

Vancouver Island University

Integrating Digital Components for Instruction

Physiographic Regions of Canada

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OLTD 502

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My Vision and its Connection to the OLTD Program

Having a keen interest in personalized learning and what that may look like in years to come, I am hoping to be able to work in a collaborative team whose focus would be to create frameworks for school districts, provinces and countries that assist in the successful implementation of changes that critical stakeholders have indicated as necessary.

Changing the “education system” in First World nations, long entrenched in tradition and often fraught with paralyzing and paradoxical political policies, can be a complex and lengthy process. However, the way people now want to become educated is changing whether or not governments prefer it, want to accommodate these changes or have the strategic plans to do so! With the explosion of information access that the invention of the Internet has brought to billions of people, I think many governments will have no choice but to respond accordingly. And that response will likely continue to include increased technology use within [public education plans](#). Hopefully all citizens, and those more directly connected with public education, won't let educational governing bodies begin and end with developing and adopting Technology Implementation Plans that focus on rolling in hardware and software without also taking into account *how* technology will be best used to educate the children and youth of the 21st Century.

It is from this perspective that my educational interests and skills can be put into play and tested, grown and ultimately improved upon, throughout my time in the OLTD Program. My passion is to create and provide learning opportunities that, though personalized to meet the needs of individuals, are hands-on, inquiry-based, “social” in context and connected to real-world applications. I believe however, that to do so in today’s climate of [Connectivism](#), is to do so in a technological environment and therefore I must move in a more digital direction. Fortunately I have had a longstanding interest in technology and its effective use in education. So herein is a description of where I am headed despite the fact that, like many before me who work to educate youth and young adults in the relatively early stages of a technology-connected world, I have no clear “roadmap” for which to follow.

UbD, OLTD and Me

Taking Understanding by Design (UbD) to heart, I hope that by the end of my time in the OLTD Program that I will be able to understand how to plan and deliver project-based learning activities that would allow students to address cross-curricular Learning Outcomes (LO’s) in a blended or online environment. In addition, I hope to be able to identify the best practices with various technologies, helping teachers understand how to use technology appropriately and in ways that strengthen critical thinking, though simultaneously, are in alignment with what neuroscience and developmental psychology is unearthing about cognitive and emotional development of children and youth.

At present I see 3 main stages of development in order to meet these goals:

1. Understanding cross-curricular outcomes to identify overlapping areas suitable for creating project-based learning activities.
2. Re-designing some of the currently existing Units and learning activities to match the current LO's but more importantly, the ones evolving in the projected [BC Ed Plan](#).
3. Designing a variety of Differentiated learning activities that can be accessed online through a Learning Management System but can also be used in blended or online and face-to-face environments.

Of course each stage in the process will require many sub-topic areas of investigation and learning. To this end, I am allowing for the addition of many pathways of “divergent loop-backs” along this overly simplistic and linear description of how I will be getting from here (OLTD 502) to there (the online delivery of differentiated, integrated, project-based courses).

My Previous Teaching Assignments:

Aside from the 6 months that I was in an Elementary School at the very beginning of my career, I have worked with high school students for the past 25 years. As a former Mathematics Department member teaching all grades from 8 - 12, I have spent the last decade working in Alternate Programs where I lead student learning in all the Grade 10 courses required for the Graduation Certification Program in British Columbia, Canada. More recently, I have worked with staff in the Work Options Program at Delta Secondary to design personal learning plans for students in the School Completion Certification program wishing to join the work force immediately after high school.

My Current Teaching Assignment

Currently I am working in a Supportive Learning program, helping students with various learning difficulties to navigate through the curriculum required to complete the BC Dogwood High School Graduation Certification. Typically these students have complex learning needs that affect their progress and ability to complete the assigned work. Often their obstacles to learning demand that information be presented more visually and that demonstration of understanding *not* be limited to text-based responses. To that end, the work that I will be doing throughout the OLTD Program, will centre around Universal Design for Learning (UDL) principles, with a Differentiated Instructional (DI) focus, so that what I may create will be suitable for most classrooms, especially those faced with increased numbers of students with complex learning needs.

OLTD 502 Course Assignment and Project

Specific to 502, I am working at Stage 1 and Stage 2 of the previously stated goals, focusing on developing a Re-design of a Grade 10 Social Studies Unit Plan currently being used at my school. This Re-design component will be part of *both* the Course Assignment: Critique and Redesign due November 30th, and the Final Project: Designing a New Learning Activity for Use in Practice, due December 21st. For the Critique/Re-design course assignment, I will focus only on the Social Studies Unit incorporating some DI strategies to provide alternatives to the audio (lecture style) and text-based (textbook) access points of information delivery. For the Final Project, I will develop an integrated approach to the re-design, including some Mathematics learning outcomes so that a

student who successfully completes this learning activity could have the necessary evidence to “sign off” on multiple LO’s, for both courses. Moving along this continuum, a potential final result, perhaps suitable for OLTD 503 On-line Communication and OLTD 504 Learning Systems courses, would be to move toward creating project-based or inquiry-based re-designs so that students completing these “projects,” cover the prescribed LO’s in ways that integrate some or all of the four core academic “competencies” in Math, Science, Social Studies and English **and**, are delivered on-line.

502 Course Assignment:

Learning Activity Critique and Re-design – Grade 10 Social Studies

BC Social Studies 10 - Overview

The BC Social Studies curriculum is organized into a section on Skills and Processes required to study Social Studies effectively and 4 broad themes that outline the content to be emphasized (see Figure 1 below).

Social Studies 10				
Skills and Processes of Social Studies	Identity, Society, and Culture: Canada from 1815 to 1914	Governance: Canada from 1815 to 1914	Economy and Technology: Canada from 1815 to 1914	Environment: Canada from 1815 to 1914

Figure 1

The generalized learning outcomes are provided on page 16 of the [Grade 10 BC Socials Studies Curriculum](#) (a section of which is seen in Figure 2) with more specific attention paid to accompanying Achievement Indicators on pages 24 – 30.

ECONOMY AND TECHNOLOGY: CANADA FROM 1815 TO 1914	
D1	assess the impact of Macdonald's National Policy on Canada
D2	analyse the influence of the following on Canada's economy from 1815 to 1914: <ul style="list-style-type: none"> - resource development and decline - technological innovations
D3	describe the development of British Columbia's economy from 1815 to 1914
ENVIRONMENT: CANADA FROM 1815 TO 1914	
E1	describe the physiographic regions of Canada and the geological processes that formed these regions
E2	analyse how geography influenced the economic development and settlement patterns in regions of Canada from 1815 to 1914
E3	evaluate attitudes and practices in resource development in British Columbia from 1815 to 1914 and their impact on contemporary resource management

Figure 2

As identified in the above charts, the period of emphasis is the one hundred years from 1815 – 1914. Though the content is historically specific, most Social Studies teachers agree that one of the main goals in studying history is to understand how what happened in the past, has affected what is today. As such, reading, watching and discussing *Current Events* are almost always part of what teachers do in their classrooms in their attempts to connect students to their country's historical past.

Social Studies 10 – Physiographic Regions of Canada Overview

At the school I work, the first Social Studies unit of the year for the grade 10 students centred around knowing the differing landforms of Canada and understanding how geography affects economic and population development. From what my students told me, confirmed by reports from my Educational Assistant who accompanies some students to classes, the unit was largely delivered in a lecture style format, with information being presented orally, for the most part, from the teacher. An emphasis was placed on text-based exchange of information with notes being taken from what the teacher wrote on the

whiteboard or overhead. Current Events presentations were made by students on a daily basis with the teacher connecting recent events to any historical significance in the past. The learning assignments were primarily text-based with questions taken from the information that was textbook-related, though some scaffolding was provided. Several maps were reviewed, copied and coloured, by hand, to help students learn physiographic, climate and natural regions, as well as Canada's political geography outlining provinces and provincial and federal capital cities. The culminating activity was for students to organize the covered information onto a 4 by 6 grid on an 11x17 sized piece of paper that outlined the formations, climate, vegetation, wildlife and First Nation Groups (see Appendix 1) to use on a summative test with 45 Multiple Choice and 5 Short Answer questions.

Unit Critique

As my EA and I worked to help students complete the text-based learning tasks, we observed a general increase in anxiety with many students regarding the abundance of material that was to be digested. We noticed that the students were not easily making connections between the names of regions and actual descriptions of what the area would look like or feel like temperature wise, for the people living in the area. There was a definite understanding of the area in which they resided (Ladner BC) but many seemed to have little ability to connect the information that they were receiving to actual mental or physical representations of the other regions in Canada. For example, many did not know that there was a desert like region in the interior of British Columbia let alone where the province

of Nova Scotia was located. Support staff commented however, that these misunderstandings were held by most in the general grade 10 population. What came as no surprise to me or the Educational Assistants working with students both in the Social Studies and our Support classroom, was that those students who had travelled outside of BC were able to describe more accurately the geography and climate of other regions. They seemed more imaginative in thinking about how rainfall and weather would influence growing seasons and the types of vegetation and wildlife in different regions. Students who traveled also seemed better able to connect the likely economic and population trends in the various regions and provide plausible reasons for these trends. In addition, and to the delight of educators with a social constructivist bent, it was also observed that most students seemed more interested in the stories that either the teacher or other students told about their travels and that more questions were asked in this kind of setting.

Using Grant Wiggins and Jay McTighe's UbD Template to outline the design of the unit as it was presented, clearly demonstrates (at least from a participant's perspective) that "Essential Questions" and broader student understandings were not addressed in the learning plan (see Before UbD template on next page). Teachers were honest in their desire to foster the strategies necessary to have students think critically to make connections, but the design of the unit did not support these motives. The final assessment, though comprehensive, did not result in the students demonstrating their understanding the material covered.

Social Studies 10 Physiographic Regions of Canada Before UbD

STAGE 1 – DESIRED RESULTS	
<p>Unit Title: Physiographic Regions of Canada</p> <p>Established Goals: E1 describe the physiographic regions of Canada and the geological processes that formed these regions</p> <p>E2 analyze how geography influenced the economic development and settlement patterns in regions of Canada from 1815 to 1914</p> <p>E3 evaluate attitudes and practices in resource development in British Columbia from 1815 to 1914 and their impact on contemporary resource management</p>	
<p>Understandings: <i>Students will understand that...</i></p> <ul style="list-style-type: none"> • 	<p>Essential Questions:</p> <ul style="list-style-type: none"> •
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> • physiographic information about Canada ▪ where populations have settled in Canada ▪ what resources exist in various regions ▪ what are the political boundaries of the provinces of Canada 	<p><i>Students will be able to...</i></p>

STAGE 2 – ASSESSMENT EVIDENCE	
<p>Performance Tasks:</p>	<p>Other Evidence: Quiz on the geography of Canada Worksheet Questions 6 by 4 grid on 11x17 paper of facts to use on Chpt Test Chapter Test (45 MC 5 Short Answer)</p>
<p>Key Criteria:</p>	

STAGE 3 – LEARNING PLAN
<p>Summary of Learning Activities:</p> <ol style="list-style-type: none"> 1. Colour and label the political map of Canada 2. Colour and label a map of the physical regions of Canada 3. Colour and label climate maps of Canada 4. Read the text book to find out information about the wildlife, vegetation and resources found in different regions of Canada 5. Take notes from information provided orally and in writing by the teacher

Source: Understanding by Design, Unit Design Planning Template (Wiggins/McTighe 2005)

In addition, the Grid activity, designed to be used for the final assessment, did not seem to aid in student understanding nor provide the information needed for successful completion.

It is important to note, however, that the Unit Test was not well written as judged by the teachers themselves. One teacher is new to teaching Social Studies and the other used a Test Bank that was provided to him by the department.

Unfortunately, there were too many questions written at a higher level with difficult wording and that did not clearly match the content covered. Test scores were ultimately adjusted because of the poor results across all classes.

Unit Re-design

The main focus for the re-design was to weave in several strands of the grade 10 Social Studies curriculum while creating a variety of access points for students with varying learning styles and readiness levels, emphasizing a more visual approach to content acquisition and demonstration of understanding. A constant consideration however, while planning the Unit Re-design, was to examine how what was being created could eventually be part of an on-line course. Another consideration was to choose activities that could be completed equally as well in the absence of a teacher and other students in a face-to-face environment. This goal was not addressed for the activities in general, but could be accommodated in the future, by creating screen casts for the content that would be appropriately “delivered” by a teacher.

Working with established goals from the BC Curriculum Guide, the enduring understanding that geography, especially land formations and their corresponding natural resources, influence culture and the development of society was identified in order to tease out the Main Understandings and Essential Questions. Once completed, (see After UbD template on next page), the Unit was re-designed to include as much of the original lesson-sequencing as possible with a visual twist. To this end, the re-design included **CBC's The Nature of Things** *Wild Canada* documentary series and **CBC's Rick Mercer's Atlas of Canada** video clips, one screencast about using Excel to make a Climatograph (that I made myself using Snagit) and a couple of short instructional videos. In addition, pictorial components were integrated to be part of as many assignments as possible. In particular, the original culminating "Grid" activity (Appendix 1) was expanded to provide choice for students who wished to make a Rap Song Video, an instructional video or make use of presentation software like Prezi (preferred over PowerPoint). Though the activities identified in this Unit Re-design were not student-tested, there are examples in the Video Links List that indicate that it is a reasonable expectation to do so, since they were created by students of similar age. In addition, the learning sequence activities paid special attention to the learning needs of those students with a greater interest in technology and more visual preferences in the demonstration of knowledge.

Social Studies 10 Physiographic Regions of Canada After UbD

STAGE 1 – DESIRED RESULTS	
<p>Unit Title: Physiographic Regions of Canada</p> <p>Established Goals: E1 describe the physiographic regions of Canada and the geological processes that formed these regions E2 analyze how geography influenced the economic development and settlement patterns in regions of Canada from 1815 to 1914 E3 evaluate attitudes and practices in resource development in British Columbia from 1815 to 1914 and their impact on contemporary resource management</p>	
<p>Understandings: <i>Students will understand that...</i></p> <ul style="list-style-type: none"> the kind of climate and the type of land a country has influences population trends. resource management practices dictate population growth economy and resources are connected and influenced by people in power 	<p>Essential Questions:</p> <ul style="list-style-type: none"> How does geology and climate impact where people choose to live? What is the relationship between culture and how resources are managed? How does resource development influence the economy of a given area?
<p>Students will know:</p> <ul style="list-style-type: none"> The geological processes that created Canadian landforms Population distribution and density in different regions of Canada 1800's Past and present resource development practices in BC 	<p>Students will be able to:</p> <ul style="list-style-type: none"> Read and create climate graphs for precipitation and temperature of a given area Describe the vegetation, wildlife and resources of each region Analyze the differences in population density in different regions of Canada in the 1800s compared to the present Defend a position on selected resource development issue

STAGE 2 – ASSESSMENT EVIDENCE	
<p>Performance Tasks: Act/Tell/Write/Record a story of what it is like to live in a particular region of BC and/or Canada during the 1800's</p> <p>Write a letter to a family member, describing the economy and work life of particular regions in Canada in the 1800's</p> <p>Defend/debate on resource development</p>	<p>Other Evidence: AW Math 10/11: Line and Bar Graphs Spreadsheet Physical Regions Placemat (Example Appendix 2) Geography Quizzes: <ul style="list-style-type: none"> Political Regions Climate Regions Physical Regions Canadian Regions Overview (Prezi, Rap, Video, Grid) Chapter Test</p>
<p>Key Criteria: Will be individualized depending upon student's IEP and learning difficulties</p>	

STAGE 3 – LEARNING PLAN
<p>Summary of Learning Activities:</p> <ul style="list-style-type: none"> Watch Nature of Things Series "Wild Canada" – 4 Episodes http://www.cbc.ca/wildcanada/ Group discussions focusing on what is being shown about the wildlife, vegetation, geographical and specific natural resources of different areas across Canada Partner/small group placemat activity for each Physical Region of Canada (Appendix 2) Canada Geography Jeopardy (MC test question writing practice) Information gathering population, economy and resource development – individual or group research Watch videos on Rick Mercer's Atlas of Canada http://www.rickmercer.com/atlasofcanada

Source: Understanding by Design,

Unit Design Planning Template (Wiggins/McTighe 2005)

Learning Sequence Overview

Canada as we Know it and How it Came to be:

Watching CBC's Wild Canada documentary series, interchanged with teacher-lead and small group discussion to prime students' understanding about Canadian geography and its connection to natural resources and economy and to provide historical context to what they now see. Use of Rick Mercer's Atlas videos may be appropriate in this section as well as pertinent Current Events issues.

Canada as Regions (Biomes if Science 10 included in Learning Sequence)

Having students actively investigate the specific divisions of land from geographical, climatic and political perspectives. This would be the section which teachers may address the scientific understanding of Canadian biomes as related to the LO's on Page 42 of the Ministry of Education [Grade 10 Science Integrated Resource Package](#). (Figure 3)

STUDENT ACHIEVEMENT • Grade 10	
GRADE 10 LIFE SCIENCE: SUSTAINABILITY OF ECOSYSTEMS	
PRESCRIBED LEARNING OUTCOMES	SUGGESTED ACHIEVEMENT INDICATORS
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each corresponding Prescribed Learning Outcome.</i> <i>Students who have fully met the Prescribed Learning Outcome are able to:</i>
B1 explain the interaction of abiotic and biotic factors within an ecosystem	<input type="checkbox"/> define abiotic, biotic, biome, and ecosystem <input type="checkbox"/> identify distinctive plants, animals, and climatic characteristics of Canadian biomes (tundra, boreal forest, temperate deciduous forest, temperate rainforest, grasslands) <input type="checkbox"/> identify biotic and abiotic factors in a given scenario or diagram

Figure 3

Students would be encouraged to coordinate, record and collate the information being researched and discussed. (See Appendix 2)

The Mathematics of Geography

Cover the specific concepts about data representation as related to climate (temperature) and condition (precipitation). Spreadsheet activities could be expanded to utilize functions (such as average and range) as well as to learn how to manipulate spreadsheets using the SUM function to calculate yearly precipitation totals.

Canadian People During the 1800's

Specific focus on weaving information about Canadian society with focus on how physiographic regions came into play and influenced Canada's relationship with Aboriginal peoples and immigration policies when responding to other world issues like the Irish Potato Famine.

IDENTITY, SOCIETY, AND CULTURE: CANADA FROM 1815 TO 1914

- B1 analyse Canadian society from 1815 to 1914 in terms of gender roles, ethnicity, daily life, and the arts
- B2 evaluate the impact of interactions between Aboriginal peoples and European explorers and settlers in Canada from 1815 to 1914
- B3 evaluate the influence of immigration on Canadian society from 1815 to 1914
- B4 describe the factors that contributed to a changing national identity from 1815 to 1914

Culminating Activity

Students to choose an activity (Electronic Grid with pictures, Rap Song, Painting, Instructional Video or Prezi) that demonstrates their understanding of one or more aspects of geography as it relates to historical context of resource management, culture, population and Aboriginal issues. Instructional discretion may be given to make appropriate accommodations in accordance to student IEP's. Of course, assessment criteria can be formulated with or without student input though it is suggested to have some aspect of the assignment rubric collaboratively discussed if not jointly created.

Assessment

It is hoped that various forms of assessment would be used in the progression through the learning activities but it is acknowledged that many instructors will also want to include a summative assessment such as a test that includes Multiple Choice (MC) and Written Response questions at the end of the "unit." It is suggested that students spend some time learning how to identify well-written MC questions and be given the opportunity to attempt to write MC questions themselves.

References

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- Turner, J., Turner, S. (Producers). (March 2014). Wild Canada [Episodes 1-4]. In *The Nature of Things with David Suzuki*. Toronto, ON: CBC Studios

List of Video Links

CBC Nature of Things: Wild Canada

<http://www.cbc.ca/wildcanada/>

Climatic Graph on Paper 3:26

<https://www.youtube.com/watch?v=7I5uQQTqxz4>

Climatograph Construction 1:00 + Links to Step by Step Instructions

<http://projects.cbe.ab.ca/ict/udlsci/udlscience/climate/globalSystems/notes/climchange5.htm>

Climatograph Construction 2:35 Student Example

<https://www.youtube.com/watch?v=QeRiKtgC5y0>

Climatograph Explanation 9:17

<https://www.youtube.com/watch?v=qc4IUASPMI8>

Enrichment – Comparison of Canada and the USA during the 1800's

<http://education-portal.com/academy/lesson/economic-expansion-in-the-1800s-slavery-immigration-corporations.html#lesson>

Landform Music Rap Example

<https://www.youtube.com/watch?v=KRw4855IHEY>

Rick Mercer's Atlas of Canada

<http://www.rickmercer.com/atlasofcanada>

Physiographic Regions of Canada – Prezi

https://prezi.com/ylzjx_rbixsx/copy-of-the-physical-regions-of-canada/

Physiographic Regions of Canada – YouTube Instructional Video including many Video clips of the regions across Canada

https://www.youtube.com/watch?v=_vIYbJE7iHU