

Developing Digital Citizenship Through Project-based Learning

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Many of today's students show a general disinterest towards academic learning because of a perceived lack of real world relevance (Bridgeland et al., 2006; Willms et al., 2009). This monumental challenge for today's educators comes at a time where students' access to information is greater than ever before, as they grow and interact with peers in various online experiences. Through continual advancements in technology and subsequent access to information at an exponential rate, we believe youth today are faced with two critical challenges: to navigate through the cognitive, social, and emotional areas of life with the added component of becoming digitally literate, and to do so with an open, inquisitive mind. Thus, the promotion of digital citizenship is quickly becoming a critical pedagogical concern in many classrooms throughout the world. Educators are faced with the task of educating students at this critical focal point in educational change.

Key Frameworks

To ensure that students are exposed to rich, authentic learning environments we have chosen to design our constructivist learning environment (CLE) framework around project-based learning theory (PBL). The BUCK Institute (an NPO that promotes PBL values) defines PBL as “a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks” (Markham, 2003). The project method “places students at the heart of learning by empowering them to follow their sense of wonder into new discoveries and insights about the way the world works” (Stripling, 2004). The focus of our design project will be to develop and implement a project based learning (PBL) unit that engages students in the co-construction of what it means to be a responsible digital citizen. Through PBL, students will then collaborate to create a bill of rights pertaining to the virtual world.

Reigeluth (1999) states, “the current paradigm of education and training needs to change from one focused on sorting to one focused on learning” if we are to establish any meaningful improvement.

Many educational initiatives see this wisdom and attempt to move from traditional educational models to those which are more reflective of 21st Century learning needs; however, in order to accomplish this goal, learning-focused instructional design theories must be created that “provide appropriate combinations of challenge and guidance, empowerment and support, self-direction and structure” (1999). Also, since the introduction of constructivist teaching and learning approaches can feel somewhat ‘untethered,’ we propose the use of Project Based Learning as a means to not only provide this challenge, guidance and support, but also to effectively scaffold the transition from traditional linear methods to that of a technology-supported constructivist learning environment (Papert, 1980).

With the embedding of technology in today’s culture and its powerful influence over students today, digital citizenship is a necessary subject to address. One of the influential leaders in the development of digital citizenship includes the International Society for Technology in Education (ISTE). The ISTE has developed a set of standards (formerly known as NETS) to address a number of digital citizenship concerns. These standards cover many aspects of the overwhelming changes to education associated with technological integration into the classroom. We believe it would be beneficial if elements of these standards were incorporated into and are supported by our final design.

Intentions and Positions

It is increasingly clear that the education system is not adequately equipping students with the skills most applicable to the twenty-first-century learner (Wagner, 2010); skills that will also allow them to be successful and contributing members of society. This includes “the competencies that young people need today in order to be prepared for [working life]” (2010). Effective instructional design can create “practice fields in which students in schools engage in the kinds of problems and practices that they will encounter outside of school” (Barab & Duffy, 2000). This aligns meaningfully with the aims and objectives identified in PBL as it helps students to become active learners by engaging them in

real-world problems that help develop strategies, construct knowledge, and to foster responsibility for their own learning (Hmelo-Silver, 2004). Furthermore, current discourse indicates that PBL: “(a) has a positive effect on student content knowledge and the development of skills such as critical thinking, problem solving, and collaboration; (b) benefits students by increasing their motivation and engagement,” (Bradley-Levine et al., 2010). These skills all serve as a necessary foundation to prepare students for their increasingly technological futures.

With regards to counter-arguments around PBL, Major & Palmer argue that it brings new and unique challenges to traditional methods of assessment (2001) making older methods inadequate. However, the BUCK model of PBL provides explicit instruction on how to define criteria to assess students understandings to reorient “learners and teachers away from traditional paper and pencil tests and towards more authentic assessment practices” (Markham, 2003). We believe that this aligns well with the BC Education Plan’s directive to modernize and transform education in BC by helping “teachers create learning environments that are both engaging and personalized for students” (Ministry of Education, 2013). BC’s Education Plan also encourages “smart use of technology in schools, better preparing students to thrive in an increasingly digital world” (BC’s Education Plan, 2012), thus allowing them to contribute to the well being of the province by realizing their full potential (2012). We are aware that the implementation of PBL on a larger scale will require practice, training and support (Major & Palmer, 2001) but as this aligns with aims of recent curriculum overhaul, as such we are confident that PBL can be applied as vehicle to drive change. Finally, we believe that teachers may feel more at home with this approach as many have prior experience planning projects that align with former curricular goals since the application of PBL will also allow for a gradual restructuring.

To effectively put this framework into practice our group will design a project based learning unit for use in a face-to-face or blended class setting, providing students with authentic opportunities to

explore issues relevant to digital citizenship. Our efforts will focus on developing students' foundational competencies to think critically around issues such as cyber-bullying, moral & ethical conduct, digital rights and responsibilities, digital communication, etc. These activities will serve as an ethical lens through which students will evaluate and reflect on their responsibilities as digital citizens while demonstrating their competencies through their development of the digital bill of rights.

Key Concepts and Contexts

The BC Ministry of Education reviewed and commissioned research on the transformation of education locally and abroad (Ministry of Education, 2013). The curriculum is supported by the beliefs that learning is situated, constructed, and socially negotiated. It places importance on context and social interactions, and the idea that learning is not just the routine of collecting facts as mastery, but more of a continual reflective expansion of a breadth and depth of competencies (Dumont et al., 2010; Scardamalia & Bereiter, 1994). The curriculum thus places emphasis on curricular/cross-curricular competencies, taking into account project and problem based learning as avenues to reach modern curricular goals (Torp & Sage, 2002).

It is significant, (if not essential) for curriculum to have constructivism as a central learning theory. The NDC is conceptually solid through researched frameworks, but lacks many significant exemplars or working resources for educators to use. There are gaps in this emerging change in learning environments in BC. We propose to create a 4 week unit for an interdisciplinary project (Socials and English 9) that investigates the cross-curricular competency of digital citizenship. Through our application of PBL models, the following describes the competencies that would be developed, building up to student creation of a Digital Bill of Rights for the school.

Table 1 Cross-curricular Competencies and Sub-domains		
Thinking Competency	Personal and Social Competency	Communication Competency
<ul style="list-style-type: none"> o Critical thinking o Creative thinking o Reflective thinking 	<ul style="list-style-type: none"> o Positive personal and cultural identity o Personal awareness and responsibility o Social awareness and responsibility 	<ul style="list-style-type: none"> o Language and symbols o Digital literacy <p>Adapted from: Defining Cross-Curricular Competencies • Ministry of Education • Draft January 2013</p>

Table 2 Sub-domain of Digital Literacy Competency
<p>Global Citizenship</p> <p>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p> <p>Source: Ministry of Education • BC's Digital Literacy Competencies • Draft January 2013 http://www.bced.gov.bc.ca/dist_learning/digital-literacy-competencies.htm</p>

Table 3 Draft English and Social Studies 9 Curriculum		
English 9 Concepts and Content	Social Studies 9 Curricular Competencies	Social Studies 9 Concepts and Content
<p>Students will know and understand ...</p> <ol style="list-style-type: none"> 1. reading and metacognitive strategies before, during, and after reading to improve understanding and thinking 2. the writing process to enhance communication 3. the purpose and impact of a variety of communication forms <p>Source: Adapted from: Ministry of Education • Draft January 2013.</p>	<p>Students will develop competencies needed to be active, informed citizens:</p> <ol style="list-style-type: none"> 1. Explain different perspectives on past or present people, places, issues and events, and distinguish between worldviews of today and the past (perspective) 2. Recognize implicit and explicit ethical judgements in a variety of sources (ethical judgement) 3. Make reasoned ethical judgements about controversial actions in the past and present after considering the context and standards of right and wrong (ethical judgement) <p>Source: Adapted from: Ministry of Education • Draft</p>	<p>Students will know and understand ...</p> <ol style="list-style-type: none"> 1. features and characteristics of major world political revolutions and conflicts <p>Source: Adapted from: Ministry of Education (n.d) • Curriculum Drafts • Social Studies 9.</p>

Learning Context

Grade 9 is an awkward age and the question “what is best?”, for this age group is a subject of continual debate. Middle school students are conflicted with the rules they have followed since elementary school, and the realization that many of those rules were arbitrarily picked by adults. They often do not understand why rules apply to them and do not make the connection to the societal contract of rules that are meant to help everyone. Around the age of sixteen ideas are formalized and rules are generally evaluated with others in mind. Students can make these connections earlier if they are part of the rulemaking process (Zakrzewski, 2012). Our design project will invite students into the rulemaking/rights-making process and allow them to construct their own understanding. The Digital Bill of Rights, places students into real world roles where they can practice as practitioners in an authentic context while being aided by appropriate digital tools (Dall’Alba & Barnacle, 2005).

Our educational environment historically uses social conformity and standardization to maintain order and prepare students for the workforce. Middle school students can be managed into compliant classrooms and taught how to write tests efficiently. 21st Century Learning advocates argue that this compliance based environment is an outdated factory model, whereabouts students are preparing to enter middle class jobs that are based on routine labour. They argue that we need to create an educational environment that teaches communication and collaboration to solve dynamic and complex problems that model the changing needs in advanced labour markets (Griffin, 2012). Our PBL unit’s project is a dynamic and complex problem that students will have to question, debate, negotiate and continually reflect upon.

Our unit assumes that students take core courses (Math/Science and English/Socials) with the same teachers or teaching partners. Hmelo-Silver (2004), warns us that many merits of PBL implementation have only been proven in medical schools where courses are interdisciplinary. She

cautions that the barriers created by subject areas and the nature of trying to neatly package PBL into only a single discipline--is risky. PBL in its most authentic form can be challenging for novice learners without the appropriate scaffolding of learning. Our unit will address the needs of novice, intermediate and advanced learners through teacher assessment and collaboration.

Interactivities

Our delivery platform will also take into account these needs by providing a basic scaffolding for both teachers and students. According to Bates & Poole, “with technology developing at such a rapid pace, teachers and administrators are constantly being faced with the need to make decisions about appropriate technology for teaching” (2003), and given the wide range of options available, they must select technologies that best meet the needs of students within the authentic classroom context, both student and resource-based. This implies a narrowing of resources, however, in accordance with PBL philosophy, students should experience a range of dynamic learning objects through which to present their findings. To address this tension between facilitating student choice and helping teachers vet types of technologies used, we (as education technologists) intend to provide a refined list of appropriate resources used to complete unit activities. We will produce our design as a website-based toolbox (landing page) for use in the face-to-face classroom setting. Within this toolbox we will be placing interactivities to support students’ progression through our PBL unit while developing their critical, creative, and reflective thinking around digital citizenship. The website will also contain static resources for teachers such as unit rationale, unit plan and related media, as well as opportunities for teachers to engage in professional learning and development through forum discussion.

The interactivities hosted on this website will consist of related services and media such as images, videos, podcasts, links, documents and discussion forums. The content will be divided into four main parent pages/categories (items in dark blue represent how this will form the main navigation

of the site). These main pages will link to sub-pages (as seen in the student and teacher columns below). Table 4 represents what the website navigation will look like if all categories were unfolded:

Table 4 - Website Navigation			
Introduction ↓	For Teachers ↓	For Students ↓	Portfolio ↓
Purpose	Rationale	Projects & Media	Past Projects
	Teaching Resources	Tech Toolbox	
	Media Page / Toolbox	Discussion Blog	
	Discussion Blog		

The materials that will occupy these pages are: the refined unit plan, rationale behind the materials, and a sampling of vetted and relevant teacher resources (only samplings will be included since we will not have time enough to populate all resources due to course constraints). Sample activities will be posted for students along with a list of relevant resources for each activity that may be used to successfully complete the assigned activities (tech toolbox).

The website will also allow for communication and collaboration between students to develop these 21st century skills. The scaffolding of tasks will ask students to constantly question, debate and negotiate their learning and reflect upon the experiences that they are engaged in. Attached you will find a draft outline of our digital citizenship unit plan (see Appendix). Elements from the BUCK Institute of PBL (significant content, 21st century skills, driving question, entry event, in-depth inquiry etc.) have been included in the draft to bring life to the inquiry students will be participating in during this unit. We hope that our unit and its supporting interactivities will effectively address the critical areas of need outlined above and will provide a well scaffolded, technology supported constructivist learning environment.

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Appendix

What does it mean to be a Digital Citizen?**Begin with the End in Mind*****Summarize the theme of "big ideas" of this project. Why do this project?***

For this project students will be immersed in a collaborative environment and be provided with opportunities to explore and demonstrate their understanding of what it means to be a digital citizen. Through these opportunities students will co-create their own understanding of what it means to be a digital citizen while analyzing important topics such as cyber-bullying, moral and ethical conduct, digital rights and responsibilities and digital communication. It will be expected that through this project students demonstrate their ability to be open-minded and consider varying points of view on this important topic and develop the skills and knowledge to create and communicate knowledge digitally in a safe and ethical manner.

Big Ideas:**Ministry of Education Draft Curriculum, ELA, Grade 9**

Students will be able to:

- use language with increasing artistry and precision as a powerful tool in the process of communicating for a variety of purposes and audiences
- respond to and create multiple types of texts which enables the ability to construct meaning, express ideas, think critically and creatively, and connect with others

Ministry of Education Draft Curriculum, SS, Grade 9

Students will:

- understand that change is driven by multiple causes and results in multiple consequences

Curricular Competencies:**Ministry of Education Draft Curriculum, SS, Grade 9**

Students will develop competencies needed to be active, informed citizens:

- Explain different perspectives on past or present people, places, issues and events, and distinguish between worldviews of today and the past (perspective)
- Recognize implicit and explicit ethical judgments in a variety of sources (ethical judgment)
- Make reasoned ethical judgments about controversial actions in the past and present after considering the context and standards of right and wrong (ethical judgment)

Identify the learning outcomes that students will learn in this project.***Digital Citizenship*** (<http://www.iste.org/docs/pdfs/nets-s-standards.pdf?sfvrsn=2>)

Students understand human, cultural, and societal issues related to technology and practice legal and ethical

behavior.

- Students will be able to:
 - advocate for and practice safe, legal, and responsible use of information and technology.
 - exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
 - demonstrate personal responsibility for lifelong learning.
 - exhibit leadership for digital citizenship.

English Language Arts (<https://curriculum.gov.bc.ca/curriculum/English%20Language%20Arts/9>)

- Understand the ways in which language changes and evolves
- Compare ideas encountered in a variety of texts and genres
- Develop and defend an opinion or point of view with supporting evidence
- Create a variety of texts to communicate ideas, create impact, and evoke emotion

Socials Studies (<https://curriculum.gov.bc.ca/curriculum/Social%20Studies/9>)

- Understand features and characteristics of major world political revolutions and conflicts

Identify the 21st Century Skills that students will practice and learn in this project. List only those skills you plan to assess.

Core Competencies and Cross Curricular Competencies BC Ministry of Education:

Creative Thinking

- The Creative Idea, Expression or Product (Creating novel/innovative ideas, expressions, works in various media)

Critical Thinking

- Identify issues; develop questions
- Gather, assess and analyze information
- Understand perspectives; consider evidence and points-of-view
- Consider, develop, and evaluate conclusions and solutions; reflect on outcomes

Reflective Thinking

- Reflect on one's own thinking and learning process
- Make connections to existing knowledge

Personal and Social

- Positive personal and cultural identity
- Personal awareness and responsibility
- Social awareness and responsibility

Communication

- **Connect and engage with others [to share and develop ideas]**
Includes informal conversations, as well as contributing to focused discussions about ideas.
- **Acquire, interpret, and present information [includes inquiries]**
Many purposes and audience, from sharing personal interests to formal presentations. Often includes media.
- **Collaborate to plan, carry out, and review constructions and activities**
Working together to accomplish goals – ranges from young children planning how to create a

construction to older students planning an inquiry; planning a performance; working together to ... the collaboration can be through digital media.

- **Explain/recount and reflect on experiences and accomplishments**

Students tell about their experiences – especially about their learning experiences and show/tell what they learned. Often includes self-assessment. Reflective

Describe the real-life connections and authentic audience for this project.

- Social media tools
- Blogging
- Micro expression
- Public audience
 - World Wide Web
 - School Board (potentially cross district)
 - School Planning Council and School Administration

Craft the Driving Questions

State the essential question or problem statement for the project. The statement should encompass all project content and outcomes, and provide a central focus for student inquiry.

What does it mean to be a digital citizen?

Have you posed an authentic problem or significant question that engages students and requires core subject knowledge to solve or answer?

Entry Event:

How will you hook students in?

Ask students to sign up for an account on Vizify to create a visual representation of the digital footprint that they are leaving on the world wide web.

Have students reflect (digitally using the forum provided or in their journals) on their digital footprint using the following prompt:

- If you were an employer looking for a new employee and you discovered your "digital footprint" would you hire yourself? Why or why not.

Task:

As a team of 4 you will be in charge of developing a digital bill of rights for your school community. This bill of rights will be used to help educate the community about the rights and responsibilities required for an individual to be an effective digital citizen in today's technology filled world. As a team you will present your digital bill of rights to the class, in the pursuit of persuading your classmates that the components you have

included encompass the full spectrum of rights and responsibilities necessary for safe and ethical activity in an online environment. Components will be voted on from all of the group's presentations and combined to create a final proposed Digital Bill of Rights that will be presented to the school community members for approval. If approved, the bill of rights will then be presented to the school board for possible publication as part of the schools digital citizenship policy.

Plan the Assessment

Define the products and artifacts for the unit

Content/Skills/Attribute	Formative Assessment Along the Way	Summative Assessment
TBD	TBD	TBD

Map the Project:

TBD