However, a different type of technology and activity must be adapted and created, respectively, in order to complement the needs of an older pupil who is undergoing the developmental phase of industry vs. inferiority, where mastery (which is a soft skill) over content associated with hard skills is the objective.

Building Confidence with Creativity

Engaging students in acts of creativity to enhance students' confidence — which is another component of Bers's framework — further correlates with goals outlined in the Jersey City Public Schools' technology plan (2016), as building 21st century skills to close the achievement gap is among them. For instance, continuing facilitation of the Hour of Code is among the specific goals outlined on the inventory table for Jersey City's teaching goals (Jersey City Public Schools, 2016). Engaging in such an activity serves to build confidence, which is conducive to development of the 21st century skill of leadership, and having students engage with technology to develop hard and soft skills will invariably foster both, as confidence and competence reinforce one another (Bers, 2012). Bers gives the specific example of using a block-based coding platform, such as Scratch, in which the "...child [acts as a] stage director who gives commands to different characters by putting together a puzzle to tell a story" (2012, p. 71). Essentially, the child builds confidence by making inferences about — and testing — the logistics of the coding language by experimenting with combinations of different blocks of code. In doing so, the child develops competence. This results in the development of confidence, as

students are independently learning the logistics of the coding language to create a final product, thereby equipping students with the necessary skills to thrive in 21st century job markets.

Developing Character Traits with Choices of Conduct

The incorporation of 21st century reasoning skills, which is listed as a learning goal, can effectively be carried out by incorporating use of some of the platforms that Bers discusses. Bers describes the technologies that allow students to explore moral identities —which involves reasoning — from "...programming languages, virtual worlds and social media…" (Bers, 2012, p. 91). These technologies could be included in the action plan that Jersey City Public Schools has created to meet their learning goals, as they can serve to develop the critical thinking skills that accompany making choices about their moral identities. For instance, social media allows people to form an identity that they must be cognizant of, as posts on social media are public and have moral implications. As such, the user must make ethical decisions regarding what is posted and how ideas are being expressed. Thus, utilizing social media for things such as peer feedback will invariably build one's reasoning skills, as the individual posting a comment on someone's assignment will have to make ethical decision about what is being said and how the idea is being expressed.

Games and simulation are listed as assessment tools in Jersey City Public School's technology plan; however, these could be used as learning tools to provide experiences that allow for decision-making. Moreover, through the decision making experience afforded by the game, one can experience the consequences of various choices as an opportunity for learning. As Bers (2012) points out "The nature of social media and social gaming extends the possibility for young people to engage in decision making, perspective taking, conflict resolution, and values

clarification" (p. 95). Thus, games can also be included in the action plan for the teaching goals, outlined on the inventory table.

Promoting Connections with Communication

Technology tools expand capacity for interpersonal experiences (Bers, 2012). The technology plan describes operation of the technology department and the collaboration with departments to provide access for every classroom. It establishes the expectation that technology is being used to connect with others, and exchange thoughts and ideas. This provides an opportunity for the department to model ideal behaviors for communication. Correlation to Bers's framework would require a focus clearly stated, regarding communication "supporting the formation and sustainment of positive connections" (Bers, p. 101). The action plan's goals and objectives describe the commitment to empowering learners as global participants in society and correlates with Bers's themes. Under this goal, use of design principles from learning sciences could be extended to include the outcomes that are expected from employing these principles, including new ways to communicate and connect with others to achieve outcomes.

Under the category for teaching goals, the district technology plan posits that use of technology, and the instruction thereof, will inspire teachers to create excellent lessons, and the action items can be extended to specifically state the ways technology can be used to promote this ideal. Technology creates opportunities for collaboration, and the sharing of information, thoughts and opinions (Bers, 2012). As such, specific platforms that provide the aforementioned affordances, through which support will be received, should be listed. Providing professional learning opportunities for educators to learn how to use technology to improve learning could be extended to clearly describe the ways in which technology supports student access to higher

order thinking, as they connect to and communicate with others in ways that are only made

possible because of technological tools. The teaching goals also identify technology integration

to foster collaboration and increase engagement through personalized instruction and

problem-based learning. Use of the tools could be extended to include the actual use or

application of the tool instead of, or in addition to, the name of the tool. A description that

includes the intended outcome would also be meaningful.

Forming Caring Networks with Collaboration

Bers (2012) suggests that the goal of connecting and collaborating with others is not only

the resulting productivity and learning opportunities but ultimately the formation of caring

relationships, which demonstrate a "...willingness to respond to the needs of other individuals, to

assist others and to use technology as a means to help others" (p. 111). Jersey City Public

Schools (2016) explicitly recognizes this principle when addressing the goal of supporting

professional educators by connecting them "...to data, content, resources, expertise and learning

experiences that enable and inspire more effective teaching for all learners" (p.16). The activities

described in the action plan for the teaching goal of "Prepare and Connect" clearly provide

opportunities for a variety of educational professionals to assess the needs of others and use

technology to support them. For example, educational professionals are provided time and

resources to build social media supported professional learning communities (PLCs), maintain a

best practices website and attend in-service opportunities for all levels of staff (pre-service

teachers, in-service teachers and administrators) to discuss the implementation of a variety of

technology based lessons and tools. These caring networks seem to be established to not only

share content but provide inspiration, motivation and professional support for the staff.

However, while this principle is explicitly addressed for the professional staff, the technology plan should also address how this principle can be extended to the students. The implementation of a Student Tech Squad, which is mentioned briefly in the action plan, is an excellent start to this extension. More references as to how the students could be encouraged to use technology to not only to collaborate on their studies but also to connect to help each other through caring networks is recommended. Bers (2012) suggests that a broad range of tools — including social networking, texting, web pages and blogs — lend themselves to collaboration, which leads to caring networks among the students. Reference to staff supported creation and moderation of these student spaces would ensure that this principle was addressed.

Contributing with Community Building

New technologies afford us the opportunity to not only connect with and support others, but also to contribute to making our world a better place through community service, activism and advocacy (Bers, 2012). While this idea is generally addressed in the learning objective designed to prepare students to be "...active, creative, knowledgeable, and ethical participants in our globally networked society" (Jersey City Public Schools, 2016, p. 20), this principle must be addressed directly in the technology plan in order to be effectively applied. Just as direct steps are taken to recognize the development of STEM skills and experience to enhance students' 21st century global skills, specific actions should be established to use technology to expose and engage students in local and global civic and/or volunteer opportunities. Bers (2012) suggests that this principle can be addressed by assisting students in using a mix of technology and in-person activities to connect with and address a problem in local or distant communities. Gamification is also an opportunity to provide students simulations of civic engagement to

develop the critical and activist thinking that encourages local or global civic participation (Bers, 2012). To fully address the learning goal identified as "Engage and Empower" in the Inventory Table, specific steps addressing the use of technology to promote students' contributions to improving our world should be addressed in the action plan.

Conclusion

Overall, the Jersey City Public Schools District Technology Plan appears to touch upon all of the elements of Bers's (2012) Positive Technology Development framework, providing a strong basic plan to develop students' digital literacy as well as personal identity and purpose. Yet, while the students will clearly benefit from the specific steps identified to ensure the proficiency, collaboration and creativity of the teachers, clear reference to actions addressing the six elements of the Bers's framework in student application would enhance the technology plan. In addition, as Bers's framework is intended to address environments in which experiences happen rather than identify specific tools, it is important to evaluate and choose the appropriate digital tools to support these experiences in the classrooms. The behaviors identified in Bers's framework support a 21st century education, which effectively uses technology to mold proficient and empathetic global citizens; with a few modifications, the Jersey City Public Schools District Technology Plan could address all of these behaviors and reach this lofty goal.

Bibliography

Bers, M. (2012). *Designing digital experiences for positive youth development: From playpen to*

playground. New York, NY: Oxford University Press.

Jersey City Public Schools. (2016). Jersey City Public Schools district technology plan.

Retrieved from http://www.jcboe.org/boe2015/images/pdf/depts/bueinesstech/

District_Tech_Plan_2017.pdf