

# OLTD 508 Major Inquiry Project

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## Guiding Question

*Can m-learning and/or game based learning be utilized to effectively implement the new grade 10-12 Career Education component of BC's new curriculum?*

## Overview

I chose this particular question as the prompt for my inquiry due to the possible impending deadline to implement the new BC education curriculum in grades 10 through 12, and the changing requirements for Career Education outlined in the draft documents published by the ministry. Some of the notable points in the new programme documents include :

- Delivery models for these courses should enable flexibility and choice and match the school, students, and context.
- Students will create their plans drawing from other areas of learning and courses, educational and/or life experiences, and through information gathering and research.
- It is highly recommended that these courses include classroom instruction, mentoring, community and work experience, and independent learning....
- The proposal is that both courses are to be graded (no longer 'requirement met' but resulting in a letter grade).
- The revision of Career Education courses at the secondary level, ... is one focused on flexibility and choice that is supportive of local contexts.

*(Career Education | Building Student Success - BC's New Curriculum , 2018).*

Given the requirement to provide letter grades, there seems to be a more stringent reporting requirement being implemented which would entail recording more definitive evidence of learning and participation on the part of the student. A blended learning approach would seem to be an appropriate solution to implementing career education based on many of the points above.

Given the flexible approach to delivery suggested above, I want to investigate whether mobile learning and game based learning could be effective components of such a course delivery model. I envision developing insights on features that would constitute engaging content capable of stimulating student interest in career education research, researching current mobile and game based career education resources, and, if time permits, proposing components of an ideal career education programme.

## Why mobile learning?

Firstly, mobile devices are becoming ubiquitous, a February 2018 report by Pew Research indicates that 95% of US adults own a mobile phone of some sort, 77% own smartphones, 53% own smartphones but have no broadband internet at home (Pew Research Center ,2018). The mobile handheld device is fast replacing even laptops at the computing device of choice.

Today's students are growing up in a mobile world, mobile devices are being used in business, they are references at work, navigation devices, gateways to repositories of knowledge. These are devices that, while they may at some point be usurped by other wearable or embedded tech, are part of the employment and learning scene that we are preparing our youth for. Already, m-learning is becoming prevalent in industry and business environments and is in turn filtering down into higher education and presumably from there in to K-12.

A 2017 article by Carmine Gallo published in Inc reveals why Ted talks are only 18 mins long. *'According to TED Talks curator Chris Anderson, 18 minutes is "short enough to hold people's attention, including on the Internet, and precise enough to be taken seriously. But it's also long enough to say something that matters."'* , and also presents research from biologist John Medina .... *"Medina has found that--given a topic of moderate interest--people will begin to tune out after approximately 10 minutes."* (Gallo,C. 2017). Mobile learning can effectively deliver short, engagement bursts of learning material to students at their own pace and delivers it anywhere. Furthermore , *"Compared with other forms of educational resources, micro lectures integrate text, audio-visual components and multimodality into classroom teaching and break the complex body of knowledge into more fancy fragments to promote learners' interest and enhance their understanding. Moreover, because of their advantage of being in small bits, micro lectures can be easily transmitted, downloaded and replayed in a variety of ubiquitous equipment."* Xiangyang Zhang\*, Jie Xu, (2015)

An article written for the SkillBuilder LMS blog contends that while there is no evidence that attention spans are getting shorter today, *"...there is increased competition for that attention than ever before."*, and that we should : *"Engage your millennial learners by delivering bite-sized nuggets of information (ie. small learning activities they can complete in 5 minutes or less) they can easily incorporate into their day."* ( Carson, S. 2017 ).

Current students seem disconnected from traditional career education delivery, due to dry, often unengaging and lengthy material. I therefore envision utilizing engaging, bite-sized career information through m-learning delivery methodology to allow students to develop understanding of themselves, careers and paths that lead to future personal and job satisfaction.

## Why game based learning?

In an article published on Classroom Aid, Justin Marquis explains; “ *The entire premise behind games is that they allow those playing them to experience simulations of reality that can replicate real world circumstances, and theoretically can elicit the same emotional and learning responses in the brain as actually doing the real activity.*” (Marquis, J. 2012). He goes on to explain that the agenda of games and play is to teach, games are fun and games with rules motivate humans through their competitive nature. “*For all of these reasons, GBL works to engage students in ways that are more powerful for most students than traditional teaching methods....*” (Marquis, J. 2012). These are prime examples of how GBL could be applied in a blended learning environment to engage students in exploring career and postsecondary education options. The challenge of course will be discovering appropriate games that strike a balance between fun engagement and serious learning outcomes.

## Other factors

In discussing current career and postsecondary options education with present students and alumni, the general, anecdotal, feedback is that career education is currently not well delivered. The material is considered a bit of a chore to get through and does not adequately inform highschool students, in a meaningful way, of the reality of careers and tertiary education.

Many people have responded favourably to a suggestion that we host live video interviews with graduates from a wider variety of careers and tertiary education programs. These might be semi-structured in having three or four standard pre-set questions to introduce the speaker, then allow reactive questioning from audience members. With permission, these would be recorded to build a library of meaningful resources, which would be subject to student commenting, tagging and approval votes of some sort. Additionally, these types of resources lend themselves to mobile delivery.

This would take time to build, but if carefully designed and curated, could lead to a meaningful, reinforced library of connected resources with relevance to future students. Since, at a secondary level, we keep hearing that we are educating students for jobs that do not yet exist, it is particularly important to create a system that can react quickly to a changing career market through continual updates and fresh perspectives. If schools can somehow leverage their graduates through online communities, they can potentially develop a wealth of post secondary career and education information and contacts. Mobile connections would be a huge facilitator of such an initiative.






During my inquiry, I discovered a paper that reinforces my view that career education in schools needs to “ramp up” and embrace more engaging mediums. In the abstract it states *“Choosing a career is one of the most important decisions that youth has to take but many young people find this a hard issue to engage with. Current career counselling practice does not appear very compelling or motivating to young people. Professional games could provide a more engaging and motivating way of acquiring professional awareness and competence for career decision making and learning.”* (Hummel, Boyle, Einarsdóttir, Pétursdóttir & Graur, 2017). Later the paper elaborates, *“For many young people however, current career counselling practice does not appear to be compelling or motivating (Amundson,2003;Loven,2003). We need more engaging and active ways of supporting youth in career decision making, ways that are more aligned with their real life learning.”* (Hummel et al,2017).

Searching for true serious games yielded very few high quality hits in terms of action type games, most career style games seem to be “gamified” quiz style environments that attempt to determine personality traits and opinions, then provide examples of possible career choices. Of the more game like offerings, none of the ones I evaluated gave me supreme confidence that our students would find them beneficial. Some examples that I played with include :

- Whyville : <http://b.whyville.net/smmk/top/index> ACT Career Club, browser based.
- Future Bound from USC ( University of Southern California) Game innovation Lab : <https://s3.amazonaws.com/application-crunch/Futurebound/Futurebound.exe> OSX and Windows
- Graduate Strike Force from USC : [https://s3.amazonaws.com/application-crunch/GSF/Graduate+Strike+Force+\(OSX\).zip](https://s3.amazonaws.com/application-crunch/GSF/Graduate+Strike+Force+(OSX).zip) OSX and Windows
- Youth @ Work: <http://tinyoaks.ictthatworks.org/game/JFLWebGL/> *“...developed as the main deliverable of the [YOUTHYES](#) project”* (Hans G. K. Hummel et al, 2017) Browser based
- Good&Co : <https://good.co/app/> . Web app runs in browser and available for Android and IOS.

Whyville ACT Career Club, is a section of the browser based game “Whyville” which is best described by their “about” page : *“Whyville is a virtual world where children ages 8 to 15 play, explore, create and learn together. From solving math puzzles to protecting coral reefs, from programming robots to running virtual businesses, Whyville's citizens, known as Whyvillians, collaborate, compete and share while engaging in 100+ games and activities. Whyville has a currency (clams!), an economy, a newspaper (The Whyville Times) and even a Senate. The richness of the virtual world fosters creativity, initiative, critical thinking and entrepreneurial spirit, all within a safe, monitored environment.”* (Whyville Games, 2018). 15 years is the upper edge of the game range and, while I could see it possibly being useful if the game had been



integrated into curriculum from age 7/8 , it feels far too young for grades 10 through 12. It certainly seems like it would be difficult to implement as a major component of a career education course.

Future Bound and Graduate Strike Force are both modelled along the same lines, a more interactive steering environment with mini games within the main theme styled around defeating opponents. The former more is geared to junior grade levels, introducing academic prospects and career possibilities, the latter more geared toward postsecondary choices involving, not only academic program quality, but also self fulfillment and financial planning. The game environments are certainly far more engaging than Whyville, though I'm still unsure if the content overall is more useful in preparing students for the future. Since haven't been able to fully traverse all the scenarios in the time available, I am still leery of integrating these into a formal lesson plan at this point, however, I believe a student evaluation would be a wise experiment.

Youth@Work is another interesting product as it arises out of an academic research project funded by the EU aimed at improving career and education learning. The game itself adopts similar underlying investigative tactics as more text based environment to accumulate information about a student's personality and preferences, but does so in an engaging playful manner. Along the way, a number of challenges are presented part of which are providing the data the program requires. At the end you presented with a profile and list of compatible jobs from the database.

Good&Co also utilizes questions to build profiles of you, but does it in a more gamified than game-based system. It is essentially a website with features layered in levels where you have to "level up" to access the next phase by earning tokens. It also allows you to build links to social media accounts, other members of the Good&Co community and to well known companies. The environment is actually very engaging and collects information through a wide range of questions, if you can't answer the first question, you can obtain different wording which may ease your choice. Given it's higher level interaction with services such as LinkedIn and its cadre of employees from large corporations, it feels like it might be useful for grade 11/12 students to try out. Again, live student trials are the only way to really see if it would be appropriate in a school, it certainly seems ideally suited to people already in the workforce or at postsecondary institutions due to the networking features it provides.

One other game based environment which seems to have potential is by a Canadian company, Career Cruising, who's research, text based product is currently used by the school. The Real Game has been adapted for use in many countries including NZ, on which country zone academic site I found the first reference to it, and the UK where I was able to locate a self-running demo which suggests the game may provide a useful medium to energize career learning. Alas I have not yet been able to secure a demo licence, so it will also have to wait full evaluation.

Other facets of planning for careers and future endeavours are financial planning and in that regard I discovered Forward Vision Games, a Canadian company who have a financial education simulation game that claims to address financial concepts. I also discovered the H&R Block “Dollars and Sense” and “Budget Challenge” programs, which aim to teach teenagers financial literacy. While currently unavailable in Canada, I intend to discover more about these programs too and see if the Canadian business division has similar offerings.

## Mobile Learning

While game based learning has the potential to keep students on an investigative task for a prolonged period of time, m-learning has the potential to keep them engaged through bite-sized activities at a time and place of their convenience.

In researching possible techniques in this area, I was particularly interested in the possibility of somehow connecting students to real people with experience. The vision being to have video chats and recorded video sessions that would be short, but meaningful. I was excited when I stumbled upon Start, a career and education planning program in the UK which is extremely comprehensive. Hidden away was a link to “Three minute hero”, a collection of roughly 3 minute videos, made by volunteers, to inform students about their careers. As an example :-

<https://zimovi.com/channel/Start/player/video/cdcdd2ead9e09147?autoplay=true> (Amber Haslam, 2018)

These were exactly the type of less formal, quick bite resources I suspected would be beneficial. Of course these have a very British slant, but they show what can be achieved.

I discovered other bite-sized resources that demonstrate the concepts of quick m-learning in a 2016 e-learning article by Steve Penfold, in it he states : “A study from the Rapid Learning Institute found that 94 percent of learners prefer modules less than 10 minutes in duration (particularly for soft-skill topics), and 65 percent said most online training modules contain too much information.” and “This means that there’s always something vying for a Millennials’ attention, and if their current task is taking too long or doesn’t actively engage them, they’ll soon move on to something else. “. To combat attention span issues , “... module contains a small nugget of information that can be completed easily in under 10 minutes. Modern learners love this type of training because they can quickly complete each nugget without being distracted.” (Penfold S.,2016). Examples of such “nuggets” are :

<http://www2.open.ac.uk/openlearn/to-lie-or-not-to-lie> ( OU To Lie Or Not To Lie, 2018) and

<https://learning.elucidat.com/course/563372f8bc6a3-5652e5c9cecd4> (Environmental Awareness, SHOWCASE, 2018)

Most of the m-learning snippets I discovered utilize video and images to engage learners and quick quizzes to reinforce learning and provide some sort of tracking or reward



system. Many of these use badge and award systems, while some more sophisticated ones provide extensive scenario based feedback to reinforce learning objectives. None of the material I was able to access directly addressed career education in a Canadian context, but based on the material I discovered, I believe it's possible to build and/or obtain material from community connections and/or commercial learning systems.

## Practical Examples

No inquiry would be complete without something concrete to show for the effort. Here is a very sketchy example of a possible m-learning micro assessment. In this, the video shown was created via a YouTube Live Hangouts on air. The subject being interviewed was connected via their mobile phone, while the interviewer was conducting the interview from a laptop. The lesson was delivered via google forms which was setup as a quiz and required an email address be supplied to :-

a) identify the learner and

b) to send the learner a badge if they successfully completed the quiz.

The badging system utilizes a google script to check the learner's score on the quiz when submitted and, if above the threshold, deliver a badge file to the learner. If they fail to acquire the required points, the form link is sent to them so they can try again for mastery.

<https://goo.gl/forms/KPI33hnFB6mYbtID2>

Further research into integrating the badging with a collection and display feature will be required in order to provide central accountability for achievements, as well as motivate students to revisit learning modules and gather more awards.

## Conclusion

While my research was not definitive in providing a fully implementable careers education experience based on the two delivery methods I was attempting to use, I feel that I have made positive progress toward that ultimate goal. Further inquiries regarding commercial options are currently underway and I foresee pursuing this project in greater detail as part of my continuing studies. This initial dive into exploring the options was focussed on trying to leverage free and open resources, and, while I still have to explore my concept of building a self-supporting alumni career resource system, I must also turn to more in-depth analysis of the commercial options and their engagement factor.

The ultimate goal is to make career and postsecondary planning an engaging and rewarding experience that students have a desire to participate in. Finding the "hook" that draws them in will be crucial to initial buy in while rigorous, well informed, fun activities

that truly develop the learner's skills will define the ultimate success of the program. To this end, no stone should be left unturned.

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## Other Resources

Whyville ACT Career Club : <http://b.whyville.net/smmk/top/index>

Future Bound from USC : <http://www.gameinnovationlab.com/>

Graduate Strike Force from USC : <http://www.gameinnovationlab.com/>

Youth@Work YOUTHYES project (Hans G. K. Hummel et al, 2017):  
<http://tinyoaks.icthatworks.org/game/JFLWebGL/>


Good&Co a self-discovery platform and network for a new generation of professionals looking for more meaning in their careers : <https://good.co/app/>

Forward Vision Games : Forward Vision Games (FVG) is an educational technology company and social enterprise. FVG creates financial simulation games that teach financial skills and build financial capacity in people and communities. FVG has focus on Indigenous students and First Nations across Canada : <https://www.forwardvisiongames.com/>

H&R Block: <https://hrblock.budgetchallenge.com/> <http://www.hrblockdollarsandsense.com/>

Start; is a free and comprehensive digital platform, offering schools and colleges a single starting point to help simplify and improve careers guidance in schools. : <https://www.startprofile.com/>

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