Assignment #3 – Application of the 4 C's

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Background

Every year in the first days of school I find myself without a class. I teach grade 5/6 and after me, the grade sixes move on to middle school and are off at another school on the first day. The grade five component in my class is only ever a very small group of students (this year I have five grade fives out of 29 students) and so seeing as students return to their previous years class for the first day, my grade fives always sneak in with the grade 4/5 teacher's class so that I can take on the group of new students coming to our school for the first time. This is an exciting opportunity for me because it involves making that initial connection with kids on their first day where emotions range from excited to downright terrified. Typically I take the students and their parents to my classroom, welcome them to our school with a few fun activities on the Smartboard, outline some need to know information while building up how techy we are at our school and showcase how many things we do with our laptops, iPads and iPods. At the end of the presentation we go on a tour of the school before heading to our first assembly of the year.

Last year I set up a really cool activity where we used the iPods and QR codes to do our tour of the school. As we toured around to all the important spots in the school (library, office, gym, etc.) students found a QR code posted on the wall on brightly coloured paper. We took turns as one would use a school iPod and scan the code using <u>QR Reader</u> and we would all listen to information on what the location was all about. The students – though still nervous and anxious about their 'first day' were excited about the cool technology we employed at our school and the parents were impressed at how we incorporated it into our learning. As can sometimes be the case with any techy activity only about 80% of the QR codes worked and we had to 'do it the old way' for the rest. But it was a fun and exciting way to learn about the school and I am determined to make it better for this coming year.

While completing this week's readings on incorporating mobile devices effectively into our lessons, I thought of a number of ways to use the 4 Cs in my classroom. From students creating and sharing their own videos teaching others a concept in math, to using iPods to research information on a global issue and create an action plan in Social Studies. However, through all of my imaginings, I kept coming back to the idea of partnering with community groups to build a 'Welcome to our Community' type activity (reminiscent of our first day tour) that used elements of QR codes, geocaching, reporting on social media and shared learning experiences to help students build understandings and showcase our community at the same time. Now, I understand that this is not exactly a lesson plan tied to the curriculum that uses mobile learning in the classroom. However, please stick with me for a moment because I think this project has the potential of being so much more than just a lesson in Social Studies (though for the purposes of my marks for this assignment, I've outlined that, too). This project brings much more to our learning and a sense of community building through recording shared experiences, celebrating the unique attributes of our geographical location and providing a sense of history to the

users of our park. Elements of this project also reach outside of the four walls of our school and into the community – educating not just our students but visitors and residents as well.

I guess this is where I need to explain exactly where it is that I'm talking about.



I teach at Cultus Lake Elementary School, located within the City of Chilliwack in British Columbia's Fraser Valley. Our little school is nestled in amongst trees and trails and is within two blocks of the lake, world class waterslides, a golf course, two adventure theme parks, a campground and a strip mall. All of this (including residences and other small businesses) is located within Cultus Lake Provincial Park – yes, we live, work and play in a park and it's great! Though our population balloons in the summer when people from all over the lower mainland come to Cultus Lake

to camp, swim, waterski, hike, golf and play, our population during the rest of the year hovers around 1100 people (<u>Census, 2011</u>). A <u>traffic study</u> conducted by the Fraser Valley Regional District in 2011 found that at peak times in the summer upwards of 680 vehicles a day come into Cultus Lake, with that number jumping to 1400 cars on a long weekend. Even estimating a conservative average of three people per car, that's almost 2000 visitors per day!

Many of those families simply spend the day at main beach or the waterslides, though a number of them (particularly on the weekends) camp at the variety of campgrounds that can be found along the lake. Lazy days swimming, reading and relaxing on the beach are the norm, but what if we could educate our visitors and provide them with a bit of the history of Cultus Lake, too? And of course, in doing so we could tie our learning into what we teach about community at the school. Surely a developed understanding of our immediate surroundings could only lead to a deeper understanding of the world outside our door and with the technology available to us today, we can take our learning to the next level using geocaching, (perhaps) augmented reality and social media. Let me try to explain how.

Overview of Activity – Outline of lessons

This project would happen in three parts, gradually moving from within our school walls to exploring more of the surrounding area. Initially it would be directed to new students at our school and their families but can include existing families and residents at the lake and visitors as they come and go.

Activity 1 – Introduction to our School (school based – synchronous)



For our first lesson, we would use iPods and QR codes that have been set up using <u>http://qrvoice.net/</u> This website allows the information to be typed in and 'spoken' (by a computerized voice) when the user scans the code using the <u>QR Reader</u> app. With each code students would gather information about different locations within the school, as well as things that a student might do there or people that they might meet (ie Welcome to the library. You will come here once a week with your class to sign out books, do research for a project or listen to Mr. XXX read a story). Text on http://qrvoice.net/ is limited to 140 characters, but typically that is enough

to get the general idea across. By sharing iPods and having students find their way to the next spot (perhaps a voice prompt could say – 'Now you should try to find the office across the hall from the library'), the entire tour of the school should take about 30-45 minutes. In years past we have done a treasure hunt type activity where students had to collect a letter from each room to unscramble a phrase at the end of the tour. Instead, students could be required to choose one location in the school and create a short video (might be difficult without signed permission forms) or post about what they found in each location. In this way they would be gathering content and capturing and communicating their experiences. By having to collect an artifact or perhaps take a picture of a key piece of evidence (or maybe just a letter to keep things simple) they could also compute the answer to a problem at the end of the tour.

Activity 2 – Introduction to our Community (school then family based – synchronous and asynchronous)

Splitting the school into groups of 8-10 students with an adult helper (teacher or EA), we could send each group to a different location on a 'master' map that marks significant locations near the school. The purpose of this activity would be to use a geocaching app on the school iPods to find a sign or some sort of marker containing information on the historical significance of the location within the community (ie, where the roller rink used to be, where the sailing club headquarters are, where former Sto:Lo settlements were, where the fish hatchery is, etc.). Once there, students would find a link to a video that would help them to learn more about the significance of the spot. After watching the video, they could have a quick group discussion on what they've just learned and add any personal experience to create meaningful and relevant shared knowledge of the location. After the discussion, students could choose to provide evidence of their learning in a variety of ways. First, they could record a voice memo for themselves to prompt a writing piece or blog post that could be completed as homework on their personal website. Also, they could make a quick video explaining what they've learned and post it to a social media site (our school uses Facebook primarily but Instagram or Twitter could also work). As an extension activity, students could choose to interview someone they meet along the way to create a post for a 'Cultus Lake Memories' part of the master website that this would all need to be linked to (due to the nature and number of young people partying in Cultus Lake it's probably going to be a good idea to have these comments vetted before allowing them to be posted). In any case, there would be

evidence of students gathering or accessing content via linked websites, capturing their own understandings and communicating them to others. Again – creating a 'treasure hunt' aspect to the markers where students had to complete a task or solve a problem would allow them to include the compute part of the 4 Cs (more on this in the next activity)

Activity 3 – Further Exploration of Community Extension activity (family based - asynchronous)

This is where learning will expand to more than just our students, though they could definitely still participate. Being open to the general public, these activities would allow for further shared learning experiences and gather a wealth of knowledge of the history of our community (curation of which could be a further activity for some of our older and more techy students).

A 'master' map could be found on the site of the school grounds (for use during the summer months while families are staying and playing in and around Cultus Lake) while mini signs could be the markers at various locations throughout the park. The markers would house a variety of information, including historical events, geographical data, QR Codes that would link to pictures of the area over time, as well as links to a website with further information about issues or concerns in the area (logging, endangered species, various plant life to look for, etc.). Information could also be shared inviting people to post to a Facebook page or use a hashtag on Twitter to say 'we were here and this is what we learned or found.' Again – requiring students to solve a problem in order to access information could make this a fun and challenging activity.

Though as a school we might only visit the closest 10 sites in the second part of this project, the markers in this third phase could be located at a greater distance from the school and include some popular hiking areas (Teapot Hill, Seven Sisters, etc.) and other recreational areas or areas of significance (Maple Bay, Lindell Beach, Columbia Valley, Soowahlie Reserve, etc.) That way as families find themselves in and around Cultus Lake they can expand their knowledge of the entire area and its history. This also allows for groups trying to complete all aspects of the 'treasure hunt' as well as those just simply going for a day hike and finding a sign and following links to learn more.

Two main components of this project will include the 'master' map and the website that would need to house all of the content (perhaps an expansion of the existing <u>Cultus Lake</u> site) with links to social media sites to record memories and posts. In order to reach more people, it would be more effective to house the information on a website that would be viewable on both Apple and Android devices, rather than investing a lot of money in developing an app that would only work for one or the other.

In terms of the map, a durable, all weather map of the Cultus Lake area with markers indicated on the map could be posted outside of the school to be accessible to students, residents and visitors alike. This display would provide background information on the project, a link to the website to help start their search and directions to find the nearest markers and learn more about our area (perhaps small pamphlet size maps could be made for distribution, too).

I envision the website as being the hub of all the information that could be found, with separate tabs for each marked site containing location information, historical pictures (using augmented reality in the near future, perhaps, to compare what people are looking at with old pictures of the same view), links to organizations that are working to maintain the area or keep it clean (ie. 'adopt a trail' type organizations) and an area where people could post texts or videos of their personal memories or experiences.

Again, there are elements of accessing content, capturing new or shared knowledge and communicating it with others. Traditionally our school would take students on walks and hikes in the area immediately surrounding our school and point out different plants, mountains or streams, but this project would allow students to explore on their own and make their learning meaningful as they worked their way through finding the different markers. This also speaks to the anyplace, anytime aspect of their learning as they could participate in this activity anytime throughout the year when they found themselves hiking with friends, walking the dog or camping at the lake.

'Treasure Hunt'

In order to make this a truly engaging activity where students and their families would not only have to find the markers, but also solve some sort of riddle or problem, we would need to develop some sort of themed challenges to work through. Initial ideas could be:

-to access information on main beach activities, students would have to find the perimeter of the swimming area within the docks using non-standard units of measurement. Links could lead users to student created videos on what non-standard units of measurement are (like strides) and how to find the perimeter of an object.

-to access information at Teapot Hill users would have to watch a video on how it got its name and then answer multiple choice questions on the video that would then allow them to learn what mountains they were seeing when they looked out from the viewpoint.

-to access information in the trails behind the school students might have to identify three different types of leaves found in the area. Links could then be provided to sites that would explain the significance and uses of cedar trees to local First Nations people.

By using a survey type platform to 'unlock' additional areas of the website, the element of fun is added while students and their families use their background knowledge and their computing skills to access more information. Alternately an app like <u>Socrative</u> could be used, however it would only be to determine if the answers were correct and would not be tied to unlocking further content.

In order to further the communication element, people could also post 'getting close' pictures to aid others in their search for the markers. And of course people could solicit help on social media – asking others for answers or hints to finding markers on <u>Twitter</u>, <u>Instagram</u> or <u>Facebook</u> and receiving, sometimes, instant responses.



Background/description of academic area being focused upon

I have largely based this project on elements of the Social Studies curriculum for grades 1-6 (a full list of related outcomes is included in the next section). Areas of learning focus primarily on mapping and the physical environment, as well as developing an understanding of community and social relations.

However, aspects of various other subjects could also be included. For instance, students could create blog posts or other pieces of written work describing their experiences (Language Arts), be required to prepare a presentation on one of the marked locations to be included on the website as background information (Social Studies as well as Science (plant life, life cycle of the salmon, indigenous animal species, etc)), develop and/or answer problems using existing math skills (perimeter of the docks, distance between markers, add up menu items to see how much change they would get, etc), record exercise for the Daily Physical Activity allotment, set goals to find all the markers (Personal Planning) and so on. This would be a cross-curricular activity that could encourage lifelong, shared learning and highlight the importance of both written and oral histories. And it would be a great example of a collection of data that, put together, created a shared history of the land.

In the interest of getting a good mark, I've included some PLOs from the BC Ministry of Education Curriculum packages to highlight some specific Social Studies outcomes that could be covered by the many aspects of this project.

Learning outcomes directly linked to activities/assignments/project

As previously mentioned, there are a variety of ways to link the elements of this project to the <u>curriculum</u>. The following PLOs stretch across a variety of grade levels (remember, this activity would encourage *families* to get out there and search for the clues and historic places around our community, therefore children in a variety of grades could potentially be involved in the search).

All of the following are Socials Studies outcomes:

Grade 1	Use picture maps to identify familiar locations in the school or community
	Gather information from personal experiences, oral sources, and visual representations
	Present information using oral, written, or visual representations
Grade 2	Interpret simple maps using cardinal directions, symbols, and simple legends
	Create simple maps using familiar locations
	Gather information from a variety of sources for a presentation
	Identify changes that occur in the school and community throughout the year
Grade 3	Apply critical thinking skills – including questioning, predicting, imagining, comparing,
	classifying, and identifying patterns – to selected problems or issues
	Identify a variety of symbolic representations
	Use simple maps to interpret and present information
	Describe the importance of communities
	Assess how technology affects individuals and communities
	Locate major landforms and bodies of water in BC, including – locally relevant examples
	(ie Sweltzer Creek, Cultus Lake, Vedder Mountain, etc)
	Demonstrate a sense of responsibility for the local environment
	Describe how the physical environment influenced early settlement in their local
	community
Grade 4	Use maps and timelines to gather and represent information
	Create a presentation on a selected historical event or topic
	Distinguish characteristics of various Aboriginal cultures in BC and Canada
	Identify the significance of selected place names in BC and Canada
	Describe Aboriginal peoples' relationship with the land and natural resources
Grade 5	Implement a plan of action to address a selected school, community, or national
	problem or issue
	Analyse the relationship between the economic development of communities and their
	available resources
	Explain why sustainability is important
Grade 6	Interpret graphs, tables, aerial photos, and various types of maps
	Evaluate effects of technology on lifestyles and environments

Again, many of the outcomes are tied to mapping and reading maps or identifying landforms and local bodies of water. Students and their families would have the opportunity to develop deep understandings of the area surrounding Cultus Lake and identify ways to promote positive stewardship of the resources and natural areas.

Further outcomes surrounding using technology to communicate their understandings or defend a point of view could be found in the Language Arts curriculum.

Representation of the 4 Cs - content, capture, compute, collaborate

Content – Content includes the media, documents and information where information is gathered from. In the case of this project, information would be housed on a master website and the sites that were linked to it. This would include information on where to find markers in the Cultus Lake area, but also what is significant about each location, historical documentation and pictures/videos and personal accounts of the local history. A geocaching app would help locate the specific markers and would need to be used to guide families on their search (it would be important to choose free, sustainable geocaching apps for both iOS and Android in order to ensure access to the majority of people and markers would need to be created and maintained within each app (as well as at the site itself)). Also included would be necessary considerations when using the amenities (for instance, is there someone responsible for cleaning the trails, what are some safety considerations to consider when swimming at main beach, what animals should you be aware of hiking in the hills surrounding the lake). Further links could also provide information about what could be done about a local issue (Sockeye Recovery Program, increasing accessibility to the lake for those with disabilities) or community groups people could join.

Student or resident/visitor created content could also be included in the social media aspect of the project, where experiences, memories or known histories could be shared via Facebook or Twitter regarding each specific location.

Capture - Capture includes collecting data or information from the environment using various media or information from sensors. Students and visitors alike would be capturing their experiences of visiting the marker or site using pictures, voice or video recordings. Examples might include pictures of them near or at the marker ('we found it!') or a video of their experience ('my memory of main beach was when...'). Students could collect samples of leaves that they found to research later or record ideas that would help them write a blog post about finding the marker, something that happened along the way or something else sparked by the experience of being out and about in Cultus Lake. The GPS (or a geocaching app) in the device that they used would help them to locate the posted markers and an app like <u>Google Earth</u> might help them to measure distances between themselves and other markers or areas to explore.

Compute - Compute involves being able to use apps and programs to help solve problems or perform calculations. It also speaks to information users would need to help them find answers. In this case, users might use Google Earth to help them find the cardinal directions based on their location or calculate distances on a greater scale (ie from the school to the Teapot Hill trailhead) to help build a better understanding of distances as well as provide reference information for families planning activities for the day. They might also need access to videos on how to solve a problem given at each location (for instance the perimeter of the swimming area example given earlier – a link to videos providing information about what non-standard units of measurement are or how to find the perimeter of an object (fantastic if these could be student generated) would help them to figure out questions presented). And of course, the built in calculator, converter and media capture apps could provide them with the necessary tools to gather and store information.

Communicate - Communicate speaks to the ability to reach others and share your experiences using various media. In this project students would be able to share evidence of their learning by posting their pictures or videos to the website, a Facebook page or via Twitter or Instagram. They could also use social media to gather support along the way by asking for help finding a specific marker or getting more information on their location from previous users.

And a 5th C that I think should be included:

Collaborate – The basis of this project would be shared learning and depend on students working with their parents, friends or others (remember those 'getting close' hints in the form of pictures near to the markers). The information collected (on the website and social media sites) would be a collaboration of residents, community groups, visitors and students from the school to create a shared knowledge and history of Cultus Lake. And tasks or problems given at each marker (perimeter of the swimming area, clean-up of the trail, distance to the Waterslides) could require groups to work together to develop understandings and achieve a common goal. This is a very important part of the learning process and would help everyone to build knowledge and understandings, regardless of their ability or prior experiences. Further, by collaborating with others via social media apps – groups could find markers successfully and give each other feedback.

Selection and appropriateness of App

A variety of apps have been chosen for these activities. They include:

Geocaching Apps – a variety of apps could be used here, <u>Geocaching Toolkit</u>, <u>Geopher Lite</u>, etc. These would help students/families find the markers as outlined on the master map. Again – it would be important to choose free (family friendly) and stable apps for both iOS and Android platforms to enable the majority of people to participate. This would also involve setting up the geocache sites ahead of time.

<u>QR Reader</u> – coupled with premade codes on <u>http://qrvoice.net/</u>, students would be able to listen to information about the specific location to understand what it was they were looking at and the importance of the location within our school or community. QR Reader provides quick and easy access to information via linked websites as well, and this sort of information could be included along the trails and at different sites through the Cultus Lake area. (FYI cell coverage is decent in and around the Cultus Lake area – I've been known to post pictures and comments on Facebook from my kayak in the middle of the lake and from the lookout at the top of Teapot and the trail marker halfway up).

Camera/Video/Voice Control – Students could capture examples of their learning using the video or camera function on the device they were using or save notes for later to prompt them in writing tasks or embellish their work

<u>Twitter/Facebook/Instagram</u> – a way for students to post information about the marker they have just found, share evidence of their learning and experiences or solicit help from others in their travels. (accounts would be required, though a number of our students and even more of their parents already have social media accounts they could use.

<u>Google Earth</u> – help students find their location as well as ways to the next marker, plus measure distances and directions and identify local attractions.

As well, a master website (again, accessible by all devices regardless of manufacture) would house the information found for each location and links to access further information. This is yet to be developed but could possibly work off the Cultus Lake portion of the existing <u>tourism Chilliwack</u> site.

Summary

Wow – what a project outline! Again, though not specifically tied to a lesson in the classroom, this project has elements of social learning, use of technology, curricular objectives and the use of the 4 Cs in terms of mobile device usage. Though I've really worked outside the box (or outside the four walls of our school, for that matter) for this project, the learning starts within the building and branches out to reach members of the community as well as summer visitors to the lake. Examples of problem solving, sharing learning, building knowledge and creating evidence of that learning to share with others via social media is evident in all activities, as are elements of the 4 Cs of mobile learning.

My apologies if I've gone too far off the beaten track in this assignment, and I know I've written quite a bit about the possibilities and scope, but in the end I found it to be exciting and relevant to my teaching experience at our school. I think I may have found my next project and will look to develop this further – AFTER I've completed my master's.....

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Photo Credit: Cultus Lake from the beach at Sunnyside Campground, Kris Sward (2013)