G SUITE: INCORPORATING THE MULTI-FACETED COMMUNICATION HABITS OF GEN- Z INTO OUR TRADITIONAL CLASSROOMS

by

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Abstract

Do the ways in which our students interact in *real life* need to be *switched off* when they enter our classrooms? Our Generation-Z students communicate with one another in real-time, giving immediate responses within seconds on their social media sites, personal devices, and group chats anywhere on Earth that has an Internet or cellular network connection. How might it be possible to meaningfully integrate these multifaceted communication skills in our classrooms?

The purpose of this inquiry was to investigate how the use of the free, online G Suite applications of Google Docs, Google Drive and Google Slides, effected student engagement and collaboration. Furthermore, I examined if a virtual workspace could be a practical solution to the lack of resources that restrict the current teaching and learning process in the limited physical confines of a traditional classroom. It was important to start this project with a focus on digital literacy and citizenship to ensure that my students would be able to employ their Web 2.0 skills and strategies in a respectful, responsible, and safe manner.

Over the course of one year, two Social Studies 11 classes within the Vancouver School District participated in my research. My students played an integral role in experimenting with G Suite and providing feedback on their experiences throughout the project. To monitor student collaboration and engagement, results were gathered through ongoing observations of student work, online chats and discussions, focus groups, reflections, and a summative survey with the participants.

Overall, my students were more engaged in the group activities and more connected to their fellow classmates. They reported that using Docs and Slides mirrored the way that they connected to others in their everyday lives through social media: fast, immediate, real-time, and networked on group chats accessible on a variety of devices ranging from their smartphones to

computers. My research suggests that incorporating online collaboration into our traditional classrooms increases student engagement and positive group collaboration while fostering a heightened sense of belonging and community.

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Introduction

I am one of the lucky ones. Not knowing what they were truly meant to do in life, many people settle for careers that bring them financial stability, but lack personal fulfillment. I always knew I wanted to be a teacher. This conviction began with the love for the process of education. If I could be a full-time student for the rest of my life and get paid for doing so, I would jump at the opportunity! As an educator, the processes of teaching and learning are equally as rewarding. My life experiences have shaped both my passion *for* and my style *of* teaching. Since my teaching practicum 10 years ago, I have gained invaluable experiences that have led to both personal and professional growth. I have enjoyed an enriching learning journey, which continues to evolve and grow and for that, I am thankful.

With the new curriculum rolling out in British Columbia, I have hope that there will be positive changes for our students, teachers and our education system. Focusing on 21st century learning and teaching will be beneficial for both students and teachers alike. There will be many challenges in implementing change in our schools and developing resources to fulfill the goals of the new curriculum. This Master's program in Digital Learning and Curriculum, has given me a well-rounded perspective on 21st century learning and what it should *look*, *sound* and *feel* like in our classrooms.

Inquiry Project Description

Purpose

How can technology be utilized to enhance student engagement within the limited physical confines and resources found in a traditional classroom? As a teacher standing in a classroom in which I was a student fifteen years prior, teaching from the exact same textbooks I read as a student, I felt that our curriculum was long overdue for a change. As an educator, I felt obligated to pay more attention to the 21st century learning styles and needs of my students. To increase student engagement by fostering the communication styles of Generation-Z, I searched for a cost-effective web-based software that could be utilized given the minimal devices I had access to at my school.

As a Secondary School teacher of Social Studies and Law, one of the most important core competencies is to teach students to become active and socially responsible citizens. Since our 21st century learners are fully immersed in the digital world, it has also become imperative to educate our students about digital literacy and citizenship. Digital literacy can be defined as the "ability to understand, evaluate, create, and integrate information in multiple digital formats via the computer and Internet" (AASL, 2009, p. 240).

Many of our 21st century learners do not have the knowledge to safely navigate the digital world. I first became interested in the topic of online safety when I overhead my students raving about a new website, called Chatroullette. Individuals can sign up to video chat with random people across the world for a specific duration of time. Although my students were having fun chatting with strangers, they did admit that at times they would see inappropriate scenes taking place in some of the video chat rooms. As this discussion continued, the boys in my class began talking about how they also talk to strangers while gaming on the PlayStation network. What

alarmed me was that during these conversations with strangers, they were divulging personal information without even knowing it. Their naivety was shocking. This was a disheartening example of why there is a colossal need to educate our youth on how to use the Internet and interact with others online in a safe and responsible manner. Developing 21st century life skills, such as communicative, collaborative and digital literacy, will teach our students to self-regulate the appropriate use of the Internet and become mature digital citizens. Instead of being impulsive, students will first reflect on the implications of their actions.

As British Columbia transitions to a new curriculum that involves a paradigm shift to student-centered learning, new resources will inevitably be required to meet the new standards and expectations. As educators, we need to consider the ways in which our 21st century learners access and comprehend information. Outside of the classroom, our students communicate with one another through instant messaging on various web-based apps found on their mobile phones and devices. Our students should not have to turn off their devices when they step into the classroom. Instead, to enhance engagement and the overall learning environment, we must find ways to incorporate the collaborative ways in which our students communicate with one another. Docs is a platform which meets all the aforementioned needs.

G Suite

G Suite by Google Cloud is an all in one Cloud suite that allows you to create, communicate, collaborate, and store files. It includes applications such as Calendar, Classroom, Docs, Drive, Hangouts, Forms, Sheets, Slides and Sites. It is compatible on all operating systems and across any device that has access to the Internet. Although, once you have the app on your smartphone, you can also make edits without an Internet connection.

Docs is accessible on a variety of devices (computers and smartphones), meets district guidelines, safe, and cultivates real-time online collaboration on the same document by multiple users on their own devices. All work is saved in real-time and users can chat with others on the Docs page using the chat pod tool. Docs is also compatible with the more traditional program of Microsoft Word.

I chose Docs because of the increasing popularity of Gmail and I figured most students already had a Gmail account or they could go through the easy and fast process of signing up for one. Also, the popularity of the Google name would increase the chances of buy in from my students. Docs was one of the first online programs to master real-time collaboration with few to zero glitches. Once I successfully implemented Docs in my classroom, I knew I could build capacity to expand to other G Suite applications, such as Slides, for future initiatives and student projects.

Participants

Two Social Studies 11 classes in the Vancouver School District were involved in my research from September 2015 to June 2016. Since this is a linear school system and these two classes fell on the same day, I taught these sets of students every other day. In this Secondary School (grade 8-12) there was one Principal and three Vice Principals. There were over 100 staff members to accommodate for the student population of over 2000. The students came from diverse backgrounds ranging from first to third generation Canadians to new immigrants. One of my students was designated as hard of hearing and one other student was on the autism spectrum.

Project Description

To begin my inquiry project, before handing students' any devices or providing them access to the World Wide Web, we engaged in a series of digital literacy and digital citizenship lessons. Students were introduced to Docs and given a demonstration on how to effectively use the program. The year started fast as we needed to complete the first group project using Docs in concurrence with the timing of the Federal Election in October 2015. Later in the year we moved to using Docs in conjunction with Google Slides for another group project. To access Google Drive, students utilized the computer lab, library, iPad cart and their own devices. I took on a participant-observer role as I was also on each group's Doc to model appropriate online behavior and provide instantaneous feedback. Inquiry results were collected through ongoing observations and reflections, class discussions and student surveys.

Inquiry Questions

1. How might it be possible to meaningfully integrate the multifaceted communication skills of Gen-Z into our traditional classrooms?
2. How can technology be utilized to enhance student engagement within the limited physical confines and resources found in a traditional classroom?
3. Will it be possible to teach students appropriate digital citizenship and literacy skills throughout this process?

Timeline

July 2015	• Thesis topic exploration • Learned about various apps and web-based programs that increase student engagement • ***Inquiry proposal***
August 2015	• Began research on district policies surrounding the use of Docs and G Suite
Early September 2015	• Students and parents sign consent and media release forms
Phase I – Canadian Federal Election Debate: Digital Citizenship & Google Docs and Drive	
Mid September 2015	• Digital Citizenship Education – students develop "Appropriate Use Policy" and "Online Code of Conduct"
Late September 2015	• Docs and Drive tutorials • Canadian Federal Election Debate Assignment. Class is split into four groups of 7 for each major political party
Early October 2015	• Group collaboration using Docs. Various periods in the computer lab, library and using the iPad cart
October 19 2015	• Class debate • *Canadian Federal Election*
Late October 2015	• Post-assessment student surveys administered, completed and collected • Focus groups based on students answers • Class discussions
December 2015	• ***Data Compilation for Phase I***
Phase II – World War II & Extension of G Suite – Digital Citizenship, Google Docs and Slides	

January 2016	• Revisiting Digital Citizenship and revamping "Appropriate Use Policy" and "Online Code of Conduct"
Early February 2016	• Google Classroom and Google Slides tutorials • Canada & World War II Group Project. Class split into 7 groups of 4.
Mid February 2016	• Group collaboration using Docs & Slides. Various periods in the computer lab, library and using the iPad cart
Late February 2016	• Group Presentations
Early March 2016	• Post-Assessment Class Discussions • Informal observations
Mid March 2016	• ***Data Compilation for Phase II***
Phase II - Inquiry/Thesis Writing	
July 2016	• ***Literature review*** • ***Begin drafting thesis***
Jan 2017	• ***Complete abstract, introduction, timeline***
March 2017	• ***Complete First Research Presentation***
June 2017	• ***Inquiry project completion and presentation*** to supervising committee and DLC3 colleagues.

Literature Review

Upon the creation of the Internet, people around the world embraced the opportunity to experiment with this free enterprise at will, without any rules or guidelines. Citizens that were traditionally bound by their national laws could now participate in a borderless international digital world. Scholars and educators in the 21st century are no longer discussing *what* the Internet is but rather *how* we can effectively and ethically interact with it as a medium through which we can enhance learning and engagement. This review explores the literature and research surrounding the key concepts of:

1. Digital citizenship and literacy
2. Virtual Classrooms
3. Policy

Within these key concepts, I have subtopics that pertain to my inquiry project and research. For organizational purposes, I have formatted these subjects with their corresponding scholarly work in a table form (Appendix A).

Within this literature review my inclusion criteria was to search for scholarly articles that focused on my three key concepts and subtopics. I primarily used the search engines JSTOR, ERIC, and Google Scholar to research peer reviewed and reputable studies. As I began my research, I found that there were very few studies that specifically highlighted Google Classroom. Therefore, I broadened my search to include studies on virtual classrooms and the principles of Web 2.0. I examined articles from the time the Internet first emerged to more current articles to determine progress and continuity within this pedagogical framework. I also focused on the inequalities and the digital divide that educators need to consider before and during the implementation of digital technologies in their classrooms. Since the way in which

we use and interact with the digital world has accelerated at such an unimaginable rapid rate, ideas of how we transmit, receive, and create knowledge have shifted and transformed.

Digital Citizenship and Literacy

Definition. Digital citizenship is one of the most important forms of citizenship in the 21st century. Many scholars have varying opinions on the definition and parameters of the term digital citizenship. Each definition has different implications for the individual and society at large. Mossberger, Tolbert, and McNeal (2007) write, "digital citizens are those who have the ability to read, write, comprehend, and navigate textual information online, and who have access to affordable broadband" (p. 140). Mossberger et al. further state that digital citizens use technology to fulfill their civic duty and use technology at work for economic gain. Throughout their findings, Mossberger et al. omit the fact that digital citizens use technology as a way of life through which they communicate with their friends, family and strangers for social reasons in addition to educational and civic ones. They mention that although information technology has many "positive externalities," they primarily view digital citizenship through a two-dimensional lens that focuses on its potential political and economic benefits.

Poster (2002) coins the term "Netizen" to describe the name given to a political subject constituted in cyberspace, in contrast to the citizen of the nation. He points out that the Internet has created a global village that has become detrimental to the prosperity of individual nations. He states the "political formation of the Netizen is already well under way, bringing forth a humanity adhering not to nature but to machines, not to geographically local identity but to the digitized packets of its own electronic communications" (Poster, 2002, p. 103). Poster argues that as we become global digital citizens, economic progress also becomes globalized, and the

nation-state loses its ability to protect its citizens and economy. The arguments made in Mossberger et al. (2007) align with Poster's outline of positioning digital citizenship within an economic framework. Defining digital citizenship through an economic theoretical perspective is misleading and undervalues the wide array of experiences that the digital world has to offer. The international world initially became interconnected as the exchange of goods and ideas could flow freely between borders through the ratification of free trade agreements and economic and political unions. I argue that the impacts of these policies were further exacerbated through the connectivity of people in the virtual world. Although it is true that the "Internet deterritorializes exchanges, extracting them from bodily location" (Poster, 2002, p.101), this process had already been initiated with the inventions of the radio and television that traversed international boundaries. To define digital citizenship in mere economic terms, as Mossberger et al. and Poster have argued, devalues the opportunities and possibilities that the digital world offers for both the individual and society.

Digital citizenship is a way of life and children today are naturally immersed and surrounded by the digital world. Prensky (2001) argues that our 21st century learners are being brought up as digital natives. Palys and Atchison (2009) further this idea into a very interesting notion that our youth have in fact "colonized" the Internet. According to Palys and Atchison (2009), the term "colonized" is not to

> conjure up its more pejorative connotations of subjugation and confinement of people and spaces, but simply to convey that the Internet has involved in the creation of places that individual and groups have marked and settled for their own social purposes. (p. 2)

Although these scholars create an accurate portrayal of the digital world in which our 21st century learners are being raised, a weakness in their argument is whether or not our digital citizens have learned to use digital tools effectively, ethically and safely.

Young (2014) expands her definition of digital citizenship to include how a person conducts himself while using digital tools. "This encompasses understanding how to safely and appropriately participate in everything from texting to email to social networking" (Young, 2014, p. 9). The argument is that students already know *how* to use the Internet, but are they using it in an appropriate manner? Are they meeting the expectations of a "citizen" in the digital world and do they even know the parameters of those expectations? Teaching students about copyright, plagiarism and privacy laws and the consequences of one's digital footprint, are all components that Young (2014) states are essential for students to learn to safely participate in a global digital society. After analyzing the literature and research of scholars in their attempt to define digital citizenship, I will use Young's (2014) definition as I find her perspective and reasoning to be the most accurate and valuable as she promotes the balanced and comprehensive expectations of a successful digital citizen.

Digital Literacy

Chase and Laufenberg (2011) state that digital literacy is not a new literacy as it really is just merely reading, writing and exploring in a digital environment. "Let us then accept digital literacy as a genre, a format and tool to be found within the domain of standard literacy, rather than a concept standing at odds" (Chase & Laufenberg, 2011, p. 536). This is a simplistic definition that involves the two hallmarks of literacy: reading and writing. Eshet-Alkalai and Soffer (2012) argue that rapidly changing digital technologies confront users with the need to

master a wide range of technological, cognitive and social competencies. They further state that students need to effectively cope with these three competencies to meet the pedagogical challenges of new technologies.

The difference from examining print to digital information is that learners construct and consume knowledge in non-linear environments (Eshet-Alkalai & Soffer, 2012, p. 1). In Mossberger et al.'s (2007) research they completely omit the idea that a successful digital citizen needs to be digitally literate. Many scholars mistakenly believe that the two terms can be used interchangeably. Eshet-Alkalai and Soffer (2012) have realistic assumptions and expectations of the attributes that a digitally literate individual should embody. Eshet-Alkalai and Soffer (2012) make these assumptions clear, when they state that it is important for learners to understand the discourse of the

> changing socio-technological and philosophical-epistemological environments, where the conventions regarding preferred and prohibited learning methods are constantly challenged – both by social and philosophical trends and by communication and learning technologies. (p. 1)

Digital Divide

Many scholars argue for and against the existence of a digital divide between the online and offline worlds. Understanding the inequalities that our students may face have important implications in the way we teach and our students understand. Mossberger et al. (2007) argue that social inequalities and systematic disparities exhibited in real life are exacerbated in the digital world. Their argument is supported by Eshet-Alkalai and Soffer's (2012) definition of digital literacy. If an individual lacks the fundamental hallmarks of being literate, the ability to

read and write, then how can one expect to be literate in the digital world where the same prerequisites are necessary?

Mossberger et al. (2007) pursue the direction that technological inequalities overlap with existing social inequalities of race or ethnicity. They develop their case using Smith's (2002) notion of a persisting ascriptive hierarchy. Both scholars fail to consider the natural evolution of our Gen-Z students. 21st century learners now learn technological skills in their natural, social environments as they interact with their family and friends within and outside of the school environment. Some children are given iPads and smartphones and learn to navigate such sophisticated technologies before they can even talk or crawl.

Race. "Exclusionary tradition of ascriptive hierarchy has long relegated people of colour to the status of second-class citizenship" (Mossberger et al., 2007). Mossberger et al. (2007) argue that the inequalities of the real world, are being replicated online, in the virtual world. I would argue against Mossberger et al.'s claims, as I believe that that as online accessibility increases, it decreases the gap between gender, race and age disparities. Mossberger et al. (2007) base their results on a study sampling American citizens from the years 2000 to 2006 (see Appendix B for detailed statistics). However, it is clear from Appendix B that the gap between the online users of different races begins to decrease over time.

Gender. In the initial phases of the Internet, there was a clear gender divide with females being less digitally literate than males. After examining Appendix B, the gender divide has decreased and can no longer be considered a factor in the digital divide. DiMaggio, Hargittai, Celeste, and Shafter (2001) confirm that the differences in rates of Internet use among males and females began to disappear between 1994 and 2001. The only difference between the genders is

that "once online, women remain less frequent and less intense users of the Internet" (Ono & Zavodny, 2003, p. 111).

Age. After examining Appendix B, it is observable that the age group of 65 years and older are online the least. This further solidifies Prensky's (2001) arguments that digital natives will use digital technologies the most, followed by digital natives, albeit with varying levels of expertise. This is relevant to my inquiry project as many educators in my school district work beyond the age of retirement and lack the knowledge or in some cases, motivation, to learn how to use new technologies to benefit the teaching and learning process in their classrooms.

Access and Use. When considering the parameters of the digital divide and looking at the inclusion and exclusion criteria, it is important to look at the issues of access and use. Disparities in access are driven by income inequality and/or educational differences (Attewell, 2001). At first, access was restricted "to an elite defined by wealth, institutional location, or both; but increasing penetration reduced gaps between rich and poor, urban and rural, old and young, the well-educated and the unschooled" (DiMaggio et al., 2001, p. 18). Whether students only have access to digital technologies at school versus at school and home, are important factors that determine potential success.

When examining how students utilize the Internet, it is important to study whether they know how to use it to its full potential. Are they getting quality information? Do they know how to distinguish which sources are credible? "Whether the digital divide constitutes a caste-like division in society or is only a temporary feature of the rapid diffusion of computers, the question remains, does the lack of access to computing seriously affect children's life chances?" (Attewell, 2001, p. 253). Since most of the online sources that our students use are free, most scholars would surmise that this would help decrease inequalities. However, if lower-status

Internet users take longer to find information (because their search skills and broadband connections are insufficient) then the Internet could be a more expensive form of information than the newspaper, television, or a phone call to a friend" (DiMaggio et al., 2001, p. 23). I can address Attewell's (2001) theoretical perspective on inequalities of access and use throughout my inquiry project by giving my students equal access and opportunities to my school's digital resources and ample class time to do their projects and research. I can also guarantee that my all my students will be given the opportunity to develop their digital skills as they will have me as a resource to help them navigate the online world if they lack the expertise to do so.

Social Inequality. DiMaggio et al. (2001) argue that the digital world enhances social equality, by "democratizing consumption." DiMaggio et al. (2001) state that students of technology agree on the following three conclusions, all of which apply to the Internet:

1. The specific forms that the new technologies take, and therefore their social implications, are products of human design that reflect the interests of those who invest in them.
2. Technologies are continually reinvented by their users, as well as their designers.
3. It follows from the first two principles that technologies adapt to ongoing social practices and concerns rather than "influencing" society as an external force. (p. 7)

These three conclusions are important in understanding how the makers and users of the digital world continually interact with each other. As educators and digital innovators, we can reason that these arguments are valid from our own lived experiences and observations. In some cases digital technologies are the products of a specific demand in society and in other cases, digital

technologies create the demand. This interchangeable cause and effect relationship is important to consider when selecting and using appropriate digital technologies.

Teacher Competency. Attewell (2001) states that the context in which technology is introduced makes a big impact on whether a student will be successful in its application. "Educational and social inequality may increase if less affluent children or children of lesser educational ability use inferior computers at school (fewer, older, slower, nonnetworked) or if their teachers are not well trained in the use of computers" (Attewell, 2001, p. 278). DiMaggio et al. (2007) agree that there is a direct correlation amongst a teacher's competence and interest in digital technology and student engagement. Since the school curriculum does not directly push teachers to use digital technologically, teachers need to be self-motivated to participate in professional development workshops or career and skills development programs to enhance their knowledge and to decrease the digital disconnect with their students. Through this master's program on digital literacy and curriculum, I am gaining the necessary prerequisites on the use, theory and pedagogical framework surrounding digital technology, which will enable me to responsibly and successfully carry out my inquiry project.

Civic Engagement

The argument that digital literacy will increase civic engagement is fully developed in Mossberger et al.'s (2007) research. This is an important topic for me, as one of the cornerstones of social studies is to teach our students how to become active and responsible citizens. Morison (2010) coins the term "Gov 2.0" to label how the government has modernized to meets the needs of the new Web 2.0 society. He states that governments need to change the way in which they provide services to and interact with their citizens. He is not mystified by the concept of Gov 2.0 as he knows there might be some downfalls as well. Although the Internet provides more

opportunities for citizens to interact with the government and become more involved, "in the new Gov 2.0 environment there is a choice whether they are to become simply new model citizens within a wider state-sponsored programme or more defiant, active and assertive citizens within their own governance projects" (Morison, 2010, p. 577).

Mossberger et al. (2007) explore the concept of membership in the digital world by examining three concepts: liberalism, civic republicanism and ascriptive hierarchy. Through these lenses, Mossberger et al. (2007) state that since individuals have the rights and opportunities to access free information online, they will set intrinsic goals to use the Internet for civic engagement. Some scholars fear that "cyberbalkanization," which is when individuals purposefully communicate only with others who share their beliefs, screening out information that challenges their predispositions, may be perpetuated online (Mossberger et al., 2007).

Participation in politics has increased as "online news reduces the individual costs of acquiring information, facilitates discussion, and increases the benefits of political participation by magnifying political interest" (Mossberger et al., 2007, p.65). The Internet can provide different perspectives to our students as they have the ability to access more diverse outlets compared to relying upon our mainstream media. Carrizales (2009) corroborates Mossberger et al.'s (2007) claim that the Internet will increase civic engagement, by stating "the building blocks for citizenship in the information age are quality public education with universal access to the Internet" (p. 351). It is imperative that that social studies educators use digital technology in their classrooms to engage their 21st century learners so that they can become active, informed and responsible citizens.

Educational Enhancement

In DiMaggio et al.'s (2001, p. 38) flow chart on the "Impact of Internet access on life chances," (Appendix C) they clearly demonstrate how certain demographic and situational factors will impact the skill level of a student, which will then impact the extent and quality of use and ultimately result in social and human capital. Leung (2010) corroborates DiMaggio et al.'s conclusions stating, "there is a growing belief that people's ability to handle information (i.e., solve problems and think critically about information) tells us more about their future success than does their knowledge of specific hardware or software" (p. 273). He goes on to argue that digital literacy can be directly correlated with enhanced life quality and future success.

A weakness of DiMaggio et al.'s (2001) argument is that they do not examine whether the Internet can potentially be substituted with another medium, for example books. Will the extent and quality of use of books have the same, greater or less of an impact than the Internet? Nonetheless, the importance of this study is for educators to realize that whenever using any type of medium through which they are teaching or through which students are learning, to always analyze the extent and quality of access and use. Ongoing assessment of the teaching and learning process is key when implementing new digital technologies into the classroom.

Potential Risks. "Technological dystopians are no less convinced of the powerful negative effects of technology on children" (Attewell, 2001, p. 254). It is imperative that we study any potential harmful impact that technology use may have on our students. If learners, teachers, and schools harness Web 2.0 for educational purposes, research is required to understand the technological, ethical, educational, and social practices across their life span, including technology use across a whole day (Greenhow, Robeila, & Hughes, 2009). Ideas of children developing bad posture and poor vision are age-old adages that began with inventions

that rendered individuals immobile such as the "screens" of theatres and televisions. As the Internet began to spread in the late 1990s, Healey (1998) was concerned that children's computer use would displace authentic childhood learning experiences. She questions, "Will our children ever be alone with their thoughts or emotions in an age when we perpetually close their brains with artificial stimulation?" (Healey, 1998, p. 309). The constant need for stimulation and immediate rewards has undoubtedly led to decreased attention spans amongst our students.

Healey (1998) goes on to argue that modern technology "fragments children's experiences instead of integrating them and distracts their minds from the job of sense-making" (p. 137). Attewell (2001) builds on Healey's argument by stating that while online gaming or on social media sites youth enter a state of "flow." This is the name given to a state in which individuals lose their awareness of self and of the passage of time because they are so engrossed in an activity (Attewell, 2001, p. 255). Through Attewell's (2001) research, he found that at most, one in five children were using technology to develop skills in math, reading, science or critical thinking, and most of this use was sporadic and of short duration (p. 256). Generally, children favoured playing non-educational games rather than using their computers for educational purposes. Attewell (2003) reports that young home-computer users derive modest but significant sociocognitive benefits, but the effects reverse among the heaviest users. As educators, we need to focus on how we can provide activities that are both educational and enjoyable to obtain and maintain student engagement.

What happens when an individual tries, but is not successful in navigating the digital world? DiMaggio et al. (2001) state that "Internet dropouts" face the same inequalities in both the virtual and real worlds. Internet dropouts tend to be younger, lower income and less educated than current Internet users (DiMaggio et al., 2001). They have less income to devote to

paying for Internet connections and may have some skill deficits that make the Internet more frustrating and less relevant (Mossberger et al., 2007, p. 14). Many scholars do not mention or even study the impacts of unsuccessful attempts to navigate the digital world. How can we cope with students that lag far behind from their classmates when it comes to digital technology? Are some teachers that have dabbled with technology but refuse to implement it in their classrooms also Internet dropouts? DiMaggio et al. (2001) and Mossberger et al.'s (2007) research on Internet dropouts stands out above all of the rest as it is a topic that needs to be studied in much more depth.

A "darker interpretation is that the Internet may actually diminish the social connections that cement individual commitment to the larger society" (Mossberger et al., 2007, p. 50). Mossberger et al. (2007) go on to state that the absence of social cues (body language, eye contact and facial expressions) are missing in the online discourse. Although this is true, there is a lack of discussion about the emergence of a new online discourse of social cues. For example, how long an individual takes to respond to a text message or the ability to express emotions via emojis are new ways in which individuals can express themselves in the virtual world.

After considering the scholarly work on the negative impact of digital technologies, are we then harming our students by providing digital technology in the school environment? Healey (1998) suggests that the best educational use of technology is when teachers, family members or friends can mentor and guide children while they are using it. "To educate effectively with computing requires as much, if not more, adult support and effort as do traditional teaching methods" (Healey, 1998, p. 255). The focus should start with the quality of a teacher's expertise and skillset. The onus of teaching the responsible and ethical use of digital

technology falls on adults who should take what they have learned as appropriate behavior in the traditional world and mirror it in the virtual world.

Virtual Classroom

When students enter our schools, we frequently require them to "power down." Where is the interaction? Why is their world shut down because they enter a classroom (Taranto, Dalbon, & Gaetano, 2011)? The “Gen M” (generation millennial) student is changing the way we teach (Bauleke & Herrmann, 2010). Greenhow et al. (2009) suggest an answer to these questions is through academic social networking. Teachers can combine the power and influence of social networking with academic work in physical and virtual classroom settings.

When learners engage in cycles of creation and consumption as part of the participatory Web culture, they are simultaneously developing online identities or dynamic and shifting constructions and presentation of self (Coiro, Knobel, Lankshear, & Leu, 2008). Students that are anxious or nervous to speak in class, often find that the online world is an easier and safe setting to share their feelings and thoughts. Many students rarely participate in a regular classroom setting due to a lack of confidence in their own abilities (Taranto et al., 2011). A virtual classroom can blend the most vocal students with the most reserved and increase collaboration between both ends of the spectrum. Identities evolve through social, virtual, material and discursive practices and across social context, spaces, and purposes (Turkle, 1995).

Web 2.0. The essential difference between Web 1.0 and Web 2.0 is that content creators were few in Web 1.0 with the clear majority of users simply acting as consumers of content, while *any* participant can be a content creator in Web 2.0 (Cormode & Krishnamrthy, 2008). In Web 2.0 knowledge is decentralized, accessible, and co-constructed by and among a broad base

of users (Greenhow et al., 2009). The value with Web 2.0 is that students can be active participants rather than passive recipients. They can create, share, collaborate, remix multimedia, and transform the "read-only web to a read/write web" (Taranto et al., 2011, p. 15). Cormode and Krishnamrthy (2008) examine the paths that students can follow to transition from content creators to content consumers in Web 2.0 (see Appendix D for further details). Taken together, the interconnections, creative capabilities, and interactivity of Web 2.0 offer learners initiation into a web-based participatory culture that has low barriers to artistic expression and civic engagement (Jenkins, 2006, p. 3).

Virtual Workspace/Classroom. Students will be "innately motivated by using social networking in the classroom, because it is just a natural part of their lives (Taranto et al., 2011). Google classroom has a built-in chat feature and instant notifications if their group members are online, working on the Doc. From my research thus far, students have commented on how they enjoy the ease of collaboration and communication with their peers through using Docs. They state that since this website can be accessed via an app on their smartphones, it is a platform that simulates how they interact with their friends daily, i.e. using their mobile phones for instant messaging. Taranto et al. (2011) corroborate the experiences of my students as they state, students can "question, challenge, and respond to on another in a fast-paced, equal-opportunity environment with which they are extremely familiar; this mimics many of their social interactions on the Web outside of school" (p. 16).

An added benefit of using a virtual classroom to supplement learning that occurs in the physical classroom is that it provides educators with a vehicle to appropriately model and teach digital citizenship (Ribble, 2009). Taranto et al. (2011) also argue that educators can model how to appropriately and ethically behave while in an online or virtual environment. The benefit of

educators using virtual classrooms is that students will observe and learn on how to safely and responsibly navigate the virtual world in a monitored setting.

Potential Risks. A challenge associated with the use of a virtual classroom is that this "open, emergent, chaotic nature of online interaction often conflicts with the rigidly organized social structure of formal education that involves standardized goals and curricula" (Zhang, 2009, p. 275). Luckily in British Columbia, the new social studies curriculum is moving away from being content heavy and enforcing standardized tests to student-centered learning and inquiry. Since assessment, for the most part, will no longer be standardized, educators and students will be given opportunities to explore and learn without traditional boundaries holding back their creativity. It is with this new curriculum, that virtual classrooms can flourish.

Although Web 2.0 features enable potentially valuable formative experiences and social practices in the learning ecology, they also open the door to potentially unproductive interactions, harmful public scrutiny, and threats to privacy that undermine learning (Greenhow et al., 2009, p. 258). Educators will have to consider all potential benefits and risks when deciding to implement a virtual workspace in their classrooms. It is imperative that educators set clear rules and guidelines for their students and select a viable digital classroom that will harness safe student engagement.

Policy

Regulation. Policies to promote digital citizenship are piecemeal and underfunded (Mossberger et al., 2007). The Vancouver School Board has yet to release an online virtual classroom that can be used district-wide. Teachers that would like to implement Google Classroom are left to navigate through appropriate use policies to write their own mandate to use with their students.

Another issue is the unequal distribution of technological resources throughout districts and within schools. To save money, districts set up computer labs instead of having a one-to-one student to computer ratio. Healy (1998) mentions, students would benefit from having one-to-one guidance with those that already know how to navigate the digital world. There are projects throughout the district, where some teachers get class sets of iPads, but as has been previously mentioned, this can exacerbate inequalities. When there is one computer per child in regular classrooms and many teachers are computer savvy, the radically subversive educational potential of technology will be unleashed (Papert, 1993).

Deibert, Palfrey, Rohonzinki, and Zittrain (2008) argue that state-mandated Internet filtering practices should be encouraged in each nation. On a smaller scale, filtering practices or appropriate use policies should be implemented on a district-wide basis. Initially the Vancouver School District was fearful of social media and blocked a lot of social media sites like Facebook, but later gave them permission due to their educational promise. If nation-wide filtering is too broad, there is a chance it may infringe upon some of our Charter of Rights and Freedoms, such as the freedom of expression, speech, and thought. On the other hand, the government also has the responsibility to protect and control national issues and interests both in the real and online worlds. This here is the central dilemma. For my inquiry project, I take into consideration the various works of scholars that I have reviewed, and with my students, construct a viable appropriate use policy for Google Classroom.

British Columbia Curriculum. The Internet is a moving target, with many economic and political interests vying to control its ultimate configuration (DiMaggio et al., 2001, p. 2). One of the most important stakeholders in British Columbia is the Ministry of Education. Although the Vancouver School District now has a fully functional secured wireless connection for all its

students and educators, having access to technology is not the only key to success. An inquiry-driven curriculum served by technology is critical (Chase & Laufenberg, 2011).

The social studies curriculum has finally moved away from the domination of historical content to the notion of history as a way of knowing. This idea was first presented in Peter Sexias's work in 1994, but has finally come to fruition twenty-two years later. At that time, he stated by using textbooks and having the information in them deemed to be the one true "authority" on a subject, historical "truth" became an arbitrary value assigned by an authority, rather than the outcome of rational investigation (Sexias, 1994). In British Columbia, we are shifting away from the traditional perspective of the Ministry dictating what historical content should be taught, to a 21st century approach with a focus on the process of knowing and student-centered inquiry. Although we are moving in the right direction, the resources for the integration of digital technology are still missing. A precedent for the integration of virtual workspaces has already been set in many progressive cities throughout the world. Several European cities, including Manchester and Rotterdam, viewed new communications technologies as "a catalyst for new social cohesion" and dedicated significant resources to providing citizens with the infrastructure to create virtual communities and to participate more actively in local politics (DiMaggio et al., 2001, p. 48). In British Columbia, we need to follow the lead of these cities and incorporate digital technology into the curriculum at every grade level and for all subject matters.

Conclusion

After examining the research surrounding my three key concepts of digital citizenship and literacy, virtual classrooms and policy, many of my assumptions have been affirmed, yet the

plethora of research has also left some questions unanswered. It is my hope that through my inquiry project, I can begin to fill in some of the gaps in research.

Using virtual classrooms to supplement learning will benefit our 21st century learners, as the mixed media online platform, full of interactivity and collaboration, will enhance student engagement and learning. Educators need to determine the potential benefits and risks when making the decision to implement a virtual classroom. It is imperative that they model appropriate ethical online behavior and responsible academic social networking (Taranto et al., 2011).

Mossberger et al. (2007) and DiMaggio et al. (2001) make it clear that the digital divide is no longer comprised of gender, age, or race inequalities. Instead, access and use and teacher competency are the main factors broadening the digital divide gap. It is evident that although there is minimal potential for the virtual world to exacerbate social inequalities, providing equal opportunities for students to use digital technologies can help bridge the gap.

More research is required to assess the potential negative impacts or risks involved with excessive digital use both outside and inside the classroom (Healey, 1998). There is a lack of long-term longitudinal studies as Web 2.0 only emerged just over a decade ago. Various stakeholders need to invest more time, money and research into studying the immediate and long-term educational, physical and social impacts of virtual classrooms on our students.

Digital citizenship and literacy are terms that need to be accurately defined and understood as prerequisites to teaching in the interactive and limitless virtual world. By using Google Classroom for my inquiry project, I have been able to have in-depth discussions on digital citizenship and have had the opportunity to model appropriate use and ethical behavior in the online world for my students. As students continue to create and share knowledge in the

participatory culture of Web 2.0, educators need to the bridge the technological gap with their Gen-Z students and encourage engagement and learning through mixed platforms in the online world.

Methodology

My qualitative and quantitative research took place with the careful consideration of the inquiry ethics I learned throughout my Master's program and through the completion of the Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS 2: CORE).

Facilities

My classroom was located on the first floor of the school with easy access to the library down the hall. I created a quasi-horseshoe arrangement of the desks in my class to foster engagement and discussions (Figures 1 and 2).

Figure 1. My classroom layout

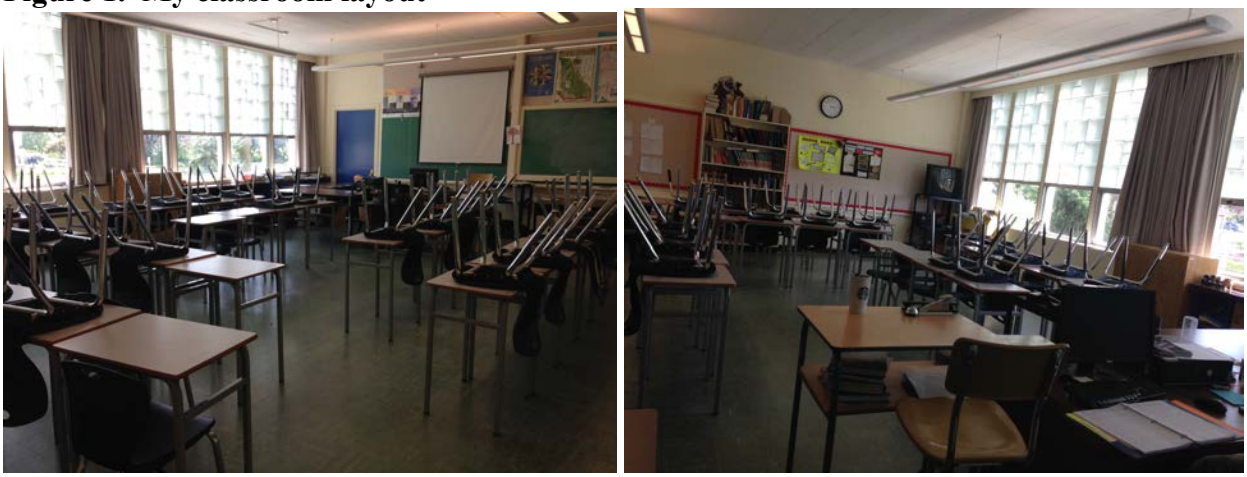


Figure 2. Panoramic view of my classroom

The computer lab was on the opposite end of the school on the second floor. When using iPads, students spread out to the hallways and foyer of the school.

Equipment

The students and I used the same equipment, with the exception that I had a desktop in my classroom. I also had a projector and a screen which was used for my initial demonstrations on Gmail and Docs. All the students used a Gmail address that they created for this course. Once logged into their Google Drive, they could access Docs for the first project and Slides for the second project. Using Docs and Slides required access to the Internet and at this school, the Wi-Fi is excellent. Each student at the school has their own Vancouver School Board login and password which connects them to the Wi-Fi. When some students forgot their VSB passwords, I had access to reset them which fast-tracked what could be a delay in students accessing Docs and Slides. G suite could be accessed anywhere with an Internet connection so students were using it both inside and outside of class time.

The computer lab had 30 computers that were arranged in four rows. This is not an ideal set up as there is a lack of privacy and decreases the ability for face to face interaction with their peers. From my experience, arranging the computer lab in pods is more conducive to collaboration. Both the computer lab and library had projectors and screens so I could do any detailed demonstrations and students could follow along on their desktops. The library only had 15 computers, so when we were in there the rest of the students had to use the iPad cart which contained 24 iPads.

Using the iPad Cart was not ideal as the procedure to book them and then take them out caused many teachers to avoid using the available technology. When using the iPads in my classroom I had to first book the iPads, but the library made this process very easy as they set up

an online booking site. Next I had to go to the library and get a key from the librarian to open the storage door, unlock the lock with the numeric code for the week, unplug all the iPads and put them in two heavy totes and wheel those back to my classroom (Figure 3). At times when I would only have five minutes between classes, this process was impossible to complete. I would have to leave to get the iPads during class and had to have another teacher keep an eye on my students.

Figure 3. iPad lock and carrying totes

It was the same process, but in reverse, for returning the iPads. Although there were clear signs on the iPad storage and charging unit (Figure 4) to plug in the iPads, many teachers did not adhere and therefore many iPads were left uncharged and not useable.

Figure 4. Library iPad charging and storage unit

The entire process was strenuous and time consuming, especially with little help from the librarians nor it was it allowed from my students. The iPad cart was a last resort for this project since the chat feature on Docs is not compatible on the iPads.

Research Methods

I observed and took screenshots of daily occurrences on each groups' Docs. Students uploaded research, pictures and links onto their Docs. I documented how often students interacted with me and asked for my help and feedback as well as from their peers. I provided detailed comments also observed how often students were accessing the Docs outside of school time during the weekdays and weekends.

Data Collection Methods

Due to the nature of my inquiry, I felt that ongoing qualitative assessment would be the most important. Throughout this inquiry, direct class discussions and the openness of my students helped me adjust my research. For instance, for the second project the students suggested to use Slides in addition to Docs and I agreed as I felt that it was a natural progression in the realm of G Suite and the students were more than capable and ready for this addition. At the end of the first project using Docs, students completed a survey.

Procedure

Phase I: Canadian Federal Election Debate: Digital Citizenship, Google Docs, and Drive.

Stage One: Digital Citizenship and Literacy

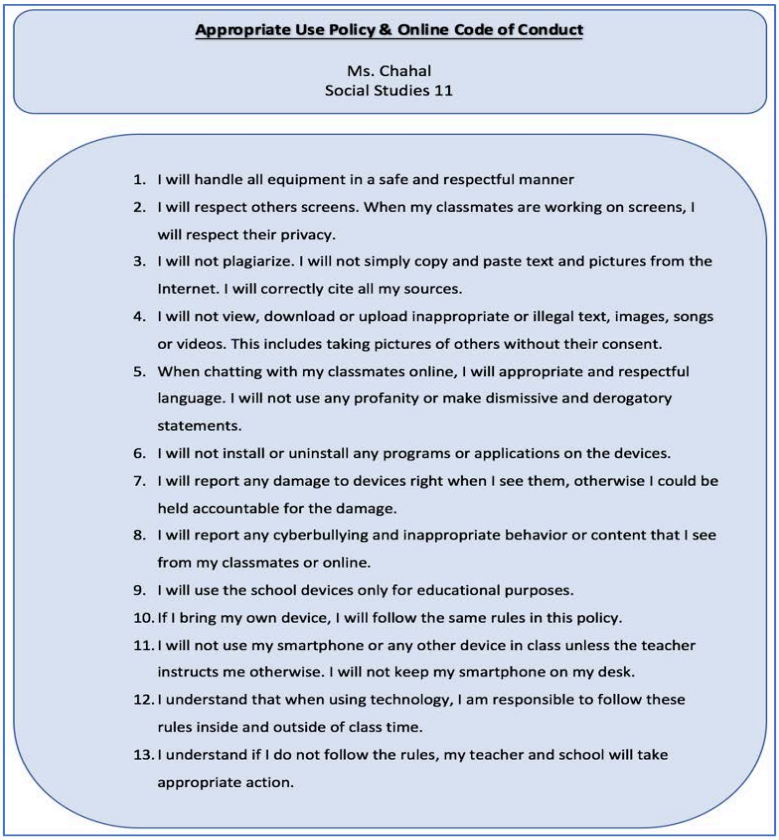
For a Secondary School Social Studies teacher, having Social Studies 11 on one's course load during election time is a fortuitous occurrence that only occurs every four to five years. The government unit in Social Studies 11 is typically covered towards the end of school year, as the year tends to start with the geography unit and then moves on to the history unit. This year, I began with the government unit to make what we were learning in class relevant to what was happening in our media and political sphere at the time.

I began my inquiry immediately with a focus on digital citizenship education as we needed to complete our debate and Docs project before the Federal Election taking place on October 19, 2015. We started off with class discussions about the general use of technology and the Internet and then moved to more specific discussions about digital citizenship and online safety. In small groups, students talked about negative experiences they had experienced online

or stories from their friends, family, news or social media about cyberbullying, harassment, and fraud. We then shared the stories as a class and discussed how these situations could have been prevented and the resources available to students if they ever encounter any of these types of situations.

I had the students research the appropriate use policies of the Vancouver School Board and other districts and schools. After examining the various polices and working in small groups the students came up with one "Appropriate Use Policy & Online Code of Conduct" (Figure 5). Both classes agreed on every statement and to my pleasant surprise, the students wrote more rules and guidelines than I expected. I printed a copy of the policy for every student and pinned it to our tack board. I also made a digital link available for my students.

Figure 5. Appropriate Use Policy & Online Code of Conduct



Appropriate Use Policy & Online Code of Conduct

Ms. Chahal
Social Studies 11

1. I will handle all equipment in a safe and respectful manner
2. I will respect others screens. When my classmates are working on screens, I will respect their privacy.
3. I will not plagiarize. I will not simply copy and paste text and pictures from the Internet. I will correctly cite all my sources.
4. I will not view, download or upload inappropriate or illegal text, images, songs or videos. This includes taking pictures of others without their consent.
5. When chatting with my classmates online, I will appropriate and respectful language. I will not use any profanity or make dismissive and derogatory statements.
6. I will not install or uninstall any programs or applications on the devices.
7. I will report any damage to devices right when I see them, otherwise I could be held accountable for the damage.
8. I will report any cyberbullying and inappropriate behavior or content that I see from my classmates or online.
9. I will use the school devices only for educational purposes.
10. If I bring my own device, I will follow the same rules in this policy.
11. I will not use my smartphone or any other device in class unless the teacher instructs me otherwise. I will not keep my smartphone on my desk.
12. I understand that when using technology, I am responsible to follow these rules inside and outside of class time.
13. I understand if I do not follow the rules, my teacher and school will take appropriate action.

Source: Created by my Social Studies 11 students

Stage Two: Introduction to Google Docs and Google Drive

After my students had a sound understanding of being responsible and respectful digital citizens, I began a tutorial on how to use Docs and Drive. I introduced the classes to the other G Suite applications but did not go into depth about how to use them. I also went through the procedure of how to create a Gmail account if the students did not already have one, or wanted to create a new one for this course to address privacy concerns. I also created a separate teacher Gmail account just for this inquiry. Students registered for their Gmail addresses on their own devices or using the iPads from the cart that I had signed out. I then collected a list of the Gmail addresses along with the first and last name of the students.

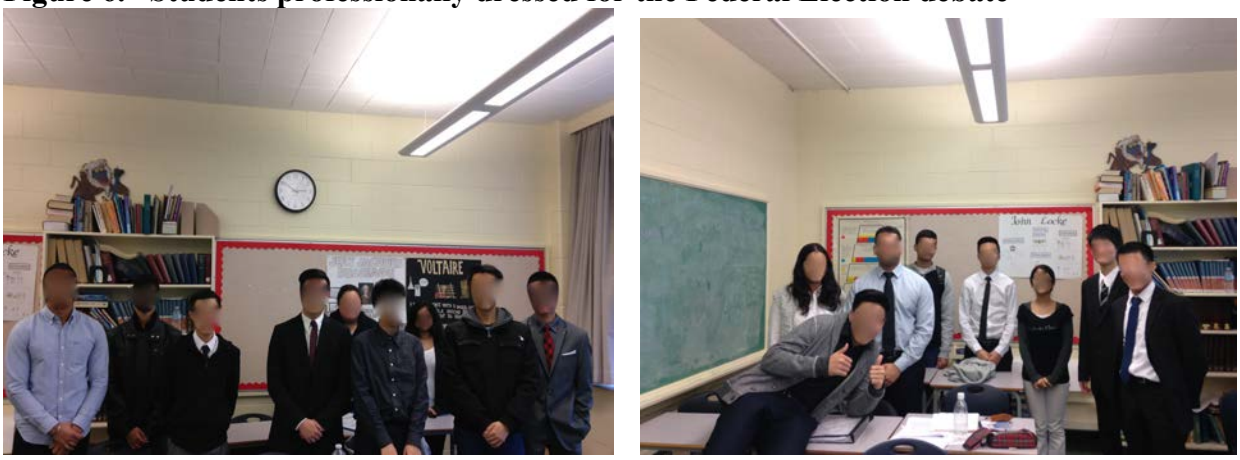
Stage Three: Introduction to Canadian Federal Election Debate Assignment

To divide the class into four groups representing each main political party (Liberals, NDP, Conservatives, and the Green party) my students completed the "Examining the Political Spectrum Activity" (Appendix F). After they finished circling their answers, the score sheet was exposed so they could see where they landed on the political spectrum. Students were then divided into the four political parties based on their scores so they felt somewhat connected to their political party. Next, students were given the Canadian Federal Election Assignment Sheet (Appendix G) and they each selected a group leader. As there were six to seven members in every group, each student was responsible for the research and representation in the debate for one or two parts of their party platform.

In the succeeding classes I took students to the computer lab so they could work on their research and input information onto their Doc. I set up a template for each political party (refer to Appendix H for a sample of the Conservative Party template) from which the students worked. Students could chat and help each other with research and editing on the Docs. The final product

for each person was inputted onto the Doc and this is from where I marked their work. There was no need for students to print their work. All this preparation led to the in-class debate and students were able to access their work on their own devices or class iPads (Figure 6). As each student was presenting their specific part, I was able to project their write-up and information onto the screen for the viewing of their group members and opponents. Students debated each component of the political party platform. For each section, the corresponding four students (one from each group) would stand and debate each other. I decided the winner for each round and gave a final tally at the end of the debate.

Figure 6. Students professionally dressed for the Federal Election debate



Following the debate, I administered a survey on the use of Docs for this project and we had class discussions about its positive and negative components. I compiled the qualitative and quantitative data and adjusted for the next project using Docs.

Phase II: WWII and Extending G Suite – Digital Citizenship, Docs, and Slides.

Stage One: Re-visiting Digital Citizenship and Literacy

In January, we revisited the Appropriate Use Policy & Online Code of Conduct to see if we needed to make any changes since our first trial with Docs. The overall sentiment was that this was a comprehensive list and it did not need to be changed. Students commented that it helped having a digital copy to refer back to if and when problems arose. Class lessons during this period were focused around digital literacy and connections to the new curriculum, specifically the curricular competencies.

Stage Two: Introduction to Google Slides

During our class discussions after the first project, many students voiced that they wanted to experiment with Slides for the next project. While creating PowerPoint or Prezi presentations for group projects, students always faced the difficulty of having to meet after class hours to work on the slides as they were only accessible on one device. I completed a class demonstration on Slides using the teacher desktop and projector. Since my students were very intuitive and now familiar with G Suite, I did not have to go into much depth, as many of the functions were similar to Docs, and the application operated much like Microsoft PowerPoint.

Stage Three: Introduction to WWII project using Docs and Slides

For this project, I had students pick their own groups of three and pick one event, policy or war that they were interested in further researching. Students were to first complete their research on their group Doc, including proper citations and a reference page. Next, they were to complete a presentation using Slides. After reading the feedback after the first project, I made the decision not to be on the Docs and Slides this time as I felt that I should give my students more privacy and they had proved they were capable of being responsible digital citizens. I

monitored their work throughout the computer lab periods so I knew that they were on task and check in on them frequently. I soon learned that my students had discovered Google Hangouts and they were using this application after school hours to collaborate on the Slides as they liked being digitally "face to face." This was a pleasant surprise! I was happy that my students were exploring more of the G Suite applications and utilizing the functions that enhanced their online collaborative experience. After students presented their projects, we had discussions about their experiences with Docs, using it now for the second time, and Slides.

Ethical Considerations

Following ethical principles during my research was of the utmost importance to me since one of the foundations of my research itself was to increase the awareness of appropriate digital citizenship.

Consent. Administrative, parental and student consent was collected and essential for student participation. Student participation was voluntary and students were aware that they could opt out of being included in the research at any point without having to provide a reason. I also had my research approved by the administration and ran the procedural aspects by department head.

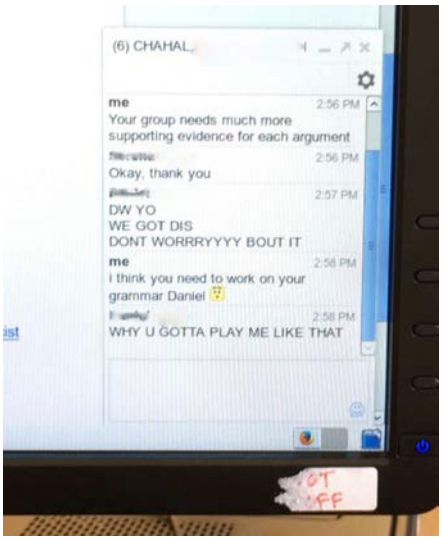
Appropriate Use Polices. Since there was a lack of district and school wide appropriate use policies for the use of technology and the Internet, we decided to make our own for the duration of the year. Each of my classes created an "online code of conduct" which was also inclusive of how to appropriately hand and care for the equipment they would be using.

Google Servers and Privacy Issues. At the time of my research, the Vancouver School District did not have a definitive answer on whether schools could use Google's cloud

applications. There was contention on this issue throughout British Columbia because Google servers are located abroad and therefore issues of student privacy and confidentiality come to play. I examined how other schools in Vancouver had used G Suite in their classrooms and modeled my use of Docs and Slides after them. I told students they could create a new Gmail address which should not include their first and last name just for this class. Students completed a sign-up sheet on which they wrote their Gmail address as well as their names so I would know who belonged to each one.

Role as Participant-Observer. As a participant-observer, I recorded qualitative data through my observations of the activity taking place on each Doc. I could examine how often students logged on and the times of their edits, their participation in the chat and peer collaboration and their overall productivity. I could see where groups were lagging and provide them support or encourage students when they were on the right path. Students were also free to ask me questions and chat in a different, much more causal and informal setting to which they are accustomed. Sometimes students got too comfortable with chatting with me online and had to be reminded to stay on task and use appropriate language (Figure 7).

Figure 7. Example of a Docs chat



The downside to being a participant-observer during this inquiry project was that my presence could alter or impact student behavior on their chats and overall progress on the Docs and Slides. There was much more lack of privacy for the students compared to when they meet face to face with their groups as the teacher cannot tend to all groups at once.

Language, Cultural, and Socio-Economical Differences. When using web-based software, the access to Internet away from class time becomes an issue especially at a school where socio-economical differences can be an issue. Most students had access to Internet at home, but for those that did not, we discussed places they could visit, both within and outside of our school, for free Internet access. I also made sure to give my classes ample time to complete all their work during the class work periods.

The chances for emotions or intentions to be lost in translation due to language and cultural differences, are exacerbated when communicating via text. We discussed that clear communication would be essential and for them to be cognizant that language and learning barriers influence our understanding. Therefore, in addition to the time spent on their devices, face to face time group time would be essential to foster clear and positive communication.

Limitations

At the outset of my inquiry I was on a one year contract at my school. I was teaching full time and although I was almost certain that I would be extended, I had to take provisions to finish my research within that school year, with room for extensions in the following year. I was successful in going through the entire progression of all the stages for which I had planned. I was excited to try the project again with a different set of students, as ability to test, observe,

modify, and re-test strengthens any research. At the end of the school year, I accepted a position as an Education Consultant with SET-BC. In the second year of my Master's classes I would learn about new ideas and techniques from my classmates and professors but unfortunately, I could not integrate these ideas into my inquiry as I was no longer a classroom teacher. Although the change in position hampered my ability to conduct a full second year of research, I was satisfied that I had completed my inquiry research in the first year.

Another limitation was the difficulty in accessing the limited devices in the school. It was a struggle to get time in the computer labs and when we did get time in the library, it did not have a full class set of computers. Sometimes we would resort to using the school iPad cart, but since Docs is not compatible with the iPad interface many functions, such as the chat pod, could not be utilized. Since the iPads were also very old and slow which caused Docs to often crash. For this inquiry, there was a dependence of a 1:1 ratio of students to devices, which is quite difficult to achieve in a district strapped for resources. Although I did my best to plan and book the labs well in advance of when I needed them, some teachers were not so happy that I was booking the "nicer" labs for consecutive weeks. I discussed with the administrator to consider purchasing a laptop cart in the future as laptops are much more versatile and can be used in many different environments.

Since the Vancouver School District is a linear system, with Pro-D days and other occurrences in the school schedule, the most I could see these sets of students was three times a week and sometimes as less as once a week. This increased the total number of weeks needed to complete a lesson or activity. This was especially difficult at the outset of my inquiry as we needed to have our debate by the election date in October. Although Docs helped foster communication between the students and myself on the alternate days and even on the weekend,

a semestered school system would help with delivering and executing clear and consistent lessons and projects.

Curriculum Analysis

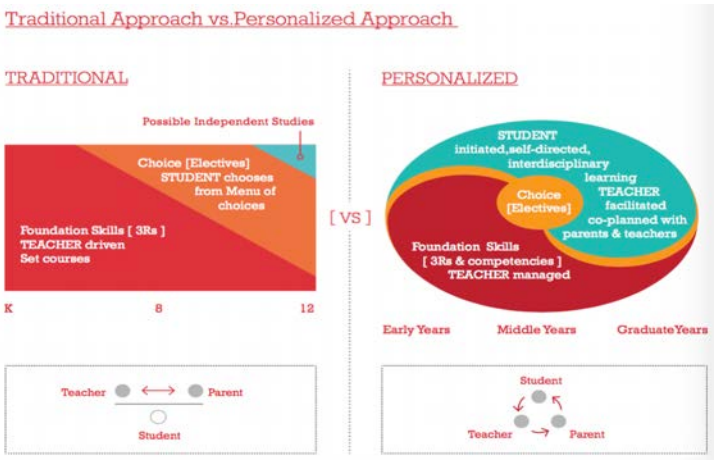
It is an exciting time in British Columbia. The time has come to transform our curriculum and the framework from which we teach. I will no longer have to assign the same textbooks and teach the exact same things that I learned as a student sitting in the exact same classroom fifteen years ago. An overhaul of our past system will progress to 21st century learning and teaching methods. But what does this precisely mean and how exactly will our curriculum change? My research is embedded in the ideas of the new curriculum and the learner-centered ideology.

The underlying assumption of education in a learner-centered framework is to allow students to discover the knowledge that they would like to learn. Teachers still play a vital role in the learning process, as they guide, observe and assess students. They set up learning environments to enhance personal learning and maximize individual growth. Through the readings of Piaget (1936), it can be surmised that at the core of this ideology is the understanding that learners develop at different stages and therefore they should not be subjected to standardized testing. Instead, a process of ongoing assessment, by both teachers and students, is more beneficial. Students need to engage in meaningful activities, so they can create meaning for themselves within the classroom and the larger world. This constructivist learning approach fits seamlessly with the learner-centered ideology.

In British Columbia's last updated Education Plan (British Columbia Ministry of Education, 2015) the previous Minister of Education, Peter Fassbender, states the world is "changing rapidly and we owe it to our students to keep pace" (p. 1). I wanted to conduct an inquiry that was cutting edge and dealt with a web-based program that some, but not all, of the students were already using. This meant that the findings would contain perspectives of both

users and nonusers of Docs. As the Ministry is shifting to more student-centered learning, allowing students to use another means of representation and collaboration, such as Docs, furthers the idea of personalized learning.

Figure 8. Traditional Approach vs. Personalized Approach



Source: BC Education Plan, 2015. p.15.

The various stakeholders realized there was a need for a more personalized learning (Figure 8) experience set out in a curriculum with broader big ideas and core and curricular competencies. A shift from *knowing* to *understanding* (Figure 9) is now possible in the new curriculum as the learning objectives transform from concrete to abstract. Students will still learn basic literacy and numeracy skills but at the same time there will be emphasis on learning key competencies such as self-reliance, critical thinking, inquiry, creativity, problem solving, innovation, teamwork, and collaboration.

Figure 9. Curriculum Model

Source: Screenshot taken from https://curriculum.gov.bc.ca/curriculum-info

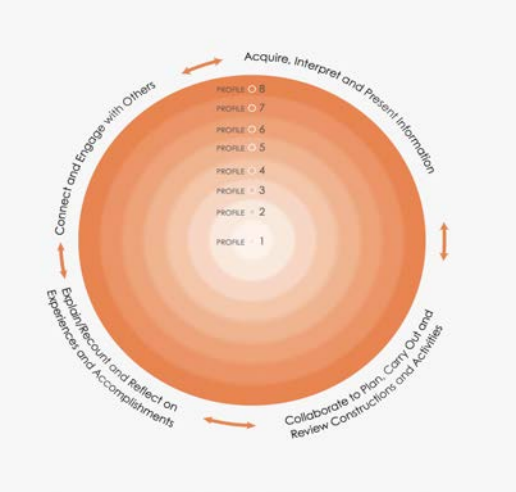
The Ministry continuously repeats the sentiment that children will have now have choice in their activities and learning, but this is over simplified. Students will only get to make choices from what the teacher, confined by her or his classroom resources and skill set, can offer them. District funding will play an integral role in minimizing overcrowding in classrooms and replacing equipment and textbooks that are in disrepair. However, the Education Plan does not address the issues of funding. The Ministry is on the right track of creating personalized learning, but it does not detail exactly what it will look like or elaborate on the generalized statement of "choice."

Core competencies

Core competencies are "sets of intellectual, personal, social and emotional proficiencies that all students need to engage in deep and life-long learning" (British Columbia Ministry of Education, 2016). They are split into three categories: communication, thinking, and personal and social. Since these competencies transcend grade levels and subject areas, they will ensure

that students are fully engaged in their learning at each stage of their development. The incredible shift to learning as praxis is very evident. Each competency progresses from basic skills at the elementary level to independent learning skills at the secondary level. The concentric circles (Figure 10) ensure that the process of growth is both progressive and additive and make teachers, students and parents aware that it is acceptable for students to progress at different levels. The debate project using Docs met all the communication competency profile principles. Using web-based software to create and collaborate adds another layer to the learning process. For students who become anxious when communicating face to face, Docs provides another medium for communication and collaboration to occur.

Figure 10. Communication Competency Profile Concentric Circle



Source: Screenshot taken from https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/CommunicationCompetencyProfiles.pdf

The profiles also focus on "I" statements which ensure that students are learning at their own pace, instead of "we" statements from the old curriculum in which students in the same grade were expected to be at the same level by the end of the school year. These profile statements focus on stimulating growth in students to help create curiosity and meaning for

themselves. For example, Figure 11 is an excellent exemplar of how students are placed at the center of their learning.

Figure 11. Communication Profile

Screenshot taken from https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/CommunicationCompetencyProfiles.pdf

The communication competency profile focuses on providing students with the ability to acquire, interpret and present information, while also giving them the skill set to connect and engage with others through collaboration. This two-fold way of being able to communicate independently and through working with others is at the center of student success in this new curriculum. The creative and critical thinking competencies focus on being able to generate, develop, analyze, question, and investigate ideas. Dewey (1916) recognized the importance of critical thinking in all subject matters through the active participation in meaningful activities. I considered the competency profiles when selecting Docs for my inquiry project. My students were given the chance to communicate with their classmates in a way that was more familiar and organic to them. In addition, students had to complete their research independently, but also had to work together and collaborate with their group on the Docs to formulate a plan for the debate

that was going to coincide with the Federal Election. This made the project more relevant and meaningful for the students.

The last three core competencies focus on: positive personal and cultural identity; personal awareness and responsibility; and social responsibility. Personal awareness and responsibility is an integral part of personalized learning. Students need to master self-determination and regulation techniques to become active in their learning and to be able to effectively collaborative with others. Intrinsic value is of the utmost importance. For example, if we let students choose their own inquiry project, they need to be able to self-motivate and self-regulate to complete their project on time and to the best of their abilities. I allowed students to select their own groups for the second Docs project to observe if they would be able to self-regulate and be more intrinsically motivated.

Although the social responsibility and positive personal and cultural identity profiles contain "I" statements, there is an implicit focus on a social reconstructionist view. For example, "I can initiate positive, sustainable change for others and the environment." Although Vygotsky (1978) realized that learning was a social process in which engagement with others and the environment was necessary to make sense of the world, students still need to concentrate on merely living and focus on their present needs instead of having pressure to make changes in the world in the future.

Social Studies 10 and 11 Draft Curricula

The new draft of the Social Studies 11 makes it clear that everything previously taught in that course will be pushed down to Social Studies 10 (Appendix E). The present Social Studies 10 curriculum, updated in 2006, focuses on Canadian content from 1815 to 1914. There is a

focus on "knowing" rather than "understanding." The few "applications" (similar to the new curricular competencies) are heavily outweighed by the copious amounts of prescribed learning objectives. The new draft curriculum takes a dramatic shift to more student-centered, 21st century learning concepts. There has been tremendous progress in altering the objectives from the concrete to abstract and adjusting the vocabulary used in the draft curriculum.

Prior to entering Social Studies 10, students will have been introduced to European and North American content from 1500 to 1815, with a specific concentration on Canadian studies leading up to 1919. The new Social Studies 10 curriculum essentially replaces the old Social Studies 11 course, as it will focus on Canada and the World: 1919 to the present. Social Studies 11, and the infamous standardized year-end provincial will be terminated. In its place, for the grade 11 credit, students will have to select at least one Social Studies elective out of six options: 20th Century World History 11, Asian Studies 11, B.C. First Peoples 11, Comparative Cultures 11, Human Geography 11, and Political Studies 11. Although my inquiry project was based on my Social Studies 11 classes, G Suite applications can be used in any grade, according to the draft curriculums, the political debate and World War Two project would now take place in Grade 10.

Big Ideas

The following big idea in the Social Studies 10 curriculum, "Global and regional conflicts have been a powerful force in shaping our contemporary world and identities" signifies that there will be a focus on making connections to the past to explain the present and predict the future (BC Ministry of Education, 2017). This was a goal of the present Social Studies 10 curriculum, but never manifested since course content only went up to the year 1914. Even the

Social Studies 11 curriculum and accompanying textbook only went up to the year 2000. If teachers wanted to examine contemporary issues, they would be limited by time constraints of having to cover all the prescribed learning objectives in preparation for the provincial examination. Students and teachers will now have the flexibility and opportunities to make real connections with the past, present and future.

The big ideas focus on politics, ideologies, economies, geography and the influences on societal change, while maintaining the importance of considering multiple perspectives. The first two big ideas focus on global studies, while the remaining two focus on Canadian studies (Appendix E). Therefore, students will have opportunities to explore a wide range of topics, which are not limited to Canadian studies. In our diverse BC schools, students will enjoy the opportunities to engage in studies that will be more applicable to their backgrounds or interests.

Curricular Competencies

The curricular competencies have a lot of similarities with the core competencies, in that there is a focus on critical thinking, analyzing and assessing, and multiple perspectives. Missing in the curricular competencies is the mention of collaboration, project-based learning or assessment. The Social Studies 10 curriculum contains many key changes in terminology. Instead of the statement "students *will be* able to" this new curriculum draft states "students are *expected* to be able to." The content portion of the new curriculum is much more difficult to analyze under a learner-centered lens as it simply focuses on "knowing." Nevertheless, the number of content objectives has decreased to six organizers and each of those is broad enough for teacher interpretation and student exploration.

Overall, the transformative shift from the present to the draft Social Studies 10 curriculum will provide teacher flexibility and countless opportunities for students to engage in the subject matter of their choice. The transition from concrete to abstract learning outcomes will open the curriculum to foster learner-centered personalized learning. Since there is no provincial or standardized testing for this grade level, teachers will have more time to experiment with other teaching and learning tools such as G Suite. Students themselves may be more intrinsically motivated to invest more time in their work if they are given the option of using G Suite applications such as Docs and Slides for individual or group projects. Using G Suite in the classroom is a way to address the creation, collaboration and communication focus of the Social Studies curricular competencies.

ADST Curriculum

The new ADST curriculum can be applicable across all subjects and grade levels. Using G Suite as an alternate form of creation, collaboration, representation and storage can help further the use of technology in every subject. The many ways in which you can use Docs and Slides compliments the grade 9 ADST big idea, "Complex tasks require different technologies and tools at different stages" (BC Ministry of Education, 2017). In Figure 12, I have examined how G Suite can be used to meet specific ADST curricular competencies.

Figure 12. Relationship between ADST Curricular Competencies and G Suite

ADST Curricular Competency	G Suite applications
Understanding context – engage in research	Research using Google search engine and storing information on Google Drive
Ideating – taking creative risks in generating ideas and add to others' ideas in ways that enhance them	Creating and collaborating with peers using Google Docs and Slides

ADST Curricular Competency	G Suite applications
Testing – Conduct the test, collect and compile data, and decide on changes	Using Google Forms and Sheets to take surveys and create graphs and spreadsheets
Making	Creating presentations using Google Slides
Sharing	All G Suite apps allows for sharing and collaboration. Can be made private or open to the public.
Choose, adapt and if necessary learn about appropriate technologies to use for tasks	Can decide which G Suite app to use for specific tasks

Findings, Analysis, and Interpretation

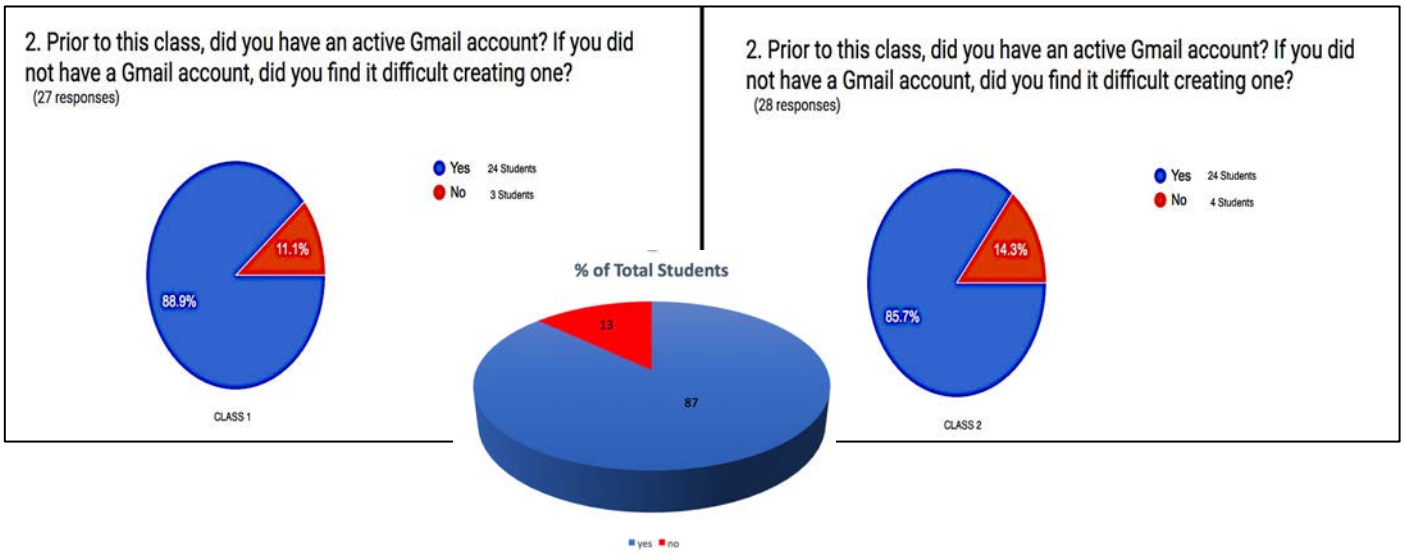
The findings of my qualitative and quantitative data affirmed my beliefs about the collaborative and engagement capacity of using Docs and Slides, while other conclusions surprised me and negated my original viewpoints. I will examine the data based on the two classes that participated in my study. Instead of combining the data of the two classes into one large sample size, I chose to keep the data collected for each class separate to be able to observe the emergence of any consistent or inconsistent patterns. Class 1 had 27 students whereas Class 2 had 28 students. I will use the survey (Appendix I) the students completed after Phase I to provide structure for my analysis and embed qualitative observations and feedback throughout.

Phase I

The first question on the survey was, "Would you consider yourself: male or female?" After printing and copying the surveys, I decided to have the students omit this question. I thought about why this information was important and concluded that it was irrelevant. I told my students that this was not a good question because the answers were limited and it did not promote inclusivity. We had a great class discussion about this question and this mistake of including this question turned out to be a memorable teachable moment.

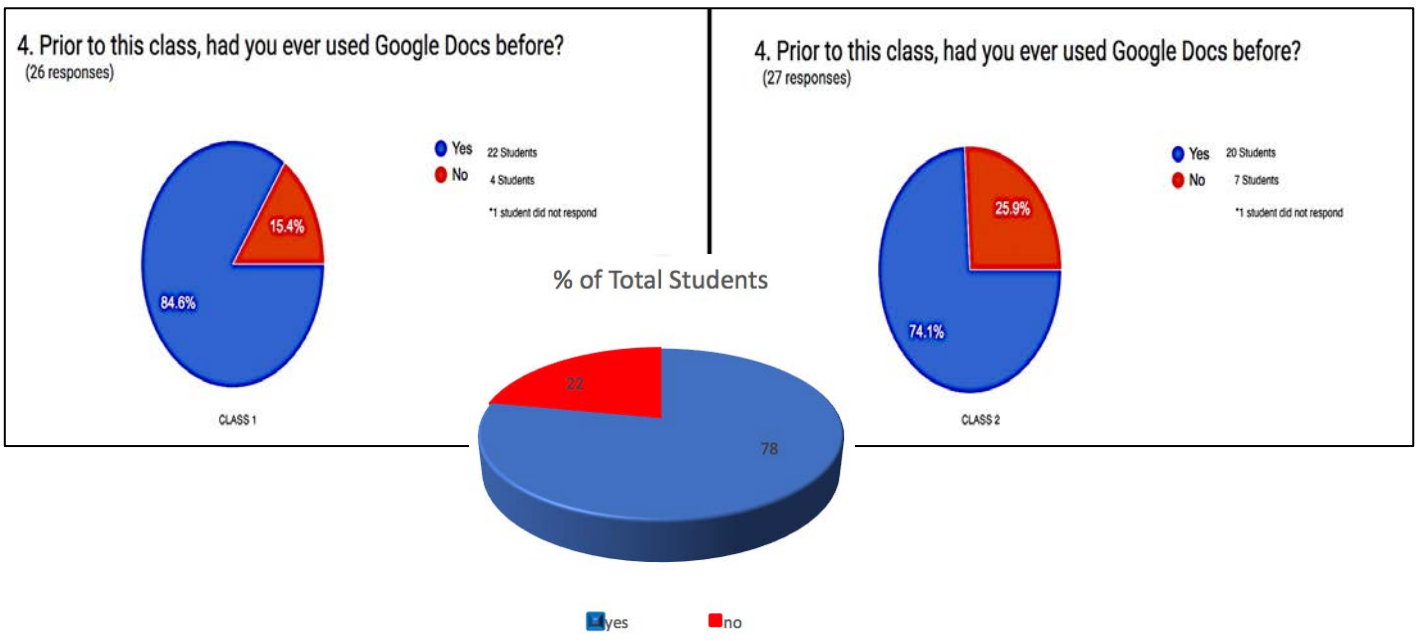
Prior to this project, 87% (48 individuals) of all the students had an active Gmail account (Figure 13). I was surprised to see that only 7 students had no experience with Gmail, as I thought this number would be much higher. An informal survey of the students indicated that the main alternative to Gmail was Hotmail.

Figure 13. Percentage of Gmail account users



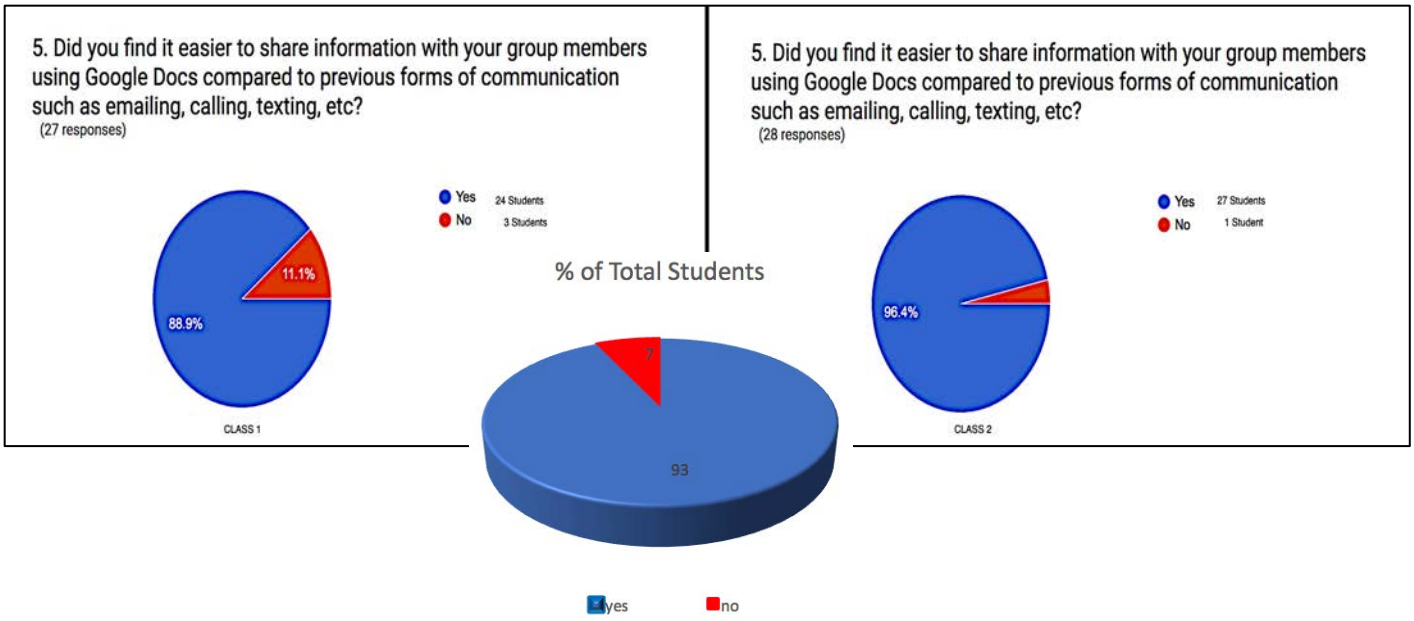
Although most students had Gmail accounts, Figure 14 shows the number of Docs users slightly decreased. From the total sample size, 78% of students had used Docs, whereas 22% had not. Again, the data collected from the two classes was very similar. From an informal survey during our class discussion, the Gmail users that had not used Docs, stated that the reason they had not, was that they did know it existed.

Figure 14. Percentage of Docs users



My next question sought to answer if Docs made it easier for students to share information with their peers compared to using traditional forms of communication such as calling, emailing or texting. Out of the total sample size, 93% or 51 students answered yes while only 7% or 4 answered no (Figure 15).

Figure 15. Feedback on ease of communication using Docs



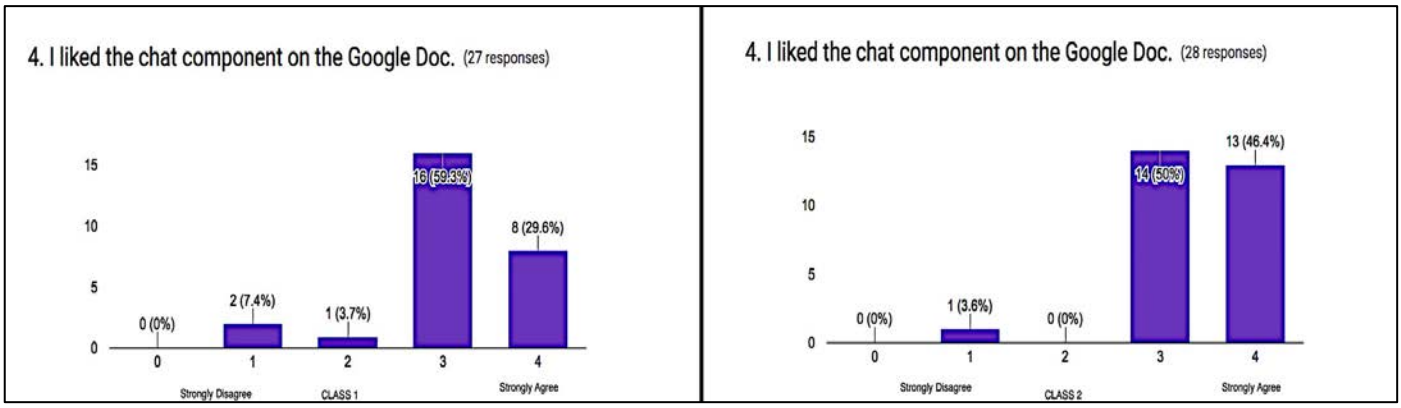
To corroborate this data, in the open-ended section of the survey, when asked to fill in "What I enjoyed the most about using Google Docs for this activity," most students focused on the ease of communication using Docs:

- "clear, clean communication"
- "easily accessible"
- "easy to peer check others work"
- "Teamwork was a crucial aspect in this project, so my favourite part was being able to communicate with my group members as they were working."

- "It's quicker than writing things out"
- "Group mates could help at the time when needed"
- "Chat function made communication easy"

The majority of students also felt that the chat pod strongly enhanced their user experience (Figure 16). A reoccurring statement during class discussions was that instant messaging in the chat made it easy and fun to communicate "just like in real life." My students felt that working online on a shared Doc was natural to them, since they are so used to networking with multiple people online via texting in group chats or posting on various social media sites. It is clear that as educators, we need to incorporate the communication styles of our Gen-Z students into our class activities to foster student collaboration and engagement.

Figure 16. Percentage of students that enjoyed using the Chat pod in Docs



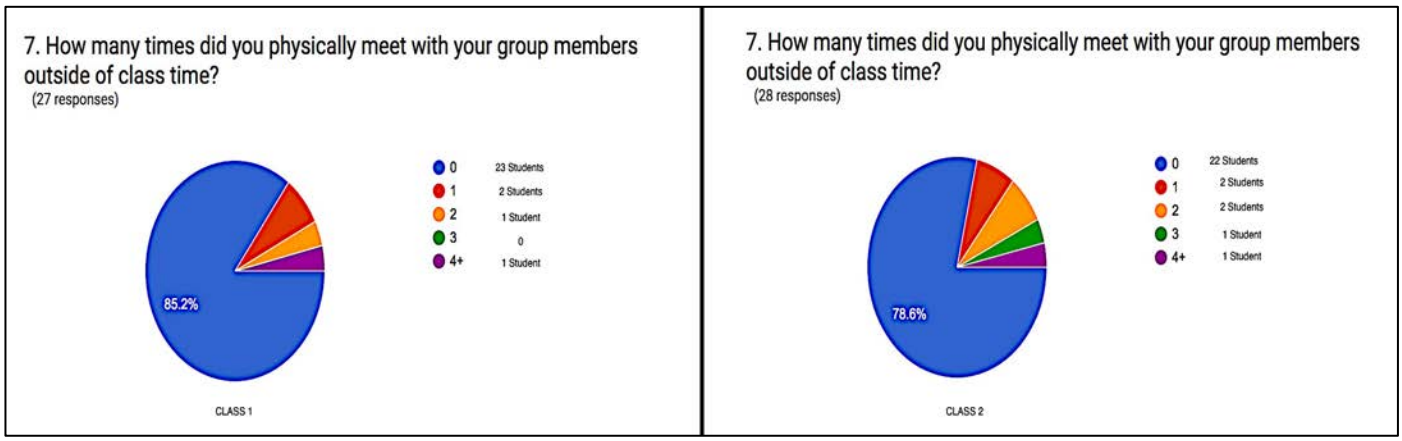
Docs made a positive difference for some of my students with learning impediments or disabilities. One of my students that is hard of hearing commented how she finally felt completely included in a group activity since she could see what her groupmates were typing in the group chat and did not need to depend on reading lips. Her support worker noted a remarkable difference in her engagement and stated she is going to pass this information along to

this student's other teachers. My English language learners also enjoyed using the text to speech options on their iPads to help with reading comprehension on their Docs.

From the analysis of students' written comments and through class discussions, a reoccurring theme when reviewing communication was "the ability to help." Since students found it very easy and convenient to communicate with each other via Docs, they found that they were helping each other much more. My conclusion is that if students are given the opportunity to communicate with each other inside and outside of class time through a convenient, digital, easy, fast, online and organic medium, they will be more inclined to help their peers.

Most students did not meet outside of class time to work on their group project (Figure 17). While analyzing the data in Figure 17, it became clear that there might be a lack of reliability in in students' answers. The responses from the survey show that one student in each class met with their group at least 4 times or more outside of class time. Since this would require that they would have met with at least one other member from their group, the answer is not completely reliable. A few students commented that they missed the face to face interaction inside and outside of class time. For the next project, I decided that I should take a blended model approach and at least one class period would have groups meet completely face to face without any technology.

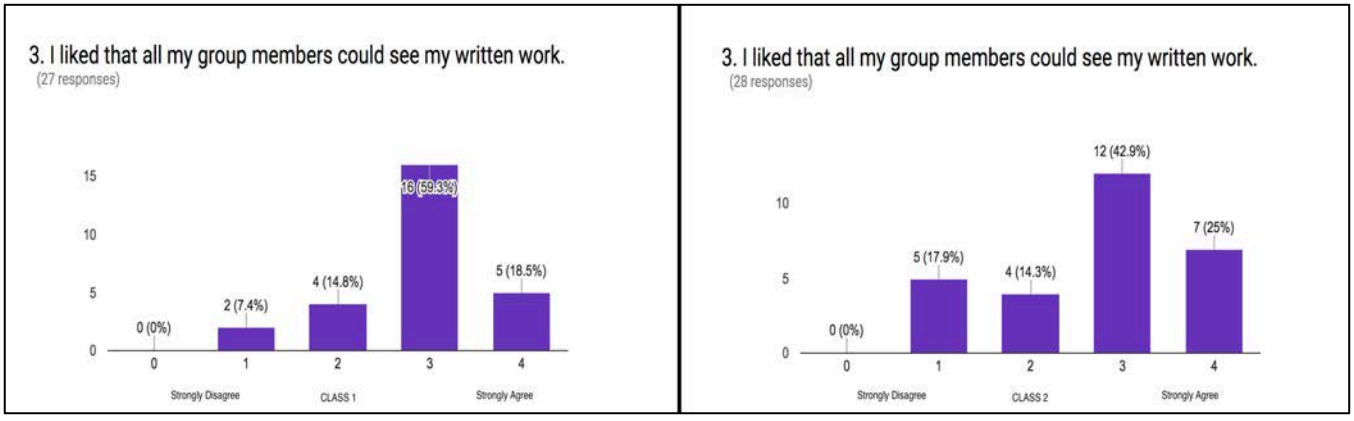
Figure 17. Percentage of the number of times students met outside of class time



Nevertheless, during class discussions, students voiced that there was no need to physically meet outside of class time since they all had access to their group Doc and could collaborate online. A few groups stated that on the weeknights or weekends, they set specific times for all group members to log on to "meet" on the group Doc. This signifies that although students can do their work asynchronously using Docs, about half of the students still feel the need to work together online, but not physically face-to-face, at the exact same time.

A component of Docs that garnered mixed reactions was the ability of group members to see what was being written at all times. Figure 18 reveals that 73% of students either strongly agreed or agreed that they liked this component, while 27% students either strongly disagreed or disagreed.

Figure 18. Feedback on group members being able to see each other's written work



A sample of the survey comments about their dislikes about Docs included:

- "People can watch what I'm doing at all times"
- "It's stressful when people are watching what I'm writing"
- "People will know I am not working on the project"

Through class discussions students came up with the idea that in the future, if anyone felt uncomfortable typing in real time and having their peers watch them, they could create a private Doc and then copy and paste their final product onto the group Doc. This was a great strategy that was implemented for Phase II of the inquiry project.

Conversely, many students enjoyed the real-time collaborative capabilities of Docs. They positively remarked:

- "I enjoyed the immediate peer feedback"
- "Live editing was possible for myself and my group members"
- "We could see each other's work immediately," "We could see who was not doing their part," "Quick access to everyone's work"
- "Real-time edits, whenever we would see stuff on the Internet we would send each other links right away and paste them on our group member's section"
- "Could see who was struggling and send each other links or help each other right away"

Students realized that even though not everyone was comfortable with exposing their work in real-time, they got a lot more accomplished and in a shorter span of time since they could see who needed help and view the overall progress of their group.

If students were uncomfortable with their peers watching them work in real-time, having their teacher view what they were doing would not fare any better. Figure 19 shows that while 72% of students agreed that they liked that I could see their group's progress, 28% disagreed. However, when asked if they liked that I could provide them immediate feedback, 91% agreed while 9% disagreed (Figure 20). Some students expressed that it was intimidating having me on their Docs as they felt like they could not be themselves with me watching. Yet, the general

sentiment was that students enjoyed being able to chat with me and ask me questions on the Doc both during and after class time. Students also commented that having me on the Doc increased accountability and therefore took away their stress about groupmates that were slacking off. Although much of the responsive was positive, since my students had demonstrated excellent digital citizenship during this project, I decided that for Phase II, I would not be on their Docs or Slides.

Figure 19. Students feedback on the teacher being able to see their group progress

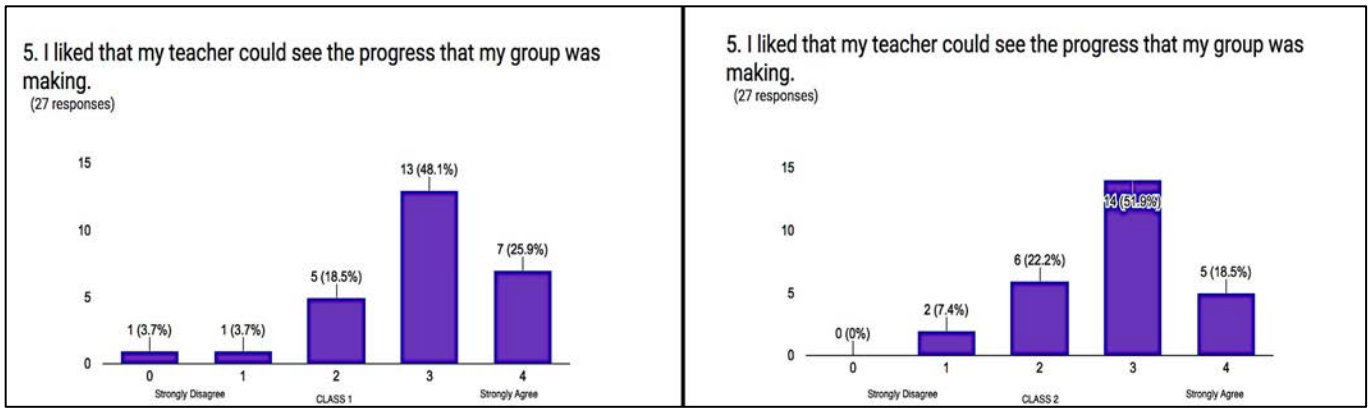


Figure 20. Students feedback on the teacher being able to provide immediate feedback

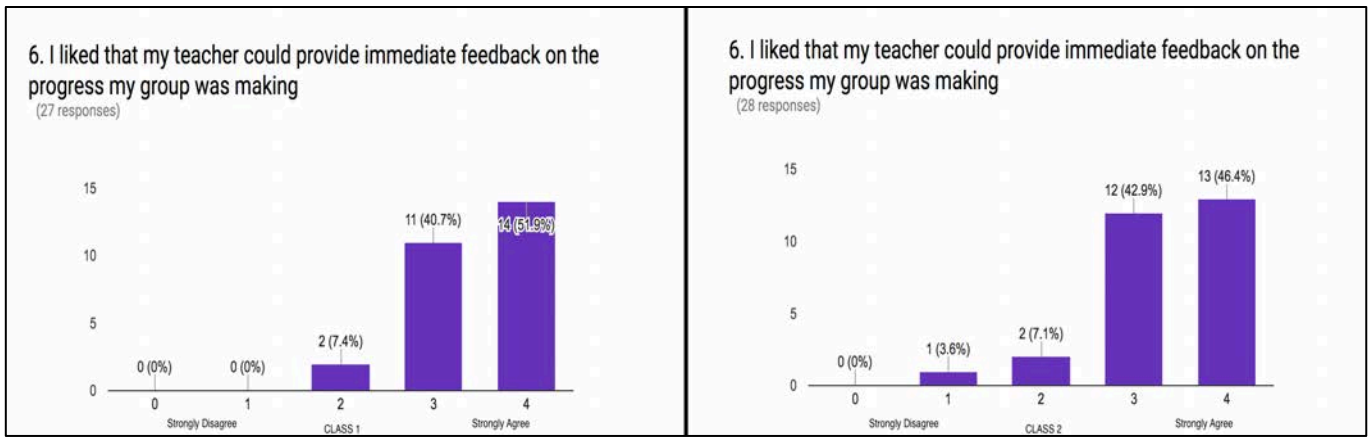


Figure 21 shows that 89% of students stated they would want to use Docs again for group projects in my class. Yet in Figure 23, only 76% of students stated they would like to use Docs in other classes. This number stayed the same when asked if they would like other teachers to assign projects using Docs (Figure 22). When analyzing why this number dropped when it came to other classes, students that their hesitation had to do with the perceived competency of other teachers. They feared it might create more work for them if other teachers did not know how to use Docs properly for group projects. They also liked the idea that they could currently freely use Docs at their own will. They strongly expressed that they would definitely not want some of their teachers on their Docs so they rather other teachers not know about it. Overall, students felt that since they were comfortable using Docs in my class, they would like to expand to using Slides in Phase II.

Figure 21. Percentage of students wanting to use Docs again for group projects

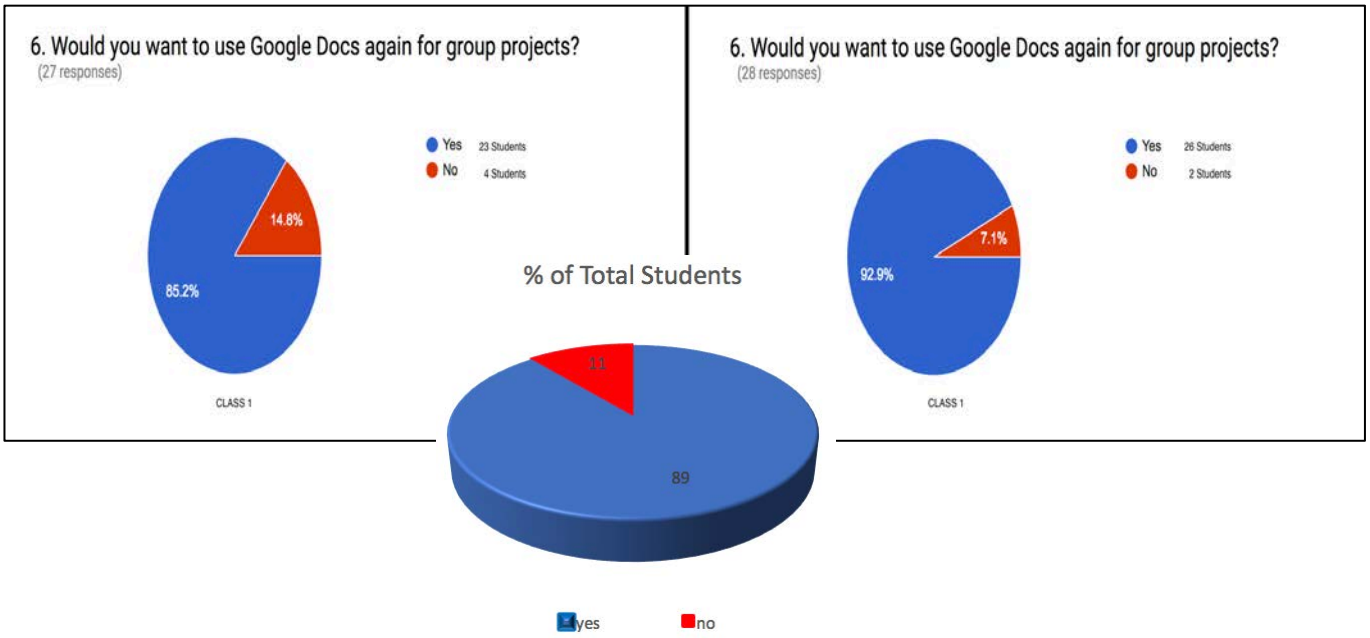


Figure 22. Would students like teachers to assign projects using Docs in other classes

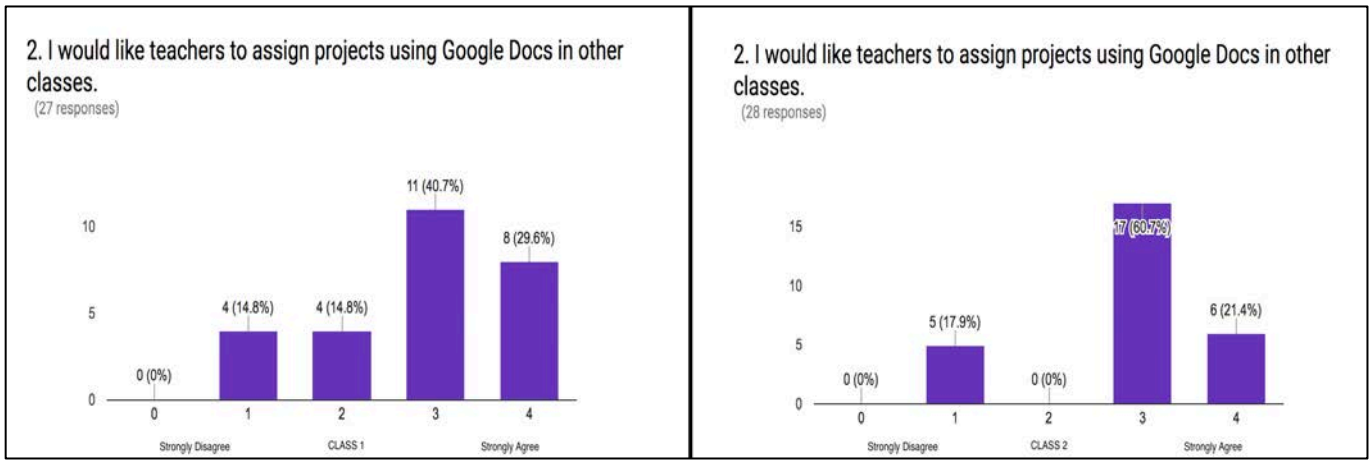
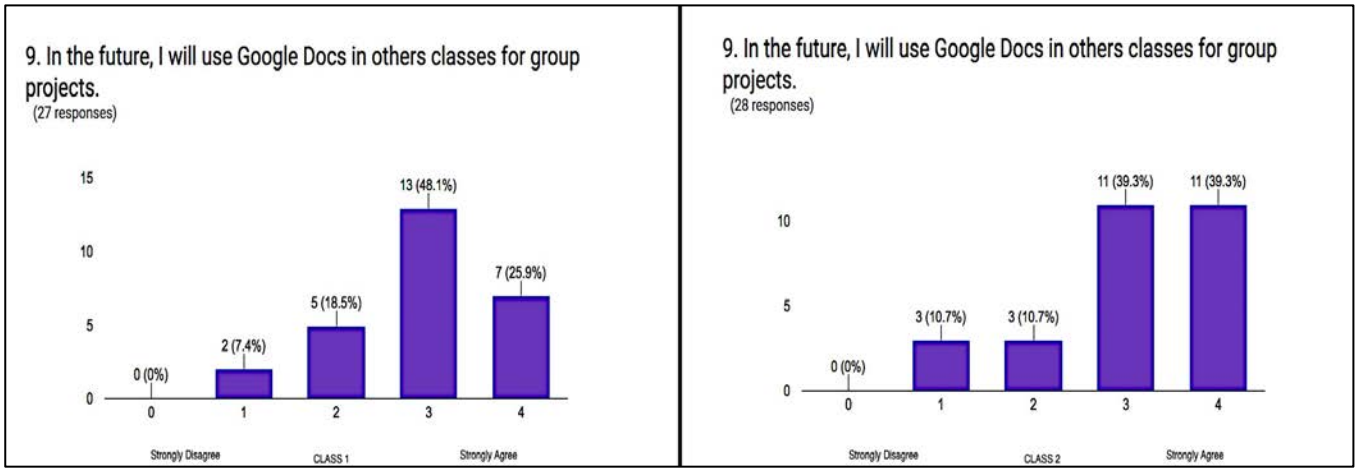


Figure 23. Feedback on if students will use Docs for group projects in other classes



Overall, 89% of students felt that using Docs made the project easier, while 80% felt that it was more enjoyable (Figures 24 and 25). The ease of communication and collaboration really stood out to all the students. They enjoyed connecting and interacting with some of their peers on a different level through a different medium. Although they were sad the project was over, they were excited that we would be using Docs again and looked forward to adding Slides to the next group activity.

Figure 24. Feedback on if Docs made the project easier

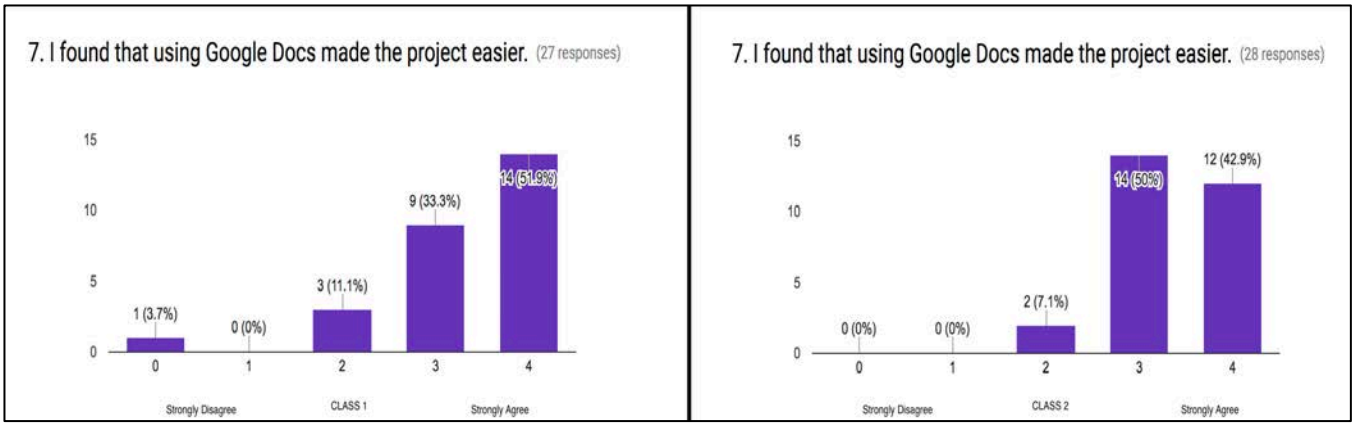
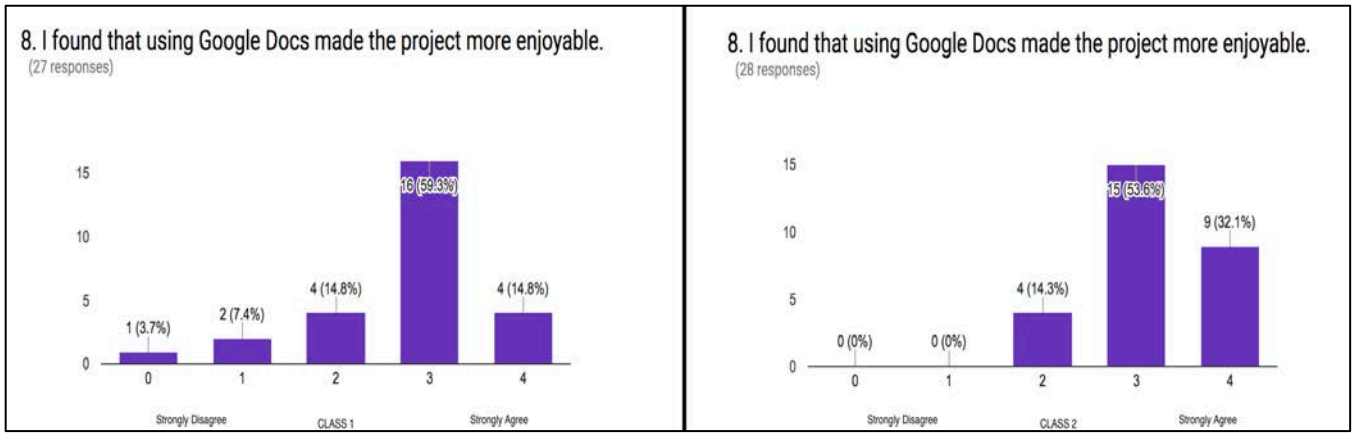


Figure 25. Feedback on if Docs made the project more enjoyable



Phase II

For Phase II of the inquiry, I chose not to conduct a formal written survey at the end of the project, but rather focus on my observations and student feedback throughout the duration of this phase. Since students already had their Gmail addresses and were now familiar with this application, we did not have to spend any time on tutorials or setting it up. Students were given the opportunity to share some tips they had picked up during the last project. The main concern was to have everyone participating on the chat and reading the history once they logged on so they could stay current with the details of the project.

The Slides tutorial was very simple as my students immediately understood its functions as they were very similar to Docs and PowerPoint. Throughout the course of this phase, as a result of my students choosing their own groups, I noticed that this time group members always sat together in the computer lab and library and spent more time discussing the project face to face. Towards the end of the project, students had one class to meet with groups without the use of technology. Students really enjoyed this and felt that this session really enhanced group connectivity as they were able to see each other's emotions, excitement and frustrations during this face to face collaboration. Students commented that there should always be at least one day of meeting face to face for group projects.

Students had mixed emotions about me not being on the Docs and Slides. Although they enjoyed their privacy, they did not like that they could not communicate with me online and get immediate feedback. Many students said that it would have been beneficial if I could see their slides so they could ask me specific questions about them and I could easily respond to them. I wondered what a solution could be to this problem and how to achieve some sort of balance. My students came up with a great idea, they stated that from the outset, I should not be on the slides but they could temporarily add me to ask questions or to receive feedback. Others suggested that it should just be the group's choice and the option of having me on their Docs or Slides should be optional since some groups really wanted me on them for the entire duration. I liked the idea that it did not have to be all or nothing. Therefore, I proposed that in the future, my students could have the options of not adding me at all, adding me for a temporary period, or adding me for the entire, duration of the project.

Conclusions

If students are given the opportunity to communicate with each other inside and outside of class time, through a digital, organic, easy, convenient and fast medium, they will be more engaged and inclined to help their peers. Collaborating online on a shared Doc is natural to our Gen-Z students, since they are used to networking with multiple people online via texting in group chats or posting on various social media sites. It is possible for educators to teach and model appropriate digital citizenship and develop appropriate use policies and online codes of conduct for all students to appreciate and follow. It is clear that incorporating the communication styles of our 21st century learners into our class activities increases student collaboration and engagement.

Online collaboration can also help students with various disabilities. One of my students that is hard of hearing stated she finally felt completely included in a group activity since she could see what her groupmates were typing in the group chat and did not need to depend on reading lips. Her support worker noted a remarkable difference in her engagement and she stated she is going to pass this information along to this student's other teachers. My English language learners also enjoyed using the text to speech options on their iPads to help with reading comprehension and improve their writing. Overall, the free G Suite applications can help promote inclusiveness in traditional classrooms where resources are limited and students need adaptations to succeed.

Although students can do their work asynchronously using Docs, they still feel the need to work together online at the same time, but do not necessarily need to be physically face to face. Students do feel that meeting face to face at least once reinforces group connectivity as it

provides them a chance to verbally communicate while being able to see each other's emotions, frustrations and reactions.

Teachers need to be sufficiently trained and be willing to accept the time commit of providing instantaneous feedback to students if they want to successfully and meaningfully implement Docs or Slides in their classrooms. Teachers would have to find a balance to avoid more onerous work for themselves.

The Delta and Victoria school districts have successfully transitioned to use G Suite apps by implementing Google Apps for Education (GAFE). These are more controlled than the "public" G Suite apps as they are controlled by the school district. Advertisements and third-party access to student information and work is blocked. Since the secure servers are still located outside of Canada, students and parents are both required to consent forms. Other school districts, such as Quesnel and the Comox Valley, are currently following in Victoria's footsteps to become authorized GAFE districts. The Vancouver School Board is currently a Microsoft district and unfortunately OneDrive, PowerPoint, and Word have very limited online collaboration capabilities. The Google era continues to grow, has a great market in our student population and contains meaningful educational applications. Districts will need to take further steps to ensure that the Google servers being used are located in Canada to guarantee student data are kept private and safe.

Future Considerations

1. What procedures and guidelines should districts follow to become Google districts?
2. How can Google Classrooms be used as an effective platform for teacher and student collaboration and transmitting resources?

3. How can Google extensions (e.g., Google Read and Write) be added to G Suite applications for educational and adaptation purposes?

4. How do the online collaboration capabilities of G Suite compare to Microsoft programs?
5. How can other digital and online collaborative technology (e.g.,, Explain Everything) be used in the classroom to enhance student collaboration and engagement?

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Appendices

Appendix A

Literature References for Key Concepts and Subtopics

Key Concepts	Subtopics	Scholarly Work
Digital citizenship	Definition	Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press. Palys, T., & Atchison, C. (2009). Qualitative research at the gates of the digital age: Obstacles and opportunities. Keynote address for the 10th Annual Advances in Qualitative Methods Conference of the International Institute for Qualitative Methodology. Vancouver, October 2009. Poster, M. (2002). Digital networks and citizenship. *PMLA, 117*(1), 98-103. Prensky, M. (2001). Digital natives, digital immigrants, part 1. *On the Horizon, 9*(5), 1-6. Young, D. (2014). A 21st century model for teaching digital citizenship. *Educational Horizons, 92*(3), 9-12.
	Digital literacy	AASL. (2009). *Standards for the 21st century learner in action.* Chase, Z., & Laufenberg, D. (2011). Embracing the squishiness of digital literacy. *Journal of Adolescent & Adult Literacy, 54*(7), 535-537. Eshet-Alkalai, Y., & Soffer, O. (2012). Navigating the digital era: Digital literacy: Socio-cultural and educational aspects. *Journal of Educational Technology & Society, (15)*2, 1. Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press. Ralph, R. (2015). 21st century learning: Defined and actualized. Unpublished manuscript.
	Digital divide	Attewell, P. (2001). The first and second digital divides. *Sociology of Education 74*(3), 252-259. Carrizales, T. (2009). The Internet citizenry: Access and participation. *Public Administration Review. 69*(4), 350-353. DiMaggio, P., Hargittai, E., Celeste, C., & Shafter, S. (2001). *From unequal access to differentiated use: A literature review and agenda for research on digital inequality.* New York: Russell Sage Foundation. Eshet-Alkalai, Y., & Soffer, O. (2012). Navigating the digital era: Digital literacy: Socio-cultural and educational aspects. *Journal of Educational Technology & Society, (15)*2, 1. Leung, L. (2010). Effects of Internet connectedness and information literacy on Quality of life. *Social Indicators Reasearch, 98*(2), 272-290. Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press.

		Ono, H., & Zavodny, M. (2003). Gender and the Internet. *Social Science Quarterly, 84*(1), 111-121. Prensky, M. (2001). Digital natives, digital immigrants, part 1. *On the Horizon, 9*(5), 1-6. Smith, M. (2002). Ballot initiatives and the democratic citizen. *Journal of Politics, 64*(3), 892-903.
	Increases civic engagement	Carrizales, T. (2009). The Internet citizenry: Access and participation. *Public Administration Review. 69*(4)*,* 350-353. Morison, J. (2010). Gov 2.0: Towards a user generated state? *The Modern Law Review, 73*(4), 551-577. May, V. (2000). Politics, Internet assignments and civic knowledge. *College Teaching, 48*(2), 43-46. Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press.
	Educational enhancement	DiMaggio, P., Hargittai, E., Celeste, C., & Shafter, S. (2001). *From unequal access to differentiated use: A literature review and agenda for research on digital inequality.* New York: Russell Sage Foundation. Kuehn, L. (2008). Education and technology: Cell phones: to ban or not to ban? *Teacher Magazine Online. 20*(4). O'Brien, H.L., & Toms, E.G. (2008). What is user engagement? A conceptual framework for defining user engagement with technology. *Journal of the American Society for Information Science and Technology, 59*(6), 938. Leung, L. (2010). Effects of Internet connectedness and information literacy on Quality of life. *Social Indicators Research, 98*(2), 272-290.
	Potential risks	Attewell, P. (2001). The first and second digital divides. *Sociology of Education 74*(3), 252-259. Greenhow, C., Robelia, B., & Hughes, J. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, *38*(4), 246-259. Healy, J. M. (1998). *How computers affect our children's minds for better and worse*. New York, NY: Simon & Schuster. Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press.
Virtual Classroom	Web 2.0	Bauleke, D.S., & Herrmann, K.E. (2010). Reaching the "iBored." *Middle School Journal, 41*(3), 33-38. Coiro, J., Knobel, M., Lankshear, C., & Leu, D. (2008). Central issues in new literacies and new literacies research. In J. Coiro, M. Knobel, C. Lankshear, & D. Leu (Eds.), *Handbook of research on new literacies*, 1-21. New York, NY: Lawrence Erlbaum. Cormode, G., & Krishnamurthy, B. (2008) Key differences between Web 1.0 and Web 2.0. *First Monday*, *13*(6). Greenhow, C., Robelia, B., & Hughes, J. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, *38*(4), 246-259. Jenkins, H. (2006) Confronting the challenges of participatory culture:

		Media education for the 21st century. White paper for the MacArthur Foundation. Taranto G., Dalbon, M., & Gaetano, J. (2011). Academic social networking brings web 2.0 technologies to the middle grades. *Middle School Journal, 42*(5), 12-19. Turkle, S. (2002). Our split screens. *Etnofoor, 15*(2), 5-19.
	Virtual workspace/ classroom	Ribble, M. (2011). Digital citizenship in schools: Nine elements all students should know (2nd Edition). Eugene, OR, USA: *ISTE.* Taranto G., Dalbon, M., & Gaetano, J. (2011). Academic social networking brings web 2.0 technologies to the middle grades. *Middle School Journal, 42*(5), 12-19.
	Potential risks	Greenhow, C., Robelia, B., & Hughes, J. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, *38*(4), 246-259. Zhang, J. (2009). Toward a creative social web for learners and teachers. *Educational Researcher, 38*(4), 274-279.
Policy	Regulation	Deibert, R., Palfrey, J.G., Rohonzinki, R., & Zittrain, J. (2008). *Access denied: The practice and policy of global Internet filtering.* Cambridge, MA: MIT press. Healy, J. M. (1998). *How computers affect our children's minds for better and worse*. New York, NY: Simon & Schuster. Mossberger, K., Tolbert, C.J., & McNeal, R.S., (2007). *Digital citizenship: The Internet, society and participation.* Cambridge, MA: MIT Press. Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer.* New York, NY: Basic Books.
	British Columbia Curriculum	Canadians for 21st century learning and innovation. (2012). *Shifting minds: A 21st Century Vision of Public Education for Canada*. Paper presented at the Canada Summit, Kingbridge Convention Centre, Toronto, Ontario. Chase, Z., & Laufenberg, D. (2011). Embracing the squishiness of digital literacy. *Journal of Adolescent & Adult Literacy, 54*(7), 535-537. DiMaggio, P., Hargittai, E., Celeste, C., & Shafter, S. (2001). *From unequal access to differentiated use: A literature review and agenda for research on digital inequality.* New York: Russell Sage Foundation. Senior Management Team. (2013). Memorandum: Draft policy and regulations: Acceptable use of technology and social media policy for employees. Seixas, P. (1994). A discipline adrift in an "integrated" curriculum: History in British Columbia schools. *Canadian Journal of Education, 19,* 99-107.

Appendix B

Age, Gender, & Race statistic of Online Use from 2000 to 2006 in the United States of America

Mossberger et al. (2007)

Who Goes Online?

	% Online in the Year...						
Group	2000	2001	2002	2003	2004	2005	2006
Overall	46	59	61	63	63	68*	73
Men	49	60	62	65	66	69	74
Women	44	58	59	61	61	67	71
Whites	48	61	62	64	67	70	73
Blacks	35	50	48	51	43	57	61
Hispanics**	40	53	61	62	59	70	76
18–29	64	75	78	83	78	84	88
30–49	56	68	70	73	74	80	84
50–64	36	58	55	59	60	67	71
65+	12	17	22	22	25	26	32

For 2005 and 2006: "Do you use the Internet, at least occasionally? Do you send or receive e-mail, at least occasionally?"

Prior to 2005: "Do you ever go online to access the Internet or the World Wide Web, or to send or receive e-mail?"

* 2005 Internet use in this box is based on the May–June 2005 survey, which showed that 68 percent of Americans had used the Internet at least occasionally. Box 1.1, earlier in the book, used the tracking surveys, which contain somewhat different questions, and which showed that 67 percent had used the Internet in February–March 2005.

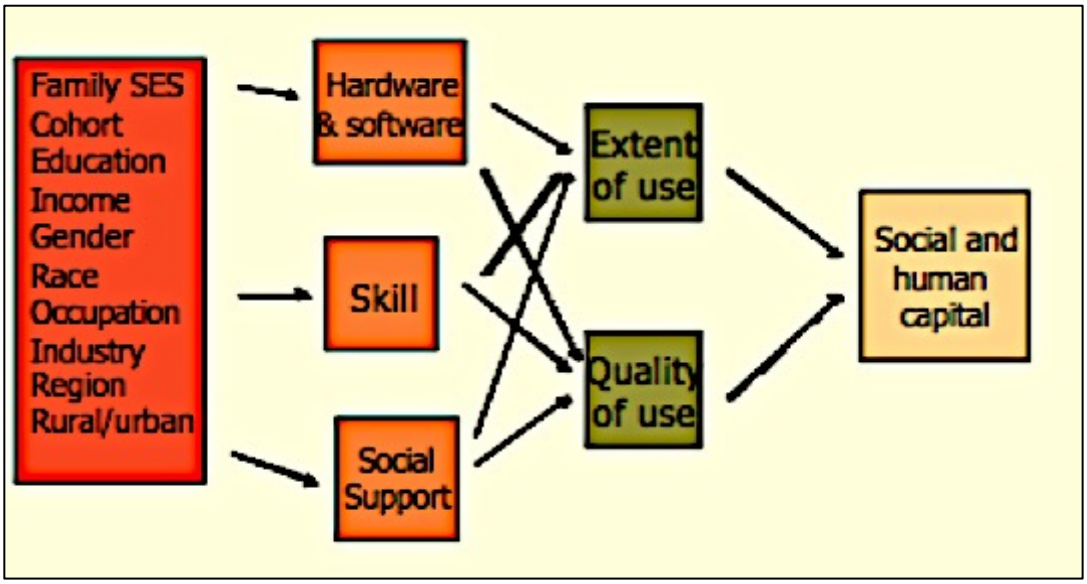
** English-speaking Hispanics only.

Note: The data for the year 2000 is from March 2000, which was the first survey reported by the Pew Internet and American Life Project. The 2001 data are from August–September. Data from the following years are approximately one year apart: September 2002, August 2003, May–June 2004, May–June 2005, and February–April 2006. For most of the surveys included here, it can be said with 95 percent confidence that the error attributable to sampling and other random effects is plus or minus 2 or 3 percentage points. Samples are weighted to correct for known biases.

Appendix C

Impact of Internet Access on Life Chances

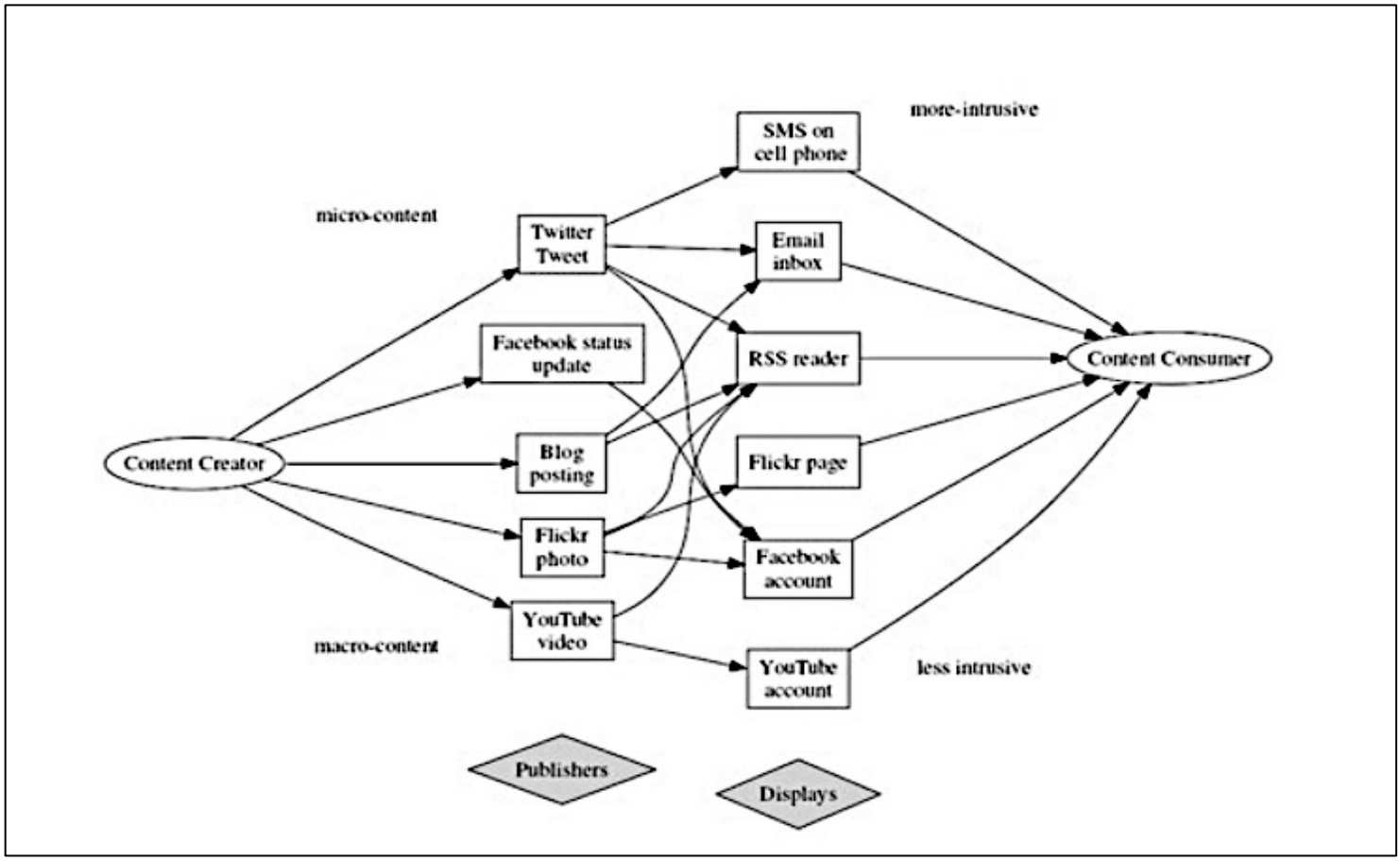
DiMaggio et al. (2001)



Appendix D

Paths from content creator to consumer in Web 2.0

Cormode, G., & Krishnamurthy, B. (2008)



Appendix E

Social Studies 10 Draft Curriculum

British Columbia Ministry of Education. (2017). *BC's New Curriculum.* Retrieved from https://curriculum.gov.bc.ca/

BRITISH COLUMBIA
Ministry of Education

Area of Learning: SOCIAL STUDIES — Canada and the World: 1919 to the Present **Grade 10**

BIG IDEAS

Global and regional conflicts have been a powerful force in shaping our contemporary world and identities.	The development of political institutions is influenced by economic, social, ideological, and geographic factors.	Worldviews lead to different perspectives and ideas about developments in Canadian society.	Historical and contemporary injustices challenge the narrative and identity of Canada as an inclusive, multicultural society.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following:	*Students are expected to know the following:*
• Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions • **Assess the significance of people, places, events, or developments, and compare varying perspectives on their significance at particular times and places, and from group to group (significance)** • **Assess the justification for competing accounts after investigating points of contention, reliability of sources, and adequacy of evidence (evidence)** • **Compare and contrast continuities and changes for different groups during this period (continuity and change)** • **Assess how prevailing conditions and the actions of individuals or groups influence events, decisions, or developments (cause and consequence)** • **Explain and infer different perspectives on past or present people, places, issues, or events by considering prevailing norms, values, worldviews, and beliefs (perspective)** • Recognize implicit and explicit ethical judgments in a variety of sources (ethical judgment) • Make reasoned ethical judgments about actions in the past and present, and determine appropriate ways to remember and respond (ethical judgment)	• **development, structure, and function of Canadian and other political institutions, including First Peoples governance** • **political and economic ideologies and the development of public policy** • **changing conceptions of identity in Canada** • **Canadian autonomy** • **domestic conflict and co-operation** • **discriminatory policies and injustices in Canada and the world, such as the Head Tax, the Komagata Maru incident, residential schools, and internments** • **international conflicts and co-operation** • **human–environment interaction** • **economic development and Canada's role in a global economy** • **truth and reconciliation in Canada**

Appendix F
Examining the Political Spectrum Activity Sheet

The Political Spectrum

←----------→

Communist Socialist Liberal Conservative Fascist

How Would You Vote?

Are you liberal, conservative, socialist or something else? Test yourself on this simple quiz. Circle the appropriate number for each question to see which way you lean...left or right.

4 Agree Strongly	3 Agree Partially	2 Disagree Partially	1 Disagree Strongly

1. Government environmental regulation controls should be relaxed. 4 3 2 1
2. Many political parties cause confusion. Canada would be better off if we only had two political parties. 4 3 2 1
3. Consumer protection laws should be relaxed. 4 3 2 1
4. The Lord's prayer and Bible readings should be allowed in public schools. 4 3 2 1
5. Less government interference means a better economy. 4 3 2 1
6. There should not be laws restricting the ownership of handguns. 4 3 2 1
7. Defence spending should be greatly increased. 4 3 2 1
8. Public welfare recipients are generally lazy and don't want to work. 4 3 2 1
9. People complain when protesters get hurt but they never appear to be concerned about what the protesters did to the police. 4 3 2 1
10. In our high energy cost world, governments should encourage the development of nuclear power. 4 3 2 1
11. The cost of social programs is too burdensome for taxpayers. Spending on these programs must be reduced. 4 3 2 1
12. "My country right or wrong" is a good motto no matter what happens. 4 3 2 1
13. Businessmen do more to help society than professors, artists, writers and other intellectuals. 4 3 2 1
14. The size of government must be reduced. 4 3 2 1
15. It is almost always best to choose political leaders who are older because they have experience and will not make rash judgements. 4 3 2 1
16. The abolition of the death penalty was a mistake. 4 3 2 1
17. Immigrants who complain about their adopted country should go back home. 4 3 2 1
18. Families and governments should always try to balance their budgets and not use deficit financing. 4 3 2 1
19. Labour unions have a role to play but now they are too big and powerful. 4 3 2 1
20. Mistakes are made when we try to change things quickly; in government change should occur slowly. 4 3 2 1

Examining the Political Spectrum Activity Sheet
Answers

TOTAL YOUR SCORE _____

0-20 – extreme left – Communist
21-35 left – Socialist
36-45 left of centre – Liberal/Socialist
46-55 centre or moderate – Liberal
56-65 right of centre – Liberal/Conservative
66-75 right - Conservative
76+ - extreme right - Fascist

Appendix G
Canadian Federal Election Assignment Sheet

SS11

CANADIAN FEDERAL ELECTION 2015
GROUP ACTIVITY

Name:_____
Party:_____
Sections:_____

Federal Political Parties:
I. CONSERVATIVE PARTY
II. LIBERAL PARTY
III. NEW DEMOCRATIC PARTY
IV. GREEN PARTY

We have a Federal Election coming up on October 19th! In preparation, we should educate ourselves on the platforms of each political party so we can better understand the choices and implications of the upcoming vote.

You will be divided into four groups that represent the four main Federal political parties. You will be responsible for researching a specific part of a political party platform. You will research information from the media, commercials, newspapers and the party's actual platform.

Party Platform Sections:

1. **Party leader & Vancouver-South Representative**
   - History, personality, personal life, accomplishments, etc.
2. **Education**
   - Elementary, secondary, post-secondary schools
3. **Health Care**
   - Spending, provincial needs
4. **Taxes**
   - Income tax
5. **Social Welfare**
   - Family support, childcare, unemployment
6. **Military**
   - Spending, commitments
7. **Foreign affairs**
   - Stance on international conflicts, treaties, agreements
8. **Immigration**
   - Increasing or decreasing, refugee intake
9. **Senate Reform**
10. **Electoral Reform**
11. **Budget**
    - Which areas are increasing or decreasing, plans for a deficit or surplus
12. **Public Transportation**
13. **Jobs and Innovation**
14. **Specific Promises to Provinces**

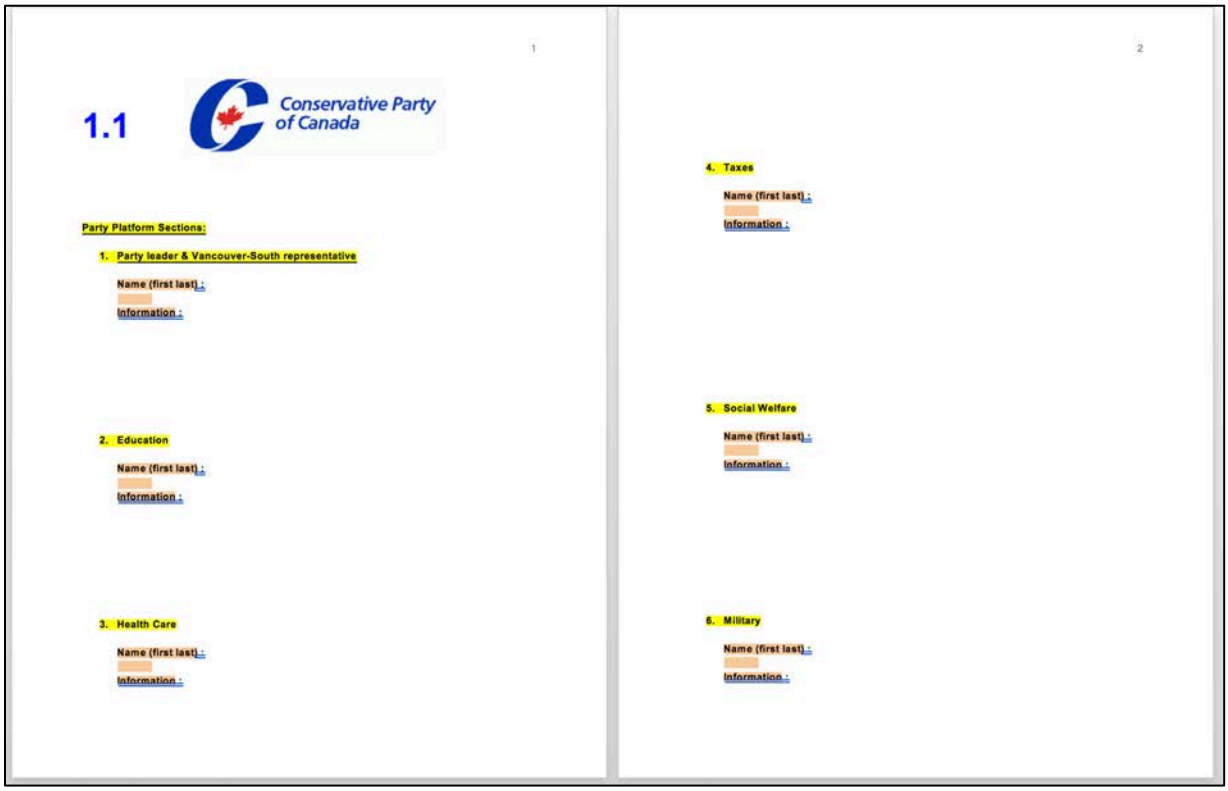
All work will be compiled onto a Google Doc. Your party leader will collect all the Gmail addresses of your group members and add you to the Google Doc so everyone can submit their research in the same place!

Due Dates & Marking Criteria

1. Research submitted on Google Docs: **15 marks**
   - To be completed in full sentences, paragraph form.
   - Put together a good copy on Word or your own Google Doc. Paste the finalized version on your portion of the Google Doc. Feel free to add pictures!
   - **Friday, October 16th at 8:00am**
2. Presentation on specific topics and participation in debate: **15 marks**
   - **Friday, October 16th**

Total: 30 Marks

Appendix H
Google Docs Template Sample



1

1.1 Conservative Party of Canada

Party Platform Sections:

1. Party leader & Vancouver-South representative

Name (first last) :

Information :

2. Education

Name (first last) :

Information :

3. Health Care

Name (first last) :

Information :

2

4. Taxes

Name (first last) :

Information :

5. Social Welfare

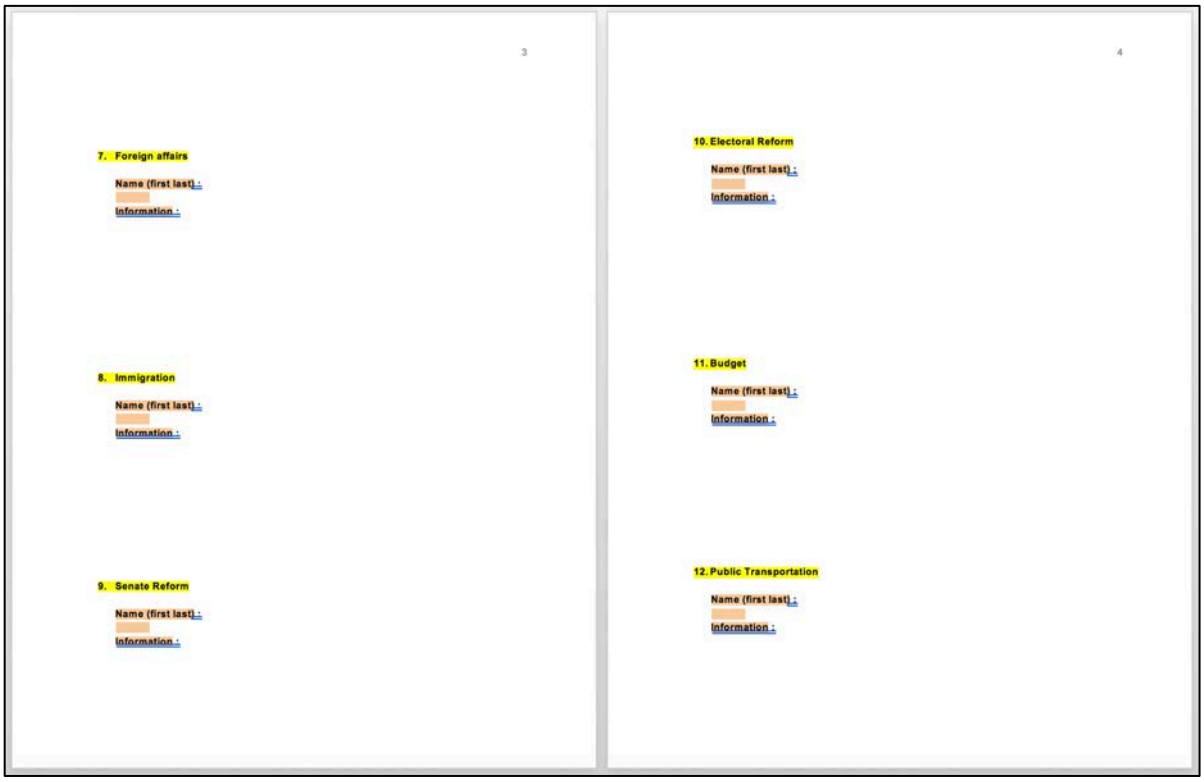
Name (first last) :

Information :

6. Military

Name (first last) :

Information :



3

7. Foreign affairs

Name (first last) :

Information :

8. Immigration

Name (first last) :

Information :

9. Senate Reform

Name (first last) :

Information :

4

10. Electoral Reform

Name (first last) :

Information :

11. Budget

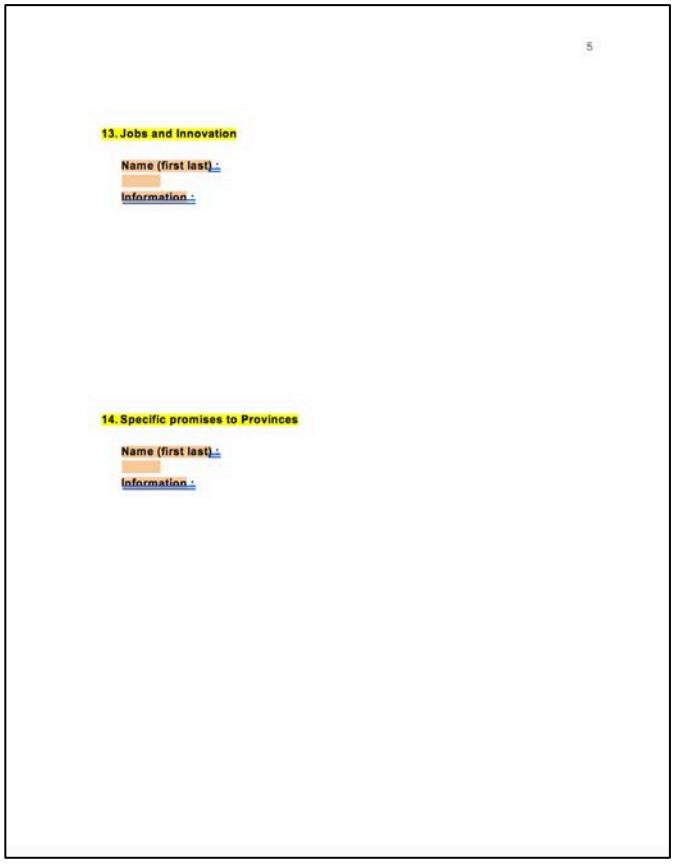
Name (first last) :

Information :

12. Public Transportation

Name (first last) :

Information :



5

13. Jobs and Innovation

Name (first last) :

Information :

14. Specific promises to Provinces

Name (first last) :

Information :

Appendix I
Phase I: Canadian Federal Election Group Debate & Google Docs Completion Student Survey

Digital Education Survey: Google Docs **Social Studies 11**

This is a voluntary and anonymous survey. You will answer the questions based on your participation in the "2015 Canadian Federal Election Group Debate Activity." Please answer the survey questions to the best of your ability.

Circle the best answer.

1. Would you identify yourself as male or female? Male Female
2. Prior to this class, did you have an active Gmail account? Yes No
   a. If you did not have a Gmail account, did you find it difficult creating one? Yes No
3. Prior to this class, had you ever used Google drive? Yes No

   If yes, write which Google drive application(s)?

   _____
4. Prior to this class, had you ever used Google Docs? Yes No
5. Did you find it easier to share information with your group members using Google Docs compared to previous forms of communication such as emailing, calling, texting or through other means. Yes No

   Explain:

   _____
   _____
   _____
6. Would you want to use Google Docs again for group projects? Yes No
7. How many times did you physically meet with your group members outside of class time? 0 1 2 3 4+

Scale Questions **Strongly Agree -Agree - Disagree- Strongly Disagree-N/A**

1. I would like to use Google Docs for group projects again in this class. 4 3 2 1 0
2. I would like teachers to assign group projects using Google Docs in other classes. 4 3 2 1 0
3. I liked that all oz$f my group members could see my written work. 4 3 2 1 0
4. I liked the chat component on the Google Doc. 4 3 2 1 0
5. I liked that my teacher could see the progress that my group was making. 4 3 2 1 0
6. I liked that my teacher could provide immediate feedback on the progress my group was making. 4 3 2 1 0
7. I found that using Google Docs made the project easier. 4 3 2 1 0
8. I found that using Google Docs made the project more enjoyable. 4 3 2 1 0
9. In the future, I will use Google Docs in other classes for group projects. 4 3 2 1 0
10. I will recommend the use of Google Docs to family and friends. 4 3 2 1 0

Please answer these questions honestly and to the best of your ability. Point form answers are acceptable.

1. What I enjoyed the most about using Google Docs for this activity was:
2. What I enjoyed the least about using Google Docs for this activity was:
3. Did you have any trouble using Google Docs? Was there any conflict that arose within your group during this group project? Explain.
4. General Comments. Please feel free to elaborate and provide reasoning for your answers on any of the scale questions.