

Increasing Indigenous student engagement by supporting inclusive and student-centred online learning

INTRODUCTION

This essay focuses on the consolidation of knowledge regarding the creation of authentic learning experiences in online environments, supportive of diverse learners. I consider ways to build intercultural competence through negotiated identity foundationally grounded in the Transformative Learning model. Additionally, I present insights into how my own technology practice has evolved based on understandings of the importance of Virtual Learning Environments (VLE) that contemplate the fluidity of culture as identity is negotiated. Finally, I provide examples of how my team and I approach the design and functional aspect of building a VLE in support of diverse learners, and specifically in support of authentic Indigenous student learning experiences in K-12 STEM subjects.

INDIGENOUS CULTURAL RECLAMATION OF IDENTITY

Developing learning environments which are inclusive of identity, and which seek to build intercultural competence is critical to building confidence in students of all ages. In HOA#2, I outlined concerns regarding low Indigenous highschool completion rates in comparison to western students, and then provided insights into why western-based social constructs may negatively impact Indigenous student completion of K-12 education, which ultimately prevents post-secondary enrollment and meaningful labour market participation. I learned that many students leave K-12 before graduation due to low confidence, lack of time, and lack of interest in western style education. In my reflections, I considered that each of these reasons is culturally situated, and how critically important learning environments in support of cultural reclamation are to Indigenous student success. Finally, in prior work, through critical reflection of my own understanding of Angeli, C. & Valanides' (2009) ICT-TPCK model as a framework to develop Wiscoms, I rejected their framework noting numerous gaps specific to understanding how student context (culture/worldview) is practically supported in an online environment.

FRAMING THE ISSUE

Sociological Context of Indigenous Students

Bidwell and Bonny (2015) outline key success factors for post-secondary Indigenous students:

- K-12 preparation is key for success in post-secondary STEM
- Student-centred instructional strategies
- Cultural-capacity building within STEM in K-12 and post-secondary
- Preparation of instructors to embrace socially and culturally-responsive approaches

Embracing Indigenous students' worldviews combined with better preparation and support for educators are key success factors for Indigenous students in K-12 and post-secondary studies. Educational practice should, therefore, focus on building intercultural competence, in this case between Indigenous and western students where a Third Culture emerges that is representative of both distinct and shared ways of meaning making, and which becomes the Wiscom, situated in the VLE.

TRANSFORMATIVE LEARNING

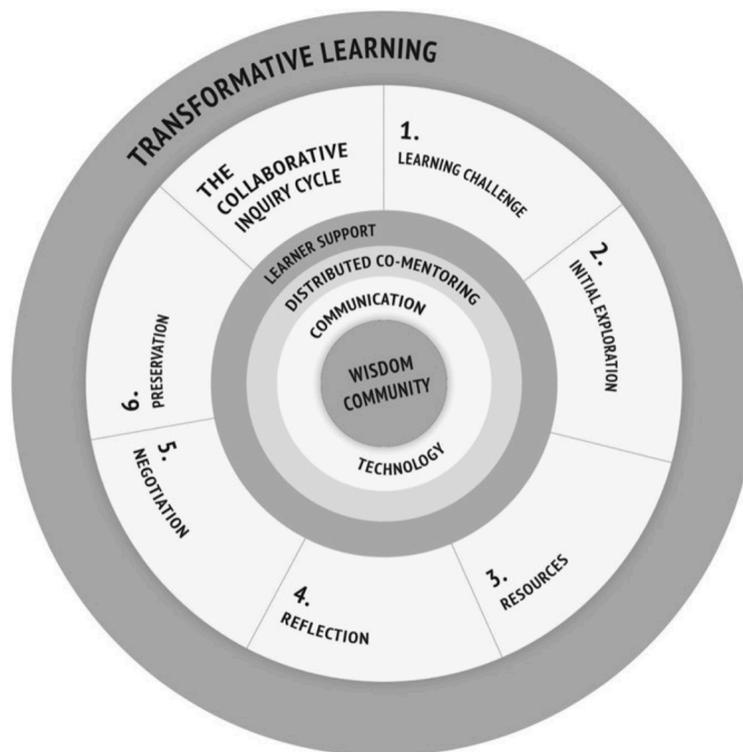


Figure 1.1 WisCom Framework
Source: Created by Casey Frechette for this volume

“Gunawardena et al. (2019) outline ways in which online educators and designers might best create a learner support system that can accommodate a culturally inclusive perspective,”(ETEC 565 course readings). Specifically, a transformative VLE will support learner negotiation of culture and identity through its Wiscom. In reference to Figure 1, at Wiscom’s core is the negotiated culture where identity is authenticated, which forms the basis upon which student-centred learning occurs through learner supports, distributed co-mentoring, and reflective communication technology. Chen and Dai (2012) underscore the importance of intercultural sensitivity, which “motivates

people to understand and acknowledge other people’s needs, and translate emotions into actions...that reduces situational ambiguity and uncertainty,” (p. 132). Emerging cultural awareness is foundational to the emergence of The Third Culture of the Wiscom.

STUDENT CENTRED LEARNING AND IMPLICATIONS ON LESSON PLANNING

In the following diagrams I present a series of screenshots, which are digital interactives that outline how diverse classrooms, constitutionally rooted in a Wiscom, can engage in learning experiences situated in their worldview. Figure-2 below (Singh, Sun, Weber, 2016) represents lesson plan activity connections to worldview-dimensions, as adapted from Felder-Silverman (1988), which reflect culturally oriented representations of Indigenous-worldview and western-worldview with the former aligning more with Reflective/Intuitive/Verbal/Global, and the latter aligning more with the Active/Sensing/Visual/Sequential. Although this is my own inference, it is noted as an area for further investigation. Each learner dimension will inform student-centric

	Definition	Lesson Plan Activity
ACTIVE	Doing something active with it. Discussing, or explaining it to others.	Collaborative activities and real-world experiments promote sharing.
REFLECTIVE	Thinking about it quietly first.	Online self-guided activities for personalized learning and progression.
SENSING	Learning facts.	Logic-oriented activities based on facts.
INTUITIVE	Discovering possibilities and relationships.	Interdisciplinary activities with multiple facets.
VISUAL	See-- pictures, diagrams, flow charts, time lines, films and demonstrations.	Videos, games, and digital interactives that provide visualizations.
VERBAL	Words-- written and spoken explanations.	Music, sound and narration are combined in resources for auditory learners.
SEQUENTIAL	Gain understanding in linear steps.	Browse functionality searches and lists material in a sequential, linear progression.
GLOBAL	Learn in large jumps, suddenly "getting it."	Mindmap to visualize connections among topics and provide holistic, big-picture view of material

Figure-2. FSLM dimension alignment to student-centred learning & lesson plan activity

Source: Singh, Sun, Weber (2016).

needs specific to the Collaborative Inquiry Cycle (CIC), where options are presented for learning challenges, initial exploration, resources, reflection, negotiation, preservation, and ultimately knowledge formation. However, I believe that *how* the student progresses through the CIC will be dependent on their individual worldview, or in some cases, the newly emerged worldview of the Third Culture.

As example, a *Reflective/Intuitive/Verbal/Global* student may enter the CIC by being presented options for a learning challenge, and he/she might benefit through opportunities of advanced contemplation of the learning area, and supported with the appropriate resource. Through a culturally aligned online co-mentor-space with an

Elder, the Indigenous student is able to verbally negotiate meaning. However, an *Active/Sensing/Visual/Sequential* student, also presented with options for a learning challenge, may be supported through provision of self-directed online games and interactives with sequential/linear game mechanics, and may negotiate meaning through text-based collaboration. Overall, the underlying consideration within the Transformative Learning learner-dimension is for educators to provide lesson plan activities in support of culturally situated learner-centred requirements.

VLE DESIGN AND FUNCTION

The VLE can support diverse student-learning dimensions as outlined in the FSLM diagram. By translating the FSLM framework into functional VLE feature requirements, we “create an environment where learning concepts can be absorbed and made relevant to K-12 students,” (Singh, Sun, Weber 2017), which is inclusive of worldviews. As example, Figure-3 illustrates the browser-view of VLE content. It provides a linear/logical gateway to associated/sublevel content, which is typical of compartmentalized western-ways of learning. It is designed for *Sequential* learners, which I note anecdotally aligns with western-worldviews.

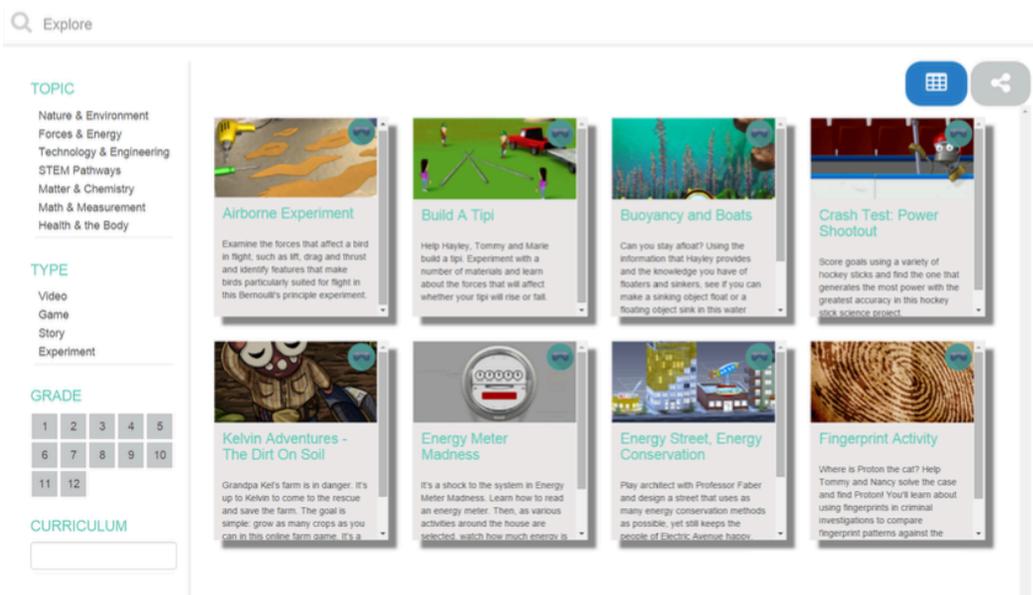


Figure-3. FSLM alignment to student-centred learning & lesson plan activity through western worldview

Source: Singh, Sun, Weber (2016).

However, the holistic and interdisciplinary view, as represented in Figure-4 below, provides access to a mindmap, which is designed for *Global* learners, which I anecdotally note aligns with Indigenous-worldviews. Students access a topic, and the global-intuitive-oriented-map provides connections to all interdisciplinary content

associated with the topic (Singh, Sun, Weber, 2018). Importantly, both interfaces provide access to similar content, however, the interface design is situated in student-centred ways of learning and knowing and worldviews.

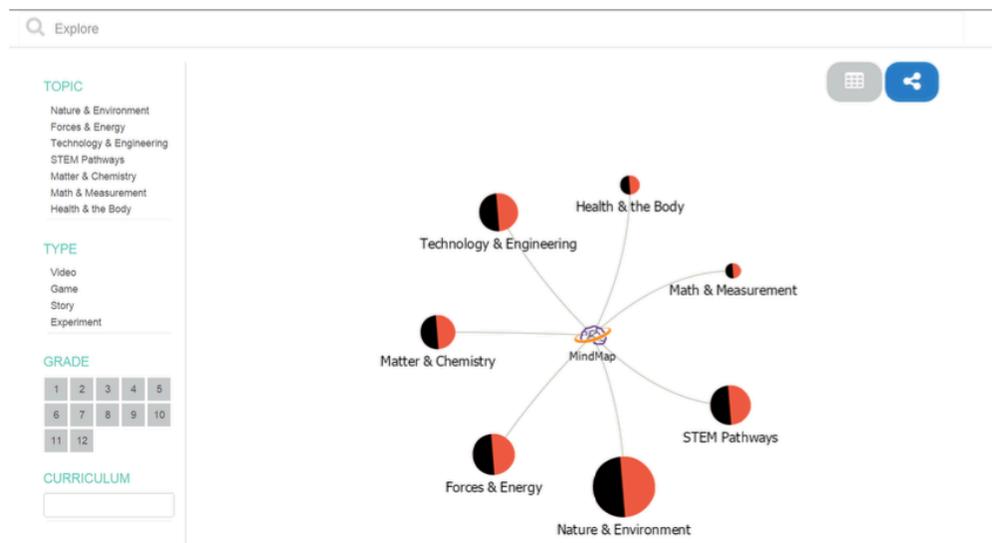


Figure-4. FSLM alignment to student-centred learning & lesson plan activity through Indigenous worldview

Source: Singh, Sun, Weber (2016).

CONCLUSION

This theoretical analysis of inclusive and student-centred learning, through a VLE foundationally grounded in a constructivist Wiscom framework, as a means to increase Indigenous student engagement in online learning outlines possible areas for future investigation. Specifically, educational frameworks which incorporate Indigenous epistemological influences of teaching, student-centred learning, context of worldviews, and technology may result in developments of higher intercultural competence between western and Indigenous students, higher engagement in K-12, and ultimately increased post-secondary pursuits for Indigenous students.

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