TWEENS, TEENS, AND DIGITAL TEXTS: DESIGNING AFFINITY SPACES TO UNDERSTAND CYBERBULLYING

by

Lesley Edana Liu

B.A., The University of British Columbia, 2009

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

The Faculty of Graduate and Postdoctoral Studies

(Curriculum Studies)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

October 2016

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Abstract

This research explores how adolescents design, interpret, and navigate affinity spaces in connection to cyberbullying awareness. A class of Grade 8 students (aged 12-13, mixed gender, and a variety of digital skills) (n=28) participated in the study. The participants first investigated the use of affinity spaces, collaborative physical and digital spaces (Gee, 2005), then proceeded to design their own spaces for collaborative group work. A variety of data were collected in the form of peer-to-peer pre interviews, OneNote collaborative group journals, in-class observations of class work sessions, and post interviews. The methodologies used include case study, design-based research, and ethnographic techniques. This research was conducted in six stages and in a total of 15 hours; certain stages were allotted extra work sessions to accommodate the speed of the students’ progress. Stages three to five overlapped and occurred simultaneously as students designed, tried, re-examined and compared other applications, then re-evaluated their designs.

The findings of this study inform how adolescents design affinity spaces (real and virtual) and emphasize design features to serve as functioning collaborative workspaces, both in and out of the classroom, to prevent or counter cyberbullying. Findings related to how students design affinity spaces for collaborative work emerged in three themes: Group Presence, Individual Digital Space, and Guidelines for Clarity. Student-informed or student-designed spaces provide a sense of ownership or and self-regulation and give insight as to how codes of conduct inform these spaces and vice versa. Future studies should adopt an iterative process of design-based research to test and refine these affinity spaces (Collins et al., 2004; Wang, Petrina, & Feng, 2015). Recommendations also include future applications of sociocultural theory and activity theory to discern how adolescents differentiate between
face-to-face and online communication and practical classroom applications of affinity spaces in secondary schools.
Preface

This research was funded through the SSHRC Joseph-Armand Bombardier Canada Graduate Scholarships Program and my Supervisor’s SSHRC Insight Grant. The research design was implemented in adherence to the guidelines and ethical grounds for research involving human subjects presented by the University of British Columbia Behavioural Research Ethics Board. Approval was granted under the certificate number H06-80670 by the Behavioural Research Ethics Board.
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Acknowledgements

While a completed work bears a single name, the process leading to its completion is always due to the combined effort and support of many dedicated people.

First and foremost, I would like to thank my thesis supervisor, Dr. Stephen Petrina, for his continued support and encouragement of my ideas. He has consistently allowed for this research to be my own work and has guided me in the right direction when I required assistance. This thesis would not have been possible without the joy, enthusiasm, and dedication he has for his own research.

I thank my committee member, Dr. Marlene Asselin, for her encouragement, validation, and introduction to digital literacy; without her, I would not have recognized how to include my experiences with digital literacy in my research. I am deeply grateful for her thoughtfulness, guidance, and sincere devotion to critical research. I am also grateful for the helpful comments and insights of Dr. Douglas Adler, who served as the Thesis Examiner.

My colleagues in the How We Learn lab are a source of support, energy, and enthusiasm, who continue to inspire me in new ways every day. I am grateful to the Social Sciences and Humanities Research Counsel for their support of my work. I thank the Technology Education cohort of 2016 for challenging me with their inquisitive nature; my passion for teaching was validated and reaffirmed during our time together.

To my friends who supported me through hours of counsel, long walks, mountain escapes, and time spent beneath the moon and stars; my dear friends: Sophia Goksøyr, Jaclyn Chan, Alanna Kho, and Patrick Coulombe. Your continued friendship means the world.

I am grateful to be blessed with a loving family. I thank my mother, my father, my sister, my Aunt Ellen Liu, Uncle Earl Liu, and Aunt Connie Squire. Your unconditional
support and endless encouragement helped me reach this point of my journey. I also acknowledge my grandparents, Diana and Jeffrey Liu. Although it has been years since your passing, your lessons in compassion, perseverance, and determination resound deeply with me every day.

I would like to thank Peter Halim, without whom this thesis would not have been possible. You have both endured and motivated me throughout this (long) journey.

Lastly, I would also like to thank the twenty-eight research participants for their time, effort, and shared delight in learning.
Dedication

To my grandmother, my grandfather, my mother, and my father:

your compassion, devotion, and love inspires all that I do.
Chapter 1: Introduction

My research interests stem from early experiences with students I encountered during my practicum. I found a large number of my students, who were not avid readers and did not enjoy reading for leisurely purposes, preferring digital media such as video games and online content. These students reported they enjoyed playing video games because they could play with their friends in multiplayer games or compare their scores across single player games. These students also enjoyed solving problems with their friends and working cooperatively to complete a variety of challenges and turned to online communities and forums for assistance when they met a particularly difficult challenge. At first, I thought that e-book readers and e-book applications would encourage adolescents and teens to become more engaged with reading and building literacy skills (Liu, 2012); however, as the popularity of e-reading designated devices began to decline, I began to realize that these students enjoyed the social context of their learning experiences afforded through digital means.

With widespread occurrences of cyberbullying and child suicide, and popularity of online content, these initial interests have shifted to investigating the social and communal aspect of digital media design and consumption. This study aims to identify the constructive qualities of “affinity spaces” (Gee, 2004), so that these attributes may inform pedagogical and curricular changes during times of technological innovation.

Research suggests that middle school students lack the ability to recognize cyberbullying behaviors or inappropriate behaviours that could lead to cyberbullying (Kite et al., 2010). The lack of knowledge in regards to conduct and consequences is one of the
attributed factors in cyberbullying. Research into affinity space design could prove helpful in demonstrating to youth how specific behaviours can contribute towards cyberbullying.

1.1 Background

Digital image, text, and sound (ITS) are an integral aspect of child and adolescent formal and informal education. Through innovation (e.g., e-book readers, smartphones, tablets), children are increasingly encouraged to view digital content as an endless resource for both study and entertainment (Asselin & Moayeri, 2010, 2011; Johnson, 2010; Marsh, 2011; McTavish, 2009; Neuman & Neuman, 2014). Across Canada, Ministries of Education have committed to a principle of access to digital content to enrich classroom learning within the K-12 curriculum (Boyer & Crippen, 2014; MediaSmarts, 2014; Shields et al., 2014; Willinsky, 2006). Studies since 2002 have demonstrated a growing trend of children and youth interacting with digital content (i.e., fan websites, social media, Wikipedia, search engines) (Beach & Bruce, 2002; Blanchard & Moore, 2010; Petrina et al., 2014; Thomas, 2007); however, it is unclear how or why interaction escalates into problems such as cyberbullying. Cyberbullying is defined as “an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself” (Smith et al., 2008, p. 376). Peer victimization through cyberbullying has been related to an increased chance of suicidal ideation (Tokunaga, 2010; Schneider et al., 2012; Sabella et al., 2013; van Geel et al., 2014) and without intervention, bullying behaviours can be perpetuated from childhood to adulthood in a form of dysfunctional interactions and, for a few, criminal or violent
behaviour (Olweus, 2011; Sourander et al., 2011). In light of this, my research focuses on exploring adolescent social interactions with digital ITS.

1.2 Purpose and problem

The purpose of this research is to understand how students design affinity spaces and how these designs relate to cyberbullying awareness, so that educators may be able to develop pedagogical strategies to introduce online collaborative workspaces for in-class and out-of-class work. There is a plethora of cyberbullying and cybercrime research (Luppicini, 2010; Tokunaga, 2010) that focuses on student experiences of cyberbullying in correlation to suicidal ideation; however, the problem is the lack of research that examines the phenomena of cyberbullying through a curriculum, pedagogy, or design perspective. In this research, I examine the intersections between adolescents’ intent, design, and use of physical and digital space. Within each app or device (i.e., software, application, word) is an intended use and problems may arise when technologies are utilized in ways in which they were never thought possible. This is not to say that all unintended consequences would otherwise be anticipated. The use of Latour's Actor-Network Theory (ANT) assists in recognizing the role that technology plays within collaborative and communal spaces and incidences of cyberbullying.

I propose that through the study of adolescents’ design, use, and understanding of affinity spaces, it is possible to promote reflexive approaches amongst adolescents and in turn encourage informed digital literacy practices and cyberbullying awareness. As this study involves students designing spaces, creating, reading, and interpreting digital ITS, the participants are given the opportunity to become self-aware and critical of their practices and assumptions in both physical and digital contexts. The overall purpose of this research is to
promote social change and enable student contributions to further the development of 
technology and media studies curriculum. Similarly to the work of Gee (2000a), MacDowell 
(2015), and Rebmann (2013), I believe it is possible for students to use design principles to 
empower themselves and their peers.

1.3 Research questions

In this research study, I am interested in understanding how adolescents design, use, 
and comprehend affinity spaces, and how this might inform digital literacy practices and 
cyberbullying awareness. In order to address the intersections of intentional design, affinity 
spaces, collaborative work, and cyberbullying, two questions were posed:

1. What do students recommend for the design of affinity spaces (i.e., physical and 
digital\(^1\)) to serve as functioning collaborative workspaces, both in and out of the 
classroom?

2. How do students interpret the design of affinity spaces in connection with 
cyberbullying awareness?

1.4 Glossary

Affinity Spaces: As conceptualized by Gee (2004, 2005), affinity spaces are defined a 
physical or digital spaces where groups of people can interact and share ideas based on 
common interests, endeavors, goals, practices, or causes. In addition, membership within 

\(^1\) As a researcher, I advocate for the use of the phrase "physical or digital" in replacement of "real or virtual" to 
encourage the real world implications of online interactions. The phrase "real or virtual" suggests that actions 
and behaviours which take place in 'virtual' spaces do not have real world implications and detract from the 
importance of online communications.
affinity spaces is not limited by geographic location as this term focuses on “the idea of a space in which people interact” (Gee, 2009).

**Cyberbullying:** For this study, Tokunaga (2010) provides a definition that which encapsulates current understandings of cyberbullying. “Cyberbullying is any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others” (p. 278).

**Digital Citizenship:** As defined by Mossberger et al., digital citizenship involves the ability to participate in society online in a way which promotes social inclusion and includes three aspects: recognition of economic opportunity, democratic participation, and inclusion in prevailing forms of participation (2008).

**Digital Literacy:** This study uses MediaSmarts’ definition of digital literacy, which incorporates more than technological know-how. MediaSmarts, a Canadian not-for-profit charitable organization for digital and media literacy, implores for the inclusion of a wide variety of ethical, social, and reflective practices which are embedded in work, learning, leisure, and daily life. According to MediaSmarts (ca. 2013), “Under the ‘digital literacy umbrella’ are a wide range of interrelated skills that traditionally fall under media literacy, technology literacy, information literacy, visual literacy, communication literacy and social literacies.”
1.5 Limitations

Throughout this research study, I made decisions regarding the research design, what data to collect, and what theoretical lens to bring to my analyses. I acknowledge that during the conduct of this type of research, personal bias is inevitable (Strauss & Corbin, 1998). Hence my study’s findings are influenced by my own beliefs and experiences associated with the students. While I was aware of these influences and recognized this limitation, I endeavoured to make my account of the participants real and as unbiased as possible. This study was conducted in 15 hours, with a class of Grade 8 students, in one language, and at one high school; therefore, findings may not be representative of other Grade 8s’ in other years and those at similar levels or institutions.

A subsequent limitation was the method used to collect data. The school with which I conducted the experiment had some connectivity issues on several days and resulted in the students' slow access to their journals, which were saved on the school district's cloud storage. In addition, the school district IT department was overburdened with work and the wait time for three students to acquire online access to their Microsoft 365 accounts was an additional week. Hence, two groups contributed less material to their online work journals. While the students were still able to contribute to their group project, their interest in contributing to the work journals waned and thus, group participation was staggered over a period of time.

1.6 Ethical considerations

To ensure my study followed appropriate ethical guidelines, I consulted my principal advisor and successfully received the UBC Behavioural Ethics Review (BREB) board for
approval. In accordance with BREB procedures, all participants received a “Consent To Participate” letter outlining the principal investigator(s) and the conditions for participating in and withdrawal from the study. To ensure anonymity and to maintain privacy and confidentiality, pseudonyms were used for all participants.

1.7 Organization of the thesis

This thesis is organized into five chapters. Chapter One is an introduction of the research, which includes the background, problem, research questions, purpose, limitations, and terminology utilized in this research. Chapter Two provides a literature review with a focus on Gee’s notion of affinity spaces (2005) and a background of cyberbullying research with intersections of Latour’s Actor Network Theory (ANT) (2005). Chapter Three discusses the methodology and design used for the research study. In this section, I describe the six phases in which the research study was carried out and explain the overlapping nature of several of these phases. In addition, I describe the data collection site and list the methods used for analyzing the data. In Chapter Four, I analyze the data and report the key findings, which are organized in two separate sections to address the two research questions in relation to the five theoretical perspectives presented in Chapter Two. The findings in this chapter provide the grounds for the conclusions. Chapter Five concludes this research study with a summary of the key findings. In addition, this Chapter Five discusses the implications of this research and provides recommendations for future research and practical in-classroom approaches to media and technology instruction.
Chapter 2: Literature Review

This chapter further explicates the terminology introduced in the first chapter and reviews literature associated with the key terminology (i.e., affinity spaces and cyberbullying) associated with this research. I begin by explaining how affinity spaces (Gee, 2005) factor into my theoretical perspectives and inform my research. I detail the origins of this concept, then provide my own analysis and contribution to the understanding of affinity spaces. This discussion of affinity spaces is followed by an examination of cyberbullying. I begin by citing a decade worth of research literature devoted to the area of cyberbullying, then provide my own analysis using actor-network theory (ANT) (Latour, 2005) to discuss the inconsistencies of the term and the problems associated with unaddressed hierarchies of power.

2.1 Affinity spaces as the theoretical framework

This research is situated in James Paul Gee’s concept of affinity spaces (2005), and recognizes the possible intersection of sociocultural theory (Vygotsky, 1978), activity theory (Leont'ev, 1981), actor-network theory (Latour, 2005; Law & Callon, 1992) and design-based research (Collins et al., 2004) for future iterations of the research study (Figure 1).
This research is centered around the concept of affinity spaces. Literacy scholar James Paul Gee introduced the concept of “affinity space”, which is defined as a physical or digital space, where diverse groups of people can interact and share ideas based on common interests (Gee, 2003, pp. 192-194; 2004, pp. 77-89; 2009). Gee (2005) uses concepts such as “common interests, endeavors, goals, or practices” and “common cause” to define why people create affinity spaces (pp. 77, 79). In addition, membership is not limited by geographic location; instead, “affinity spaces” focus on “the idea of a space in which people interact, rather than on membership in a community” (Gee, 2009, p. 2).

Learning is viewed as a social process mediated through interactions using media and technologies of a physical (e.g., private messages, forums, profile pages, self-authored webpages) and semiotic (e.g., language) nature. A socio-cultural discourse approach provides
valuable insight and layers of understanding into how children appropriate or learn mannerisms that circulate through physical and digital spaces (Cole, 1985; Leont'ev, 1981; Smagorinsky, 2011; Vygotsky, 1978; Wertsch, 1990). By building on Gee's concept of "affinity spaces", I explore how intentional (i.e., designed) affinity spaces (Gee, 2005) affect student interactions and comprehension of images, text, and sound (ITS). After data collection, the research employs actor-network theory, as this theoretical perspective helps explain how humans and technologies assume or create agency in designed spaces (Latour, 2005; Law & Callon, 1992). The iterative process of design-based research allows for future recommendations, so that these affinity spaces may be tested and refined for future research endeavors.

2.1.1 Defining affinity spaces

Literacy scholar James Paul Gee conceived of the concept “affinity space” as he argues that the best learning conditions include situations or an environment where people are highly motivated and engaged with social practices they value (2004). Gee recognizes the relevance of research conducted with “communities of practice” in both schools and the workplace (Lave 1996; Lave & Wenger, 1991; Wenger 1998), as Gee views learning as a type of apprenticeship; however, Gee recognizes the limitations of ‘communities’ and proposes the creation of ‘spaces’ to resolve these issues of membership (2004; 2005). The following sections of this chapter seek comparatively define the terms ‘community of practice’, ‘inquiry community’, and ‘affinity space’, and situate each term within its appropriate area of literature and this study. In this first section of the literature review, I
explicate and promote the use of online affinity spaces as a learning environments that would be beneficial to researchers, teachers, and students.

2.1.2 Affinity spaces and their origins

Affinity spaces are physical and digital spaces, as a viable place to conduct a collaborative enterprise. In David Barton and Karin Tusting’s edited collection of research, *Beyond Communities of Practice: Language, Power, and Social Context*, Gee proposes affinity spaces as an alternative to the notion of a “community of practice” (Lave and Wenger 1991; Wenger 1998), as he believes the broader social context of communities of practice have been overlooked. Gee (2005) points to three specific problems which occur within communities of practice:

1. The word ‘community’ has connotations of “belonging-ness” which suggests personal ties between individuals. This is problematic as personal ties are not necessarily established nor possible in classrooms, workplaces, or areas where the idea of a community of practice takes place.

2. The notion of “community” is closely connected to the idea of people being “members”. The understanding of “membership” is diverse and different in each context. As each community of practice has different demands, the definition of membership constantly shifts and is not a helpful or concrete concept.

3. Wenger goes into detail (Wenger et al., 2002) and attempts to clearly distinguish practices which constitute a community of practice; however, this degree of specificity seems to only limit the full intentions of a community of practice.
I agree with Gee’s perspective and also offer affinity space as a medium to create an "inquiry community" (Cochran-Smith & Lytle, 2009) in addition to an alternative to the "community of practice" (Wenger, 1998) in this literature review. Gee's (2005) concept of "affinity spaces" offers a viable way to circumvent issues concerning membership in a group dynamic and to promote democratic participation within the space. 'Affinity spaces' can offer a way to invite numerous members or co-researchers in the process of learning and playing. 'Inquiry communities' and 'communities of practice' have both contributed greatly to the field of education and other research fields; however, with the increase of online components and the proliferation of technology in every day practices, it would be beneficial to teachers and researchers to look to online spaces to facilitate collaborative project based learning and student centered inquiry projects, especially when the subject matter involves digital research and online resources.

2.1.3 The difference between communities and spaces

In order to fully comprehend the true potential offered by affinity spaces, it is necessary to investigate the differences between communities and spaces. I discuss these terms in an order moving from exclusivity to inclusivity. It is important to note that each term serves a separate purpose and this order serves to explain the constraints and possibilities presented. This order does not represent a hierarchical ranking of the terminology discussed. In this section, recognize and build upon Gee’s view of ‘communities’ and ‘spaces’ by including Cochrain-Smith and Lytle’s term, ‘inquiry community’ in my own discussion of these differences.
Cochran-Smith and Lytle (2009) situate the term 'inquiry community' within the field of action research used to describe for the inquiry of practitioners. The analysis of the students' learning is juxtaposed to an examination of the practitioner's own intentions (Cochran-Smith & Lytle, 2009, p. 41). These inquiry communities are usually used to describe research from the stance of the teacher; however the term also expands to include other community members who may share this 'inquiry stance', such as a principal, a college instructor, a university faculty member, an adult literacy program tutor, and other stakeholders in certain situations such as parents, community members, and families, who all participate in the inquiry process as fellow researchers (Cochran-Smith & Lytle, 2009, p. 42). In addition, the term 'inquiry stance' describes teachers and student teachers working within communities to generate local knowledge, envision and theorize their practice, and interpret and interrogate the theory and research of others (Cochran-Smith & Lytle, 2009, p. 44), thus this research is conducted largely by teachers to investigate their own practices amongst themselves with the help of other educational colleagues. This term serves as the most exclusive of the three terms; Cochran-Smith and Lytle (2009) advocate for the importance of teachers investigating occurrences within their own classrooms and reason that the significant changes in practice "can only be brought about by those closest to the day-today work of teaching and learning" (p. 39). Cochran-Smith and Lytle sought exclusivity in the creation of this term to bring forth the importance of the educator's positionality within the classroom.

Wenger (2000) describes his concept, 'communities of practice', as a social learning system that can be situated within schools, institutions, an industry, region, or consortium (p. 225). While 'inquiry communities' focus largely on educators investigating their own
practices, Wenger places emphasis on learning as a social process within a community. His earlier work identified three acts in which a researcher must engage in order to belong to a 'community of practice'; he classifies these acts of participation as "modes of belonging" (Wenger, 2000, p. 227), which include: engagement, imagination, and alignment. Engagement is defined as the act of doing a task or producing an artifact. This could include discussing a problem with another teacher or creating a recording of these issues. In order to understand the complexity of the issue, Wenger insists that one must first know what one is capable of accomplishing first hand (Wenger, 2000, p. 227). Imagination is described as one's own ability to orient themselves within their own local community and then to situate that community within the larger scope of the world. This is to ensure that the individual has reflected on their own position and is able to frame their problem with a small and large scope. Wenger states that it is essential to understand one's own sense of self in order to participate in the social world (Wenger, 2000, p. 228). Alignment is the third act of participation and is defined as the act of situating our actions within a larger scope so that our work might be effective in ways that are beyond our own scope (Wenger, 2000, p. 228). Alignment ensures that our work benefits others and not solely ourselves, otherwise this is not a true act of participating within a community. All three of these acts of participation, or 'modes of belonging', must be present in order to truly be a member of a community. One aspect may be dominant, but all 'modes of belonging' must be present.

Wenger's later work incorporated three other characteristics defining a 'community of practice'; these characteristics are not additional acts of participation to create a sense of belonging; rather they are aspects that the community as a whole must embody. These characteristics include: the domain, the community, and the practice (Wenger, n.d., p. 1). The
first characteristic is the domain, a shared interest, and Wenger explains that it does not necessarily signify an expertise shared by members of the same community (Wenger, n.d., p. 2). The second characteristic is the community, which is defined as a group of individuals who come together to engage in activities and discussions to interact and learn together (Wenger, n.d., p. 2). Wenger explicitly states that although a website serves as a gathering place of learning, it is not necessarily a 'community of practice' unless all members interact synchronously, as teachers meeting at an appointed time and place would or how members of a chat room would engage. He believes that a community cannot be based on interactions posted to a message board, left for all to see. This is a significant point of departure from Gee's concept of 'affinity spaces', which I will return to discuss, as I find forums to be highly educational spaces, which allow community members to participate through asynchronous interactions. The third characteristic is practice, which is defined as a shared repertoire of resources which could include one's own experience, stories, tools, methods of addressing recurring problems, "in short, a shared practice" (Wenger, n.d. p. 2). I found issue with this third characteristic as it assumes that all community members are working to solve the same problem. In my examination of forums towards the end of this section, I find that forums allow members to participate in an online space for a variety of reasons. Gee's concept of 'affinity spaces' also addresses this third characteristic, which I will discuss below.

Prior to delving into Gee's concept of 'affinity spaces', my background in literary studies and ESL research has influenced my agreement with Gee’s semantic emphasis of the word 'space' in lieu of 'community', as Gee's background is also founded in English language and literature. Wenger's 'modes of belonging' serve as a good starting point to investigate one's actions within an empirical study; however, I cannot agree with his three characteristics
of group membership. Gee's notion of 'affinity space' was originally created as a response to Wenger's concept of 'communities of practice'. In this section I have also included Cochran-Smith & Lytle's concept of 'inquiry communities' because I believe that 'affinity spaces' are flexible enough to serve as a way to carry out several forms of research. 'Affinity spaces' are regarded as physical, digital, or a blend of the two spaces where individuals may engage in a common interest or activity (Gee, 2005). These spaces are fueled by the common interest and not class, disability, gender, race, or sexuality (Gee, 2005). In addition, 'affinity spaces' encourage individuals of all levels of experience (with regard to their common interest) to gather in the same space. These spaces support many different forms of participation, and participants have opportunities to emerge as leaders in a multitude of ways. Gee (2005) contests the use of the word 'community' because the word connotes a sense of belonging defined as a close-knit or personal tie between members; this is not always true within a classroom or workplace. In addition, Gee writes that the term suggests there are harmonious interactions between the members, which is not always the case in workplaces or schools (2005). The word 'community' may be misleading. The term 'space' places emphasis on the digital or physical space in which the individual engages.

2.1.4 Engagement and interaction within affinity spaces

Jen Scott Curwood's (2013) ethnographic study of an online affinity space exemplifies numerous qualities of engagement and interaction as described by Gee (2005). This case study focuses on a 13 year old boy's engagement with *The Hunger Games* Trilogy (2013). Curwood's study investigates multiple literacies Jack develops throughout his participation on this website; the participants of this online space share a passion for the
literary series, *The Hunger Games*. This website exists due to a “common endeavour, not race, class, gender or disability” (Gee, 2005). Curwood (2013) observes that digital spaces are "dynamic, malleable, and at times, unstable. They can evolve at a rapid rate, which gives rise to multiple pathways for participation and content creation" (Curwood, p. 420). This website facilitates strong content generation (Gee, 2005). Jack's involvement with the website is an extraordinary case of a "mega-fan" (Curwood, 2013, p. 419) as he started as an active participant on discussion boards on Mockingjay.net, and was then asked to join the staff and serve as a global moderator. Jack later became a participant of the Panem October, an alternate reality game and social network, which required a high level of involvement from players. In this website, leadership is porous and the leaders are resources (Gee, 2005). While there is an assortment of leaders on this website, the line between leader and follower is fluid; the staff of this website acted as mentors and as resources, who encouraged and educated Jack in the functions of the website. Upon attaining a level of fluency, Jack was offered the opportunity to serve as global moderator.

In response to the steep learning curve of this alternate reality game, Jack founded a support site for Panem October with help from his parents who paid for the website hosting and server space (Curwood, 2013, p. 420). As one can surmise, Jack's involvement began on a single discussion board as a participant and grew to become multifaceted as he created his own site and wrote his own content. This case study exemplifies how a website encourages a participant’s intensive and extensive knowledge, and individual and distributed knowledge (Gee, 2005). Jack's method of engaging with the online affinity space is similar to that of other participants of affinity spaces. First the participant creates content. Second the content is organized and presented to the public. Third, there is public recognition and feedback,
which in turn inspires the continuation of content being created. This type of interaction can be viewed as a 'feedback loop', which is most frequently found in online affinity spaces such as forums. Jack's level of interaction and involvement was also quickly realized because his interactions, or 'feedback loop', took place in an online affinity space. Within affinity spaces there are many different forms and routes to participation and many possible ways to obtain a certain status or level of fluency in content knowledge and generation (Gee, 2005). This affinity space allowed Jack to read, learn, participate, and become a leader on his own site.

2.1.5 Conclusion: Affinity spaces facilitating social change

In defining affinity spaces, Gee places importance in the concept of 'open member' (2004). Open membership refers to Gee's conception of a space that was propelled by a common interest, and not social identity (e.g., class, disability, gender). Open membership ensures that a variety of persons with all levels of expertise may gather together for the shared interest. I believe this would further a learning environment and if administered, or democratized, appropriately, such a space could benefit participants. Open membership also ensures the success and maintenance of an affinity space. In addition to open membership, I believe than a successful affinity space must support praxis; without praxis, there can be no motivator to continue the enterprise or illicit change. Change cannot take place without critical reflection, and a true praxis is the balance of both thought and practice. According to Freire, dialogue is part of this process of achieving a true praxis (Freire, 1970, p. 157); however, dialogue must be carried out under strict conditions. In addition, dialogue does not consist of the one-way act of depositing ideas into another individual's head. The importance of two-way communication is similar to Wenger's 'mode of belonging', 'alignment' (Wenger,
Dialogue is not a simple exchange of words or a hostile agreement, but rather an encounter and act of creation. Affinity spaces allow for asynchronous participation, which I argue invites more meaningful discussions as members are given time to read, think, reflect, then post when they have a response to contribute. A participant is able to engage in a 'feedback loop' at a comfortable pace. In synchronous participation, members may feel pressured to say something on the spot or feel they have nothing to contribute and leave the group.

Fluidity of leadership refers to the absence of hierarchy in a space. Fully democratized spaces will allow for participants to become co-researchers and sit in multiple roles. Collins reasons that participants should be invited to analyze the data, since the study is ultimately about them (2004, p. 352); this can be paralleled with the use of affinity spaces for student centered curriculum and collaborative project based enterprises. Freire believes that change can only take place in an environment where positions of power are disassembled with the teacher becoming the student and the student becoming the teacher. He champions a learning environment without any hierarchy; students do not receive information as given to them, top down, by the teacher. Freire also states that that authentic education takes place when teachers investigate issues with students. There must be solidarity and mutual trust between all participants of this dialogue. Within an affinity space, there is no hierarchy. All members may begin a thread and contribute to ones that have been created; appointed moderators are present to ensure rules are followed for the benefit of everyone in the community. The topic of discussion is not chosen by the moderator. There are also
opportunities to for interested members to moderate and sit in administrative positions, which can be changed on a monthly or yearly basis.

In review of the affinity spaces as democratic places, as all members can contribute to a group goals through codes of conduct; diverse membership and learning through apprenticeship is encouraged and these spaces can be viewed as democratic as there is no set hierarchy. A forum is a possible medium supporting an individual's engagement of praxis and allows for side spirals of inquiry to take place. Most importantly, forums support the ability for participants to become leaders of their own discussions and research interests, as seen with Jack in Curwood’s study (2013). A variety of participants can become involved; people of any age, class, gender, and level of experience are welcome to participate and take turns leading through affinity space. While the issue of belonging and membership can seem simple, it often dictates the success of a collective or research study.

2.2 Defining cyberbullying

In recent years, numerous studies have been conducted in an attempt to discuss the reasons and conditions under which cyberbullying occurs amongst children and adolescents; however, definitions of cyberbullying among researchers differ. Cyberbullying research began to emerge in the early 2000's. Finkelhor et al. (2000) recognize cyberbullying as a phenomenon of online harassment, which encompasses "threats or other offensive behavior (not sexual solicitation) sent online to the youth or posted online about the youth for others to see" (p. x). The case of Amanda Todd exemplifies the line between an incident of cyberbullying and a criminal act. Amanda Todd committed suicide after years of sexual extortion, bullying, and harassment and a full investigation was launched to determine factors
that may have contributed to her death ("Amanda Todd case", 2014). The case was first launched by the RCMP, then expanded to include international investigators and experts. Early in 2014, Dutch police arrested a man who was involved with multiple victims from the Europe, UK, and Canada. The man faced five charges, including extortion, internet luring, criminal harassment, and the possession and distribution of child pornography (Culbert & Hager, 2014). It is important to recognize that sexual solicitation cannot be compartmentalized with cyberbullying and must be recognized as a criminal act, due to the severity of its nature. This case also demonstrates the long reach of perpetrators with the aid of digital space, which will be discussed in the next section.

Hinduja and Patchin (2009) acknowledge that cyberbullying encompasses "willful and repeated harm inflicted through the use of computers, cellphones, and other electronic devices" (p. 5). Smith et al. (2008) define cyberbullying as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly or over time against a victim who cannot easily defend him or herself" (p. 376). Slonje, Smith, and Frisen (2013) qualify this common definition given the complexity and ubiquity of digital devices and apps. Dehue et al. (2008) insist that cyberbullying consists of three conditions: repetition, psychological torment, and intent. Each of these definitions places importance on the aggressive and harmful nature of the acts being perpetrated through an electronic device; however, there are variations among them concerning the nature of intent and repetition.

In review of numerous inconsistent definitions, Tokunaga (2010) provides a definition that encompasses the overlapping quality of the others:
Cyberbullying is any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others. (p. 278)

Current research suggests that middle school students lack the ability to recognize inappropriate behaviours that can lead to cyberbullying (Kite et al., 2010; Shariff, 2009). This lack of knowledge in regards to conduct and consequences is one of the attributed factors underlying cyberbullying. An update to curriculum revolving around the use of technology could prove helpful to youth in how specific behaviours can contribute towards cyberbullying and then be traced to more serious acts of harm. I agree with Shariff, in that children and youth could benefit from an increased awareness of the Canadian legal system (2009); however, this should be accompanied with critical digital literacy curriculum to avoid implications of administrators and teachers policing students in schools (Asselin & Moayeri 2010, 2011; MacDowell, 2015; Petrina, 2000, 2014, 2016).

2.2.1 Traditional bullying versus cyberbullying

Debate has questioned whether cyberbullying is a subset of traditional bullying; cyberbullying has a distinguishing set of characteristics. Traditional bullying has been understood to be repeated, intentional, and aggressive behaviour by an individual or group of persons, against a victim who is not able to easily defend themselves (Hymel & Swearer, 2015; Olweus, 1993). Some may argue that cyberbullying simply extends the reach of the perpetrator through communicative technologies. Numerous studies suggest otherwise.

In comparison to traditional bullying, cyberbullying has a further reach, as communicative technologies enable individuals to bully their target all ranges of distance
In addition, these individuals are able to conceal their identity much more easily; an increase in anonymity seemingly offers greater opportunity to engage in acts of bullying. Englander and Muldowney (2007) state that cyberbullying is an act of opportunity that requires a low amount of planning, does harm without the use of physical interaction, and has a lower risk of being caught. The "disembodied and asynchronistic nature of on-line interactions also offers people the opportunity to position themselves in new ways" (Valentine & Holloway, 2002, p. 308). This can be particularly appealing to youth, as they are often regarded as individuals who are less knowledgeable and lack experience in an adult world (Nguyen & Alexander, 1996). It is vital to recognize the increased agency through which adolescents are able to engage in bullying acts with communicative technologies.

In addition, cyberbullying is not constrained to a geographical location; it interrupts time and space through the use of cellphones, smart devices, and other technologies (Agatson et al, 2007). Reminders of bullying acts can also withstand time through social media (i.e. Facebook, Snapchat) and other apps or devices (i.e., cellphones, email accounts, messaging, and Facebook walls) can act as records of harassment, resulting in repeated victimization. In summary, the intentional extended reach, repeated victimization, anonymity, and digital preservation exemplify the unique and transformative nature of cyberbullying, which requires different methods for identification and interventions from traditional bullying.

2.2.2 Actor-network theory intersecting cyberbullying

ANT is an ideal method to trace the complex interchanges between people and digital technologies as it "provides a focus on the relationships between non-humans and humans..."
that captures the mediated nature of contemporary life within an evolving technological society" (Lupiccini, 2010, p. 37). There has been a lack of research that utilizes ANT to examine the intricacies of cyberbullying through detailed tracings. Conversely, ANT-influenced cybercrime scholarship began to rise in the early 2000s and continues to bring forth insightful findings ranging from cyber-terrorism and cyber-espionage to cyber-theft (music piracy) and cybercrime (Table 1) (Lupiccini, 2014, p. 40).
Table 1: ANT Influenced Cybercrime Research Published Between 2002 and 2013 (Luppicini, 2014).

<table>
<thead>
<tr>
<th>Source</th>
<th>Cybercrime Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aradau (2010)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Castells (2011)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Hand &amp; Sandywell (2002)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Hayward (2012)</td>
<td>Cyber theft and cyber fraud</td>
</tr>
<tr>
<td>Lin &amp; Luppicini (2011)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Mahring et al. (2004)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Murray (2011)</td>
<td>Cyber terrorism and cyber espionage</td>
</tr>
<tr>
<td>Prins, Broeders, &amp; Griffioen (2012)</td>
<td>Cyber theft and cyber fraud</td>
</tr>
<tr>
<td>Taylor (2005)</td>
<td>Cyber theft and cyber fraud</td>
</tr>
<tr>
<td>Thompson &amp; Cupples (2008)</td>
<td>Cyber bullying and cyber harassment</td>
</tr>
<tr>
<td>Valendine &amp; Holloway (2002)</td>
<td>Cyber bullying and cyber harassment</td>
</tr>
</tbody>
</table>

In comparison to cybercrime, Luppicini (2014) notes that the network of cyberbullying can become large and nebulous as it involves numerous actors, with an increase of agency through technologies (i.e., cellphones, computers, social networking sites). For example, a victim of a case of traditional bullying can become the perpetrator in a case cyberbullying in a pursuit of vengeance (Salmivalli, 2001). While police and investigating social workers have received training to recognize and track indicators of correlating events, teachers have not been equipped with these sets of investigative skills in
their teacher training. It is possible for five seemingly separate instances of bullying to in actuality be one case leading to subsequent reactionary instances of bullying. With multiple actors, causes, and the possible reversal of roles all attributing to a single case, the following of an instance of cyberbullying can become increasingly complex to trace, given that a single strand becomes an interlocking network (Thompson & Cupples, 2008).

In Reassembling the Social: An Introduction to Actor Network Theory, Latour (2005) recognizes the difficulty and near impossibility of tracing cases.

We could swallow one, maybe two, but not four in a row. Unfortunately, I have not found a way to speed things up: this type of science for that type of social should be as slow as the multiplicity of objections and objects it has to register in its path [...] It has to be able to register differences, to absorb multiplicity, to be remade for each new case at hand. This is why the four sources of uncertainty have to be tackled courageously all at once, each adding its set of differences to the others. If one is missing, the whole project falls apart. (Latour, 2005, p. 121)

Latour recognizes the interconnectivity of cases and the importance of not letting strands escape, for the fear of being unable to present a completed tapestry to tell a story in its entirety. By leaving strands unaccounted for or ignoring potential connections, the researcher does a disservice to those involved in the case.

The complexity and multiplicity of a case is well represented in the tracing of the telephone bullying case of Dawn-Marie Wesley ("B.C. girl convicted in school bullying tragedy", 2002). In November 2000, Dawn-Marie Wesley, age 14, of Mission, BC, hanged herself after receiving threats by three classmates via telephone. One of the accused testified that she had been beaten up by Dawn-Marie Wesley and the other accused teen admitting to
telling the victim, "You're dead" over the telephone. The breakdown of this group of friends caused one of the accused to become a bully with the support of the two other teenagers to continue the verbal harassment of Dawn-Marie. As indicated in the limited details provided in this case, it is difficult to determine the beginning of the series of events. To speak to the multiplicity of this case, both Dawn-Marie and the perpetrator were identified as Indigenous. The other girls who were not Indigenous and who had joined in the bullying of Dawn-Marie were let off with no criminal liability or court sentence (Shariff, 2009). Shariff speaks further to the inequalities of power represented in this case: US bullying expert, Barbara Coloroso delivered a lecture (It's a Girl's World: A Documentary about Social Bullying, 2004 [video]) to the Indigenous community of the perpetrator, rather than the school of the students involved. Shariff cautions that as a society, we should never be justified in taking bullying at face value: "There is always a larger context that requires attention. That is why I seriously caution against being too quick to lay blame on children and the Internet, without critically questioning our own institutional systems and power hierarchies" (Shariff, 2009, p. 113).

Based on recent conversations between myself and committee members of the Vancouver Secondary Teachers' Association Technology Committee, school districts across the Vancouver lower mainland are being encouraged to increase students' digital literacy by incorporating devices such as iPads and laptops, and implementing "bring your own device" or technology (BYOD) policies. Critical digital and media literacies are vital in an era where the dissemination of information is through digital and online means; however, can administrators, teachers, and researchers be exempt from contributing if the subject of online protocols with students have not been addressed? How can students be expected to work collaboratively if pre-existing power hierarchies in the classroom have not been addressed or
recognized by teachers? How can we not expect these power dynamics to eventually impact the classroom with an insurgence of agency, anonymity, and power through technology, which teachers have been mandated to provide to students?

2.2.3 Conclusions: A review of cyberbullying research

More than a decade has passed since cyberbullying research was a new academic endeavour, but researchers, parents, children, and educators, and legislators have yet to understand cyberbullying in relation to cybercrime. As a country we continue to bear witness to the consequences of cyberbullying but we have yet to comprehend what is taking place and within what set of conditions. By analyzing the inscription devices of cyberbullying in careful detail, it is then possible to recognize the potential for engaged acts of cyberbullying to become cybercrimes. I also hope that this approach will serve to remind the public that cyberbullying is not interchangeable with cybercrime.

The lack of understanding and knowledge both attribute to reactionary rules and regulations being proposed in schools across Canada (i.e., school wide technology and device bans), as a countermeasure to malicious online activity. The responses from the researchers, parents, and general public have been overwhelmingly resolute in regards to privacy concerns. I hope that clarity can be reached in regards to the terms cyberbullying and cybercrime. While not interchangeable, these terms are closely associated with one another. While cyberbullying cases are complex, there is a desperate need to attend to their details. Following details of cyberbullying helps us recognize the larger systems directly impacting our students.
2.3 Conclusion of the literature review

This chapter defines affinity spaces and discusses their departure from the terminology of community to fully explore their democratic organization and potential for praxis and social change. The chapter explicated the intricacies of cyberbullying, its digital departure from traditional bullying, and the potential for analyzing this phenomenon through the lens of affinity spaces and actor-network theory. In addition, the literature review grounds the methodological design of this research study; this is described in Chapter Three.
Chapter 3: Methodology

This chapter contains all components that enabled this study to take place. I revisit the purpose of this research study, then draw connections between the research questions and the framework which guides this study. A short narrative detailing how the design of this study began to take shape foregrounds the creation of the unit plan, a product of this research study which can be refined or re-ordered in future iterations of this study. This narrative provides insight into the difficulties and tribulations of working with cloud based technologies and the overburdened IT departments of school districts; it is an honest depiction of my own experience in the field of media and technology research. I then discuss the facilities, equipment, and describe what took place in each of the six phases of this study and how each phase was conducted. The last section is devoted to describing the sources of data and the way in which the data was analyzed. I end by addressing how the participants’ insights were analyzed through Gee’s concept of affinity spaces (2005) and used to relate to the study’s findings.

3.1 The research study

In this study, I investigate how the experience of designing affinity spaces would inform their perceptions of online collaboration and cyberbullying awareness. The research was conducted in a secondary school, situated in the Lower Mainland of British Columbia, with a class of Grade 8 students (aged 12-13, mixed gender, and a variety and range of digital skills). The participants first investigated the use of affinity spaces (e.g., private forums and digital worlds) in their class and then proceeded to design their own affinity spaces for a collaborative group project. This particular framework was adapted from MediaSmarts' Use,
Understand & Create: A Digital Literacy Framework for Canadian Schools, which was created to foster digital literacy skills in Canadian education (MediaSmarts, 2015). In addition, participants were involved in designing and arranging physical and digital spaces most conducive to promoting critical discussion of these their collaborative projects. An iterative process of Design-Based Research (DBR) (Kolb, 1984) will be used in future research endeavours, to allow these spaces to be tested and refined (Collins et al., 2004). A variety of data were collected (e.g., collaborative group journals, peer in-class work sessions, and pre and post recorded interviews) to triangulate results and provide a rich comprehension of interactions (Cohen et al., 2011; Mathison, 1988). Through collaboration, the participants were engaged with multimodal composition, such as digital image, text, and sound. This research is intended to explore and inform how grade 8 students design affinity spaces (physical and digital) and what design features they recommend to serve as functioning collaborative workspaces, both in and out of the classroom. Student-informed or student-designed spaces could provide a sense of ownership and self-regulation and give insight as to how their guidelines or codes of conduct inform these spaces and vice versa.

The research was thus designed to situate the following questions within an appropriate framework. The following research questions were posed, which the above methodology addressed:

1. What do students recommend for the design of affinity spaces (i.e., physical and digital) to serve as functioning collaborative workspaces, both in and out of the classroom?

2. How do students interpret the design of affinity spaces in connection with cyberbullying awareness?
The ethnographic techniques employed allowed for student perceptions, in regards to affinity space design and digital literacy practices, to be documented and recognized within the data collection process. The purpose of this research was to explore student design, use, and understanding of these affinity spaces and provide recommendations for future media and technology related curriculum.

3.2 Unit plan development

The design of this research study came into existence with the assistance of the teacher. I was invited to a school collaborative day to observe the planning process for the school’s gifted program, which catered to students who preferred to learn outside of a traditional classroom setting. Four teachers were in attendance and thought their students would be interested and willing to explore the capabilities of affinity spaces as a method of collaboration. At the end of the session, I contacted one teacher who instructed the Grade 8 class and expressed an interest in working with their students, as they were new to the school and displayed a variety of digital skills.

For this unit plan, the teacher wanted to give students the opportunity to work together and have the opportunity to try 3D printing and 3D modeling, resulting in the development of the project, “Surprise Me”. The students arranged themselves in groups, with a maximum of four students and of their own choice, to design their own version of Kinder Surprise toys. The groups were challenged to a set of toys, one toy per group member, to fit within a theme of their choice. The toys could be made of as many pieces as they liked; however, the instructions were to be included with the toy and had to fit inside the toy container. Students were not restricted by 3D modeling and the 3D printer.
The teacher was also interested in testing the capabilities of Microsoft 365 and requested that students use Microsoft OneNote for their collaborative journals. These journals were created by the students and shared with the teacher, so that they could mark the students’ progress and easily assist the students through the development of their Surprise Me toys.

3.3 Research design

As the design of this research study progressed, I realized that by calling this a pilot study would give both myself and the teacher the freedom to test and make notes for future re-iterations and testing of this study and prospective unit plan. The teacher taught the lessons and conducted the activities, while I observed in the classroom as unobtrusively as possible. At the end of the research study, I shared my observations with the teacher through an informal debriefing and included notes from our conversation as possibilities for future research endeavours research study and resulting unit plan.

I wanted the students to have the opportunity to test and refine their affinity spaces to suit their common goal, creating a set of toys; thus, I wanted students to be able to use, test, explore, and refine their Microsoft OneNote journals. The teacher also expressed a concern with allowing students to design and work their own online collaborative spaces both in and out of the classroom; they wanted to conduct lesson on cyberbullying to raise their students’ awareness prior to using the online spaces. The teacher felt that the lesson would encourage students to be reflective when designing their codes of conduct for their online collaborative spaces. MediaSmarts, a Canadian not-for-profit charitable organization for digital media and literacy, had published cyberbullying oriented lesson plans in 2016. My committee member,
Dr. Marlene Asselin shared this information, and I shared these resources with the teacher.

These goals and concerns resulted in the creation of a six stage research study (see Figure 2).

![Research Design](image)

Figure 2: Research Design

### 3.4 Facilities

The research took place in a newly equipped technology lab at a secondary school situated in the lower mainland of British Columbia (Figure 3). All interviews were conducted in the building. Students had the option to use nearby classrooms to privately conduct peer-to-peer interviews.
3.5 Equipment

All equipment for this research can be separated into two categories: equipment used by the researcher to conduct the study, and equipment that was made available for the participants to use in the study. In stage one to five, I used a small notepad and took photos with a camera to record observations as a participant observer as unobtrusively as possible. In stage six, I used a digital camcorder mounted on a tripod and set in a corner of the interview area to record the closing group interviews. I also had a laptop to load the group collaborative journals; I used the OneNote journals as a prompt to remind the students of the subject of the closing interview, as the interviews were conducted after a three week period to accommodate the teacher and the spring break.

The participants were given iPads, markers, pens, and paper to record their peer interview session. The videos were then transferred to a password protected PC located in a secure office in the Neville Scarfe building at the University of British Columbia. The use of these recording devices proved useful in this study to record specific behaviors and
conversations for later analysis, so that I did not feel constrained by time when making observations (Flick, 2014, p. 335). In addition, I was able to replay the recordings for additional layers of thematic coding to better analyze behaviours exhibited by the participants and the difference of behaviours between each group of participants (Flick, 2014, p. 426). In stages three to five, participants had full access to 28 PCs for design work. In addition to design work, participants were welcome to bring their own devices, such as laptops or tablets (Figure 4). The participants were also given iPads for their own use during the group work sessions. The iPads were used for journaling the progress of their collaborative projects, which were later analyzed through thematic coding.

![Figure 4: Option of Multiple Devices for Collaboration](image)

### 3.6 Research methods

The research design relied on three core methodologies: case study, design-based research, and ethnographic techniques, including interviews and participant observation. This
is a case study of a class of 28 students, age 12 and 13, who entered Grade 8 in the fall of 2015. This research study was initially supposed to take place in September 2015; students were required to return parental consent forms to the school district in order to obtain Microsoft OneNote accounts. As some participants forgot, lost, or neglected to have the forms signed, this caused a delay in the start of the research study. In addition, the school district IT department was overburdened with work and there was a wait time for the entire class to acquire online access to their Microsoft 365 accounts.

This research with the participants finally took place in February 2016 for a duration of one month. As the purpose of this research is aimed at understanding students' perceptions of affinity spaces, this study examines students' interactions with applications and technologies; in addition, the study utilizes transcriptions of recorded interviews, in-class work sessions, observation methods, and analysis of the collaborative work journals produced by each group. This research was completed in six stages (Figure 2). Each day consisted of 75 minute work sessions, which is the equivalent of one class at the secondary school within this study.

3.6.1 Procedure

This research study was conducted in six stages and in a total of 15 hours; certain stages were allotted extra work sessions to accommodate the speed of the students’ progress. For example, the teacher and I initially thought the student exploration and student creation stages would be completed in two work sessions; however, stages three to five overlapped and occurred simultaneously as students designed, tried, re-examined and compared other applications, then re-evaluated their designs (see Table 2). Spring break also took place from
March 12 until March 28, which accounts for a break in the study. The teacher also requested a week of time to attend to other classroom matters with the students, which is the reason why the closing interviews took place one week after the end of spring break. I also revisited the school on four occasions (April 5, 7, 11, and 14) to conduct the closing interviews, as some students were absent. Despite these unexpected delays, the study was still conducted in a total of 15 hours.

Table 2: Revised and Final Research Study Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Stage</th>
<th>Materials</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, February 16, 2016</td>
<td>Stage One: Initial peer interviews</td>
<td>Interview questions, 6 iPads, paper, pens, markers.</td>
<td>Initial peer interviews</td>
</tr>
<tr>
<td>Thursday, February 18, 2016</td>
<td>Stage Two: Teacher lesson</td>
<td>MediaSmarts lesson plan, accompanying PowerPoint presentation.</td>
<td>participant observation</td>
</tr>
<tr>
<td>Monday, February 22, 2016</td>
<td>Stage Three: Exploration and student findings continued,</td>
<td>6 iPads; technology lab computer, 28 kinder surprise eggs.</td>
<td>OneNote journal, participant observation</td>
</tr>
<tr>
<td>Wednesday, February 24, 2016</td>
<td>Stage Three: Exploration and student findings continued,</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
</tr>
<tr>
<td>Friday, February 26, 2016</td>
<td>Stage Three: Exploration and student findings continued, Stage Four: Student creation</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
</tr>
<tr>
<td>Tuesday, March 1, 2016</td>
<td>Stage Three, Exploration and student findings continued, Stage Four:</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
</tr>
<tr>
<td>Date</td>
<td>Stage</td>
<td>Materials</td>
<td>Data Source</td>
</tr>
<tr>
<td>-----------------</td>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Thursday, March 3, 2016</td>
<td><strong>Stage Three</strong>, Exploration and student findings continued, <strong>Stage Four</strong>: Student creation continued, <strong>Stage Five</strong>: Recording Period</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
</tr>
<tr>
<td>Monday, March 7, 2016</td>
<td><strong>Stage Three</strong>, Exploration and student findings continued, <strong>Stage Four</strong>: Student creation continued, <strong>Stage Five</strong>: Recording Period</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
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<tr>
<td>Wednesday, March 9, 2016</td>
<td><strong>Stage Three</strong>, Exploration and student findings continued, <strong>Stage Four</strong>: Student creation continued, <strong>Stage Five</strong>: Recording Period</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
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<td>Friday, March 11, 2016</td>
<td><strong>Stage Three</strong>, Exploration and student findings continued, <strong>Stage Four</strong>: Student creation continued, <strong>Stage Five</strong>: Recording Period</td>
<td>6 iPads; technology lab computers.</td>
<td>OneNote journal, participant observation</td>
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3.6.1.1 Stage one: Initial peer interviews

Stage One took place on February 16, 2016 (Table 2). Sheets of focused interview questions were distributed amongst students at the commencement of the research study. The participants were self-organized in groups of 3 to 4 (Table 3) and were given iPads, paper, pens, and markers to conduct their peer interviews. As students may feel more comfortable providing responses in written or spoken modalities, I gave students the option to audio record, video record, or write their responses on laptops or with paper and pen. I wanted to give the participants the opportunity to respond in a most natural manner, to avoid discomfort and to elucidate an honest answer. Students were also encouraged to skip questions if they were unsure or did not know the answer. The peer interview questions were re-used in the post-interview with the intention to allow students to reflect on their prior knowledge and to give me the opportunity to triangulate and check the validity of the responses. The focused peer interview questions are open ended to provide rich data; all the interviews were held in
groups to allow for the respondents to support each other in remembering events that will lead beyond the answers of a single interviewee (Flick, 2014, p. 243). The data collected from the focused interview questions enabled students to discuss prior experiences with digital media and helped identify which students have engaged with affinity spaces. These affinity spaces may include blogs, wikis, apps, forums, social media (e.g., Facebook), or online collaborative workspaces (e.g., Google Drive, Evernote, One Note). As this study investigates how designing affinity spaces relate to digital practices cyberbullying awareness, the focused interview questions were vital to ascertain an understanding of prior engagement with affinity spaces and digital practices. The focused interview questions are (see Appendix A):

1. Describe and explain the following words.
   a. Technology
   b. Digital Citizenship
   c. Group Work
   d. Online Collaboration
   e. Cyberbullying

2. What do you think is the ideal way to do group work using technology? What kinds of problems could technology solve? What kinds of problems could be caused or worsened by technology?

3.6.1.2 Stage two: Teacher lesson

Stage Two took place February 18, 2016 of the study (Table 2). The teacher delivered a 60 minute lesson based on the lesson plan developed by MediaSmarts in 2015, titled
"Cyberbullying and Civic Participation". All materials for the lesson plan can be found at the following website:

http://mediasmarts.ca/lessonplan/cyberbullying-and-civic-participation-lesson

The teacher modified the lesson to accommodate the students as they felt that some of the examples provided in the lesson would not be of interest to their students. During the lesson the students interjected during the lesson and asked many questions. The accompanying PowerPoint contained numerous statistics which the students did not agree with, as they felt the statistics did not represent their experiences with cyberbullying; throughout the presentation, the students argued with the statistics provided by MediaSmarts and would hold a class vote as to whether they agreed or disagreed with the presentation. The teacher felt that this presentation drew the attention of the students and had served its purpose and made them aware of cyberbullying, prior to investigating and exploring online collaborative spaces.

3.6.1.3 Stage three: Participant explorations

In Stage Three, students continued to work in their groups (see Table 3) and were given the option to investigate and explore and compare one of the following applications to OneNote: Evernote, Google Drive. These investigations were documented on the online collaborative work journals and facilitated self-directed student study and exploration of the potential of these affinity spaces. See Appendix B for the set of instructions.
3.6.1.4  Stage four: Participant creation

Students continued to work in their assigned groups and create a collaborative
workspace for their collaborative group project, which was a unit plan assigned by the
teacher prior to the research study. Each group was tasked with recording their work progress
in an online group journal, which the teacher and I had access for the duration of the study.
Students used OneNote to document and share their group journals with the teacher and
myself. The students were given the freedom to organize and utilize their group journals as
they decided, so long as their journals demonstrated and documented progress on their
project. The set of instructions distributed are included in Appendix C:

Using ideas from your investigation and assessment of your application, create a
collaborative workspace using the application of your choice for your "Surprise Me"
group project.

A completed group project must include 2 things:
1. A collaborative workspace documenting your group work
2. Your completed group project

In reality there was overlap between stages three, four, and give, as students
continued to adjust and compare their OneNote journals to other affinity spaces with which
they had previously explored. As the students worked on their group projects in the class, I
was in attendance and observing the work sessions. In this process, students continued to
design and adjust their affinity spaces as they worked on their group project. I made note of
working dynamics between students and the use of the affinity spaces by monitoring the in-
class work sessions in conjunction with the final collaborative work journals.
3.6.1.5 Stage five: Participant recording period

The students worked on their collaborative group projects and recorded their progress in their OneNote journals. This OneNote journals included three main sections: one section was dedicated to the rules, values, group guidelines, or common goals to help facilitate their collaborative efforts. A second section was dedicated to their critique of various online affinity spaces; some groups solely wrote of their experiences using google drive. A third section detailed the progress of their “Surprise Me” project, assigned by the teacher; their progress was indicated through the use of images, and written notes by all group members. During this stage, I acted as participant observer and unobtrusively wrote notes on a small notepad and took photos with a camera to help recall details of my observations.

3.6.1.6 Stage five: Closing group interviews

The research closed with the students’ post interviews. I conducted the post interviews as this gave me the opportunity to ask probing and clarifying questions. The same focus interview questions were re-distributed to remind the students of their first interview and allowed students to expand and change their perceptions after their experiences in designing and utilizing affinity spaces (Appendix E). In addition to the questions above (Appendix A), one question was added to enable students to conclude their interview in a final and closing statement: If you were to give students advice on how to use online collaborative workspaces, what advice would you give? The interviews were conducted in the same groups and in the neighbouring classroom for privacy (Docket et al., 2009). The purpose of the group interviews was to create a platform for students to discuss any
extraneous observations or perceptions and for me to pose questions in regards to in-person
and collaborative work journal observations that require further clarity.

3.7 Data collection methods

I distributed permission forms to the participants' legal guardians prior to the in-class research. Participants were informed that they would be recorded, and record each other in interviews, and their insights, collected in the form of their collaborative work journals and recorded interviews, would be used as data for the research. Through informed consent, I ensured that participants and the parents of the participants had the opportunity to withdraw from the study at any time (Flick, 2014, p. 54). As indicated, the focused interview questions were administered before and after the research study. As this research study is a part of the larger SSHRC funded How We Learn project, participants and the guardians received additional information regarding the purpose and goals this larger project. In summary, data collection involved five techniques: Initial peer interviews, participant observations, OneNote journals, and closing group interviews (Table 2).

3.7.1 Initial peer interviews

The initial peer interviews were conducted at the commencement of the study. The initial interviews were conducted by group members in private; this gave the students a safe space to discuss their opinions, attitudes, and beliefs regarding digital literacy, technology, and affinity spaces without the fear of being judged by an authority figure (i.e., a teacher or researcher). Participants were given the freedom to use empty classrooms and spaces within the school wing to conduct their interviews in private (Figure 4).
3.7.1.1 Focused interview questions

The focus interview questions were utilized in the initial peer interviews and during the closing group interviews with a slight variance (see Appendix A). The focused interview questions were developed in consultation with my Supervisor and the teacher. The focused interview questions were open ended to allow for a collection of rich and detailed information, rather than yes-or-no or agree-or-disagree responses (Rubin & Rubin, 2012, p. 29). The questions and the order provided, however, were not fixed and allowed for students to adapt questions into the flow of the conversation amongst each other (Flick, 2014, p. 199); as an example, Appendix E has been included to demonstrate how this flexibility facilitated a natural flow of conversation.
3.7.2 Participant observations

Observations were made during the study and I took notes on a small notepad whenever convenient. As the classroom was organized in rows, it was difficult to stand stationary in one area during the course of the class. I assumed the role of the participant observer and used focused observation (Flick, 2014, p. 313). I intended to oversee work progress up close and make note of participant engagement with the text. I made observations in note form when reviewing the projects completed by the participants at the end of the camp. These projects were submitted in conjunction with their online affinity spaces with embedded images. Observations were made in order to document participants' engagement with the affinity spaces and of collaborative work environments.

3.7.3 Closing group interviews

All interviews were conducted in the classroom beside the technology lab where the study took place. The closing interviews were conducted in groups and recorded on a digital camcorder beside the table. All interviews were conducted in groups, as this enabled the respondents to support each other in remembering events, with the intention of leading to rich data beyond what a single interviewee may answer (Flick, 2014, p. 243). The sheet of focus interview questions had a slight variance to the questions used in the initial interviews; I asked participants whether the definition of any of the words had changed for the participants after completing a collaborative group project using Microsoft OneNote journals (see Appendix A and D). I also used a laptop and opened the OneNote journal that the group had created to use as a prompt during the interview; I used the collaborative OneNote journal
to remind the participants the focus of the interviews, as I had not seen the participants for three weeks.

3.8 Sources of data

Numerous sources of data allowed me to triangulate and increase the validity of the findings (Mathison, 1998). These sources of data include the observation of the participants, the collaborative group journals, which are also recognized as the student designed affinity spaces, and finally the video recordings of the peer-to-peer pre interviews and I conducted the post interviews.

3.8.1 Participants

This research was aimed at students age 12 and 13 who entered Grade 8 in the fall of 2015. A class of 28 students participated in the study. Current research suggests that middle school students lack an ability to recognize cyberbullying behaviors or inappropriate behaviours that could lead to cyberbullying (Kite et al., 2010; Shariff, 2009). The lack of knowledge in regards to conduct and consequences is one of the attributed causes of cyberbullying. For these reasons, I decided to focus my research study on participants entering high school, as there is a need to increase reflective digital practices, which include ethical and social responsibility behaviours, with this demographic. We applied and received permission from the Vancouver School Board to conduct my research with the Grade 8 class (see Appendix J). Appendices J, H, and I include all consent forms used for this study.
3.8.2 Designed affinity spaces: OneNote journals

The designed affinity spaces are sources of data. The OneNote journals were documentation of the collaborative work done by the participants and informed me of any difficulties or and ease with which the participants had in using the affinity spaces or completing their group projects. As previously indicated, I collected data through ethnographic techniques and intend to utilize DBR as a method to improve on further designs of affinity spaces. Notes and observations made of the work journals were then compared to observations made of the interviews to triangulate findings (Mathison, 1988, p. 14); comparing these observations allowed for a more complete and complex understanding of the participants' level of engagement with affinity spaces.

3.8.3 Video recordings

The video recordings were transcribed and analyzed after the data collection and I made further notes and coded observations. Examples of these transcriptions can be found in Appendix E and F. I chose to video record the closing group interviews; as Hopf (1985) states that this provides “increased options for an inter-subjective assessment of interpretations… for taking into account interviewer and observer effects in the interpretation… and for theoretical flexibility” in comparison to more selective memory protocols (as cited in Flick, 2014). The research questions framed the data analysis and composition of data into themes for further analysis. I also drew on notes of the participants' group OneNote journals to evaluate findings, draw comparisons, and justify any inconsistencies to complete a thorough analysis of the observations (Mathison, 1988, p. 14).
The data collected from the focused interview questions frequently took form of a group discussion, which corresponds to how opinions are typically produced, expressed, and exchanged in the classroom (Flick, 2014, p. 243). In addition, the interviews conducted at the beginning and end of the study were compared with each other and with the observations made of recorded data.

3.9 Data analysis

The data was analyzed using a grounded theory approach (Strauss & Corbin, 1990). I worked with and refined themes as they emerged and interpreted data through Gee’s concept of affinity spaces (2005). I continued to review literature regarding affinity spaces as themes began to emerge during the process of analysis. After the completion of stage one, the initial peer interviews, audio and video recordings were transferred from the iPads and then transcribed. Some students chose to submit responses written on Microsoft Word, while others chose to submit answers written on paper with markers. After the completion of the study, I analyzed the initial peer interview data. I began to make note of word frequency patterns and wrote a list of subtopics, as I analyzed the initial peer interview data with reference to the research questions. Following this step, I collected all the videos from stage five, the closing group interviews, and transcribed the footage. Two samples of the closing group interviews can be found in Appendix E and F. I compared the responses between the initial peer interviews and closing group interviews, and made note of recurring words and themes. I highlighted each theme separately, and then coded the interview data for themes.

Next, I printed all OneNote journals and compared recurring themes from all interview data with the written work completed in the OneNote journals. As the time stamps
of additional edits and notations in OneNote could not be transferred to another software, I was not able to use MAXQDA qualitative data analysis software as I had originally intended. Time stamps in the OneNote journals helped me to understand the students’ design process of their affinity spaces and enabled me to triangulate and validate themes that emerged from the data. The data was analyzed in small sections, conceptualized, and re-assembled to generate meaning (Strauss & Corbin, 1990, p. 3). Lastly, I studied all interview data and OneNote journal data with reference to field notes to triangulate and further validate the themes that re-emerged upon a final revision of the data.

Conclusion

This chapter addressed the research design, setting, and stages of data collection. The purpose of this research was aimed at understanding students' perceptions of affinity spaces. It utilized transcriptions of recorded interviews, in-class work sessions, observation methods, and analysis of the collaborative work journals produced by each group. The chapter elaborated on the procedures, methods, and techniques used to collect data and described how the research study was designed, how the participant sample was selected and formed, and how the unit plan took shape. The chapter concluded with how the participants’ insights were analyzed through Gee’s notion of affinity spaces. The next chapter presents the data analysis and findings.
Chapter 4: Findings

The findings of this research are presented and analyzed in two main sections. The first section answers the first research questions in eight subsections, which were named according to themes developed from the data analysis. The second section addresses findings in relation to the second research question. Numerous sources of raw data were collected to provide triangulation and to validate the findings, which are organized and presented in these eight themed sections. These data were first collected from peer-to-peer interviews recorded through audio recordings, student transcriptions of interviews, and digital video recordings on iPads. Subsequently, data were also collected through observations made by myself during the class work sessions, through the collaborative work journals on Microsoft OneNote, and through group interviews, which I conducted, using the same initial focus questions from the peer-to-peer interviews.

As there were a total of 28 participants, forming 10 groups for collaborative work, this made it difficult to assign students pseudonyms. For ease of data analysis, each group was assigned a letter (A to J); subsequently, each student was assigned a number (1-4) (see Table 3). While this system may appear to depersonalize the participants, this research study relies heavily on interview and journal data; thus, I believe the quotes provided from the participants demonstrate the depth, extensiveness, and individuality of these adolescents. Following the triangulation, the collated data were then analyzed through Gee’s concept of affinity spaces to answer the research questions presented in Chapter One. Sociocultural theory, activity theory, and actor-network theory also informed the analysis but were secondary to a framework of affinity spaces.
Table 3: Participant Organization

<table>
<thead>
<tr>
<th>Group Letter</th>
<th>Participants in Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A1, A2, A3, A4</td>
</tr>
<tr>
<td>B</td>
<td>B1, B2, B3, B4</td>
</tr>
<tr>
<td>C</td>
<td>C1, C2, C3</td>
</tr>
<tr>
<td>D</td>
<td>D1, D2</td>
</tr>
<tr>
<td>E</td>
<td>E1, E2, E3</td>
</tr>
<tr>
<td>F</td>
<td>F1, F2, F3</td>
</tr>
<tr>
<td>G</td>
<td>G1, G2, G3</td>
</tr>
<tr>
<td>H</td>
<td>H1, H2, H3</td>
</tr>
<tr>
<td>I</td>
<td>I1, I2</td>
</tr>
<tr>
<td>J</td>
<td>J1</td>
</tr>
</tbody>
</table>

4.1 What do students recommend for the design of affinity spaces (i.e., physical and digital) to serve as functioning collaborative workspaces, both in and out of the classroom?

The first three sections focus on the first of the research questions posed in Chapter One: "What do students recommend for the design of affinity spaces (i.e., physical and digital) to serve as functioning collaborative workspaces, both in and out of the classroom?"

As discussed in Chapter Two, an affinity space is a physical or digital space, where people can interact and share common interests, ideas, or goals (Gee, 2005). Individuals of all identities, skill, and knowledge levels are given access; thus, diverse membership and democratic participation is encouraged within affinity spaces. The participants were required to complete a group project, assigned by their teacher, and were asked to design their own affinity spaces in Microsoft OneNote to assist with their collaboration. Findings related to
how students design affinity spaces for collaborative work emerged in three themes: Group Presence, Individual Digital Space, and Guidelines for Clarity. I discuss these three themes in the appropriate subsections that follow.

4.1.1 Group presence

Many participants found that in order for group collaboration to take place, it is vital for all members to participate and maintain a sense of presence within the group. C3 advised that it was important to be alert for and to "always be ready to check if anyone sent you anything, and if you need to send something back". H3 also spoke of the importance of clearly communicating where and when to meet, "Try to make sure you're all there [...] as in all in the same space online". On one of the workdays, I observed B1 and B2 helping to locate I1 and F3. I1 and F3 were both absent from school that day and both groups, I and F, stated to the teacher that they could not continue their project without their group members. At this moment, B1 and B2 so happened to be logged into their game chat functions on their personal devices and told the teacher they had seen them online. I1 was contacted through Hearthstone\(^2\) to email completed material, and F3 was contacted through Clash of Clans\(^3\) to complete the setup of his collaborative journal.

The concept of digital space was also noted by group A, as they were initially producing work on both Google Docs and OneNote.

\(^2\) A free to play mobile strategy card game that has a built-in in-game chat function.
\(^3\) A free to play mobile massively multiplayer online (MMO) game that also offers a chat function upon login.
A3: But I think it's important to stay with one technology because it can get confusing if you're using multiple things.

A4: Yeah, like "Oh, we're using Google Docs today" and then later you're going on another thing.

A3: Yeah that's where you can lose information, if you're using different technologies.

A3 and A4 determine that it is important to discuss the time and location (i.e. digital space, technology, or program) in a face-to-face context about a future digital meeting; similarly, D1 advised on sharing a calendar to organize when group members could be online together. Members of groups A, C and D all stressed the importance everyone's presence in the same digital space to improve one's own accountability and reliability within the group.

Both groups A and C remarked that they appreciated the ability to see others work in real-time; the participants in group A remarked how both OneNote and Google Docs labels each person's cursor and shares the cursor location on the page. During my observations, I recalled seeing A1 call over her shoulder, "Dude, answer the questions", to which A4 responded, "Ok, ok, whoops. I forget, what are we doing?" I also heard A1 and A3 frequently call out to A4 from their desktop workstations, "Where is your cursor!"; In the pre-interview, A2 shared that she was apprehensive of group work as she had often been forced to work with other students who did not want to contribute, which left her to do the majority of the project alone. After the completion of their project, A2 spoke in the post-interview:

This didn't happen in our group, but it's happened to me in the past when I work with people online. They were like, 'Oh yeah, I uploaded it, but I guess it didn't go on’, but I was pretty sure they just didn't do it and were making excuses.

A2's frustration is a result of not knowing whether the technology or previous group member is responsible for the missing document. In this situation, it could have been a faulty connection, a program error, or the individual's unwillingness to work; a non-human actor
could have been easily responsible for missing document. Latour explains the seeming diffusion of responsibility as a misrecognition of power: The term 'actor' indicates "that it's never clear who and what is acting when we act since an actor on stage is never alone in acting [...] if an actor is said to be an actor-network, it is first of all to underline that it represents the major source of uncertainty about the origin of action" (Latour, 2005, p. 26). Uncertainty and frustration is the result of an untraceable set of actions and the inability to recognize which actor is responsible for which act.

The design of this A2's prior workspace did not enable her to trace and determine which actor, the group member or the technology, is ultimately responsible for the missing work. A2 was unsure whether the work was not completed due to a technological error or the unwillingness of her previous group member. With an appropriately designed space, group A was the first to complete their project and all members maintained their friendship. A2 told her group members in post-interview, "This is the first group project where I haven't ended up hating everybody afterwards". Group A's continued friendship was evident in the post-interview recording, as they ended their post-interview with an impromptu dance routine and birthday song.

### 4.1.2 Individual digital space

All groups in the study arranged their OneNote notebooks with collaborative space and individual digital space for each group member. During class, I observed a number of participants engaged in discussion regarding household physical workspaces. G1 shared, "Don't get the keyboard greasy and don't get nachos on the bed". F3 replied, "Don't put all my junk on my brother's bed". A2 discussed dealing with multiple working spaces, "I work
on the computer, the floor, or the desk. If the room is messy, I can't work". A2 then reflected that the frequency with which she moved from space to space was in relation to the degree of untidiness of the workspace. When others commented on C1 who shared that he worked on the couch, G1 countered, "During spare block the cafeteria is for individual study but other times you can use it for group work". G1 recognized that there were appropriate times and uses for a variety of spaces. I believe that this discussion impacted the rules and guidelines created for the affinity spaces. The participants were engaging with prior knowledge of physical spaces and applied a similar construct of rules to organize their digital spaces. By creating parallels between familiar physical workspaces and the digital affinity spaces, which the participants were creating and designing, detailed guidelines were written and revisited during the study.

A1 was concerned with allowing everyone's voice being heard and explained in the post-interview how "everyone can have their own separate pages in their folder [so that] nobody gets upset that their ideas aren't being heard". A1 was most concerned about creating a space that allowed for democratic participation. In group A, every member was involved with each stage of the project's process, rather than dividing stages amongst group members. Group B created rules, which considered the limitations of their affinity space. All participants complained about the slowness and delayed synching of the OneNote application; at times, participants became confused when portions of the document they were editing suddenly disappeared because a group member had moved the section minutes before. To accommodate the limitations of the software, Group B added the following rule:

Other users' property is to be treated with respect and care. If not, users who are both typing something without paying attention to each other's modifications can result in damaged documents and sometimes deleted portions.
During class, I also noted B1 walking down the row of computers to B2 and pointing to a section of the screen, "Can I delete this?"

While the majority of the groups made allowances for personal space and personal work to be completed, group E's overarching philosophical views informed their designed space and guidelines. In the post-interview, group E emphasized the importance of recognizing individual identity within the collective group. E2 explained their group beliefs and working dynamic:

We all have different experience with technology. We're not on the same level. Somebody may be a bit more skilled than the other and that's totally fine because we're learning. What we can create is also difference: what we're personally passionate about and what we like is different as well, and that will reflect in our final project.

E2 expresses her recognition of the function of their designed affinity space, a row of desktop computers in the classroom, and their collaborative group journal, which was remarkably different from other groups in the research study (Artifact 1).
Artifact 1: Group E OneNote Journal Rules

Group E expressed the importance of keeping individual spaces organized and to not enter another's personal online workspace without authorization. The majority of the groups created colored tabs for each phase of their project, which are shown across the top of the screen, and added individual group member pages within each tab, which would be seen down the right hand side of the notebook (Artifact 2). Instead, group E created a tab for their group work, with individual phases of the project as pages going down the right hand side of the notebook (Artifact 1). E2 shares that the group recognizes everyone is learning and the need privacy, room to experiment, and try things without the interference of others; thus, an entire coloured tab with multiple pages is devoted to each group member.
Artifact 2: Group B OneNote Journal Organization

In the post-interview, B2 reflected on how he would advise peers learning to use online collaborative spaces.

Get to know your software, just so you don't mess anything up by accident. You could probably just play with it at home on your own time, instead of experimenting with the product or what your group is making. Just take, for example, Google Drive. If you don't know about something, make a separate document that only you can access and play around with it, so you can get to know your software. So you don't delete something important.

B2 also recognizes the need for space and privacy, in order to freely learn and experiment without intrusion or impeding the group's working dynamic. In addition, Group B created the following rule to accommodate the need for the freedom and privacy.
The removal, change, or exposing of other users' work, activities, or any other property is only allowed with said users' permission. Do not take control of what others are doing.

Both groups B and E attempted to create safe spaces for group members to explore ideas without the fear of being ridiculed or chastised; safe spaces for learning were created through careful design.

4.1.3 Guidelines for clarity

The participants began to appreciate the value of rule creation for their affinity spaces. The comments in this section were all reflections extrapolated from the closing group interviews conducted with each group. In her pre interview, A3 stated that one of the problems which could ensue as a result of technology were editorial changes in documents being made without all group members' approval. A2 expanded on this concern during the group's post interview:

People submitting things or editing and or making certain comments on it without the group's permission. Things can kind of get out of hand with people inserting different information without anyone's permission and if someone submits it, then they're like, "Wait, I didn't see this". It can worsen a way the people finalize what's going to be handed in.

When group members complete tasks outside of class time, they are not able to recognize or recall someone physically working on a section of the collaborative project. To compensate for this, clear guidelines were created by group A, and A2 suggested reviewing all new completed work at the start of every work session. Group C experienced a similar incident; C2 provided the following advice in the post interview:

You need to be aware of what other people are doing, so that you're not doing work that they're doing or not having to redo your own work. I've had projects in the past
where I've done something, I've asked people to do something, and those people did the same thing [that I did]. There were multiple copies of things and no copies of things. It can be chaotic if you don't know what everyone is doing. You almost need to become a hive.

While C2 advises on the need for awareness in the group to prevent frustration and encourage group mentality, B4 recognized the need for rules that recognize and address each members' individuality. B4 reflected in his post interview on terms that stood out after the completion of the research study:

Digital citizenship, because before doing our rules and values, I never really thought about it much. It was just kind of like an idea we had for social communication that I applied here. But after we made the rules clear, what we could do and shout not do, it was better because then everybody knew the rules for our whole group. These rules are not just for ourselves, because everyone could be brought up differently.

B4's recognition of the difference between group members speaks to the diverse group membership afforded by affinity spaces. In addition, E2 experienced a change of meaning for the term 'digital citizenship':

There's more to digital citizenship than what we originally thought because not only do you have to respect and contribute to the online community, but as an individual there are a lot of things you need to watch out for. As a citizen you need to fulfill your personal criteria, your own responsibilities online, not just to respect others in the online community.

E2 spoke to accounting for the individual needs of each group member; while affinity space theory recognizes that membership is based on a similar interest, each member can be a participant in a space for a different reason or goal (Curwood, 2003; Gee 2005). Through a code of conduct, a list of guidelines, or a page of rules, affinity spaces are capable of facilitating democratic participation amongst a collective of individuals, each boasting a different skill or level of expertise all while sharing the similar interests (Gee, 2005).
4.2 How do students interpret the design of affinity spaces in connection with cyberbullying awareness?

Many participants noted the difference between communicating face-to-face in comparison to conversing through digital means. Students also discussed a need for balance of communicative modes and the difference between digital and physical space. The majority of these reflections are derived from two questions posed during the post interviews: "What kinds of problems could be caused or worsened by technology?" and "What advice would you give other students who were trying to use online collaborative spaces for group work?" These two questions yielded rich data, which is discussed in two sub themes: clarity of communication, and empowerment through anonymity. Four themes discussed in this section, Web Culture, Balance of Communication Modes, Online Communication and Digital versus Physical Space, further address the second research question: How do students interpret the design of affinity spaces in connection with cyberbullying awareness?

4.2.1 Web culture

A number of participant groups referenced web culture phenomena within the OneNote journals on the page of guidelines and during the pre and post interviews.
examples of web culture phenomena were observed in interactions made by group A, C, and E, and include references to fandoms, memes, and "Trump Dumpin".

In class, group A explained that their group guidelines comprised of serious guidelines and a number of "fun rules" to help build their group dynamic (Artifact 3).

Artifact 3: Group A "Community Rules / Serious Rules"

"No dank memes" was included as the group considered memes to be a distraction from accomplishing the shared goal, the group project; this rule was deemed extremely critical that it was repeated three times to stress its importance (Artifact 3.) The rule "Don't

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4 A community or subculture that celebrates a person, television series, or book.
5 Defined as an "image, video, piece of text, etc., typically humorous in nature, that is copied and spread rapidly by Internet users, often with slight variations. Also with modifying word, as Internet meme, etc." (OED)
6 This study took place during the 2016 US presidential election.
add secret memes and such" was also included as memes are defined as a humorous image, video, or text, which is copied and shared rapidly (OED). Secret memes were identified as an artifact of exclusion, which would harm or damage their community and working dynamic.

Similarly, C2 suggested a guideline regarding the use of memes in their collaborative workspace; "NO DANK MEMES! THIS IS A PROFESSIONAL THING THAT [the teacher] GETS TO SEE! Ok" (Artifact 4).

Artifact 4: C2's Draft of Rules

Group C recognized the importance of creating a professional working environment for their online space, as it would be evaluated by the teacher. This is evidenced by C2, yelling in all caps on his personal draft of the rules and values (Artifact 4). In the final version of their rules, Group C specified, "Don't post things unrelated to work, especially
NSFW material" (Artifact 5); Group C recognized the importance of staying on-task and not posting inappropriate non-work related content within their collaborative workspace.

Artifact 5: Group C Final Rules and Values

In addition to memes, group A’s value of fandoms was recognized and incorporated into their community rules: "Fandoms are to be respected" (Artifact 3). The group believed that dismissing fandoms were an act of disrespect and viewed as a personal attack within their community; during my observations, fandoms were frequently referred to as secondary examples. As these participants were aged 12 or 13, they did not have as many personal experiences to reference to communicate understanding amongst one another; I recall A4

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7 NSFW is an online abbreviation for "Not Safe/Suitable For Work" and includes material inappropriate for a typical workplace.
responding to a group member's observation by stating, "Oh yeah, like what happened in Doctor Who\(^8\)."

Rather than citing memes or fandoms, group F cited Donald Trump as an example of behaviour that was not respectful. "Be respectful. Listen. Go beyond that and take input into consideration. Not useful to just sit down to listen if you are still a "I'm so right" Donald Drumph. Compromise necessary, equal say (Artifact 6\(^9\)).

![Artifact 6: Group F Rules and Values](image)

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\(^8\) Doctor Who is a British science-fiction television program produced by BBC.

\(^9\) The teacher was not involved with writing the content and provided troubleshooting assistance to group F, which accounts for the teacher's name appearing on the right-hand side of the page.
Group F consistently referenced Donald Trump during their initial peer interview and likened his behaviour to a cyberbully. The following conversation took place when F1 and F2 were discussing what problems could be caused or worsened by technology:

F1: There's worse aspects of communication, like being a jerk, cyberbullying. And you can already see parts of these popping up, like let's say Donald Trump is a jerk, and when he goes on... when he gets his big fat mouth on Twitter, it's just amplified by 100 times. Would you agree?

F2: I would agree, but let me convey this a little clearer. Things like social media worsen. You can find people who agree with your opinions, which it can be a good thing, but it can also lead to problems if those opinions are offensive or intended to hurt people.

Group F was able to recognize behaviour in web culture not conducive to collaborative work and cited a real world example to bring clarity to their group's rules and values. During my class observations, F1 and F2 frequently reminded each other to stay on task and to not "get caught up in 'Trump Dumpin'". F1 and F2 recognized the effect which one individual could have on a digital platform and valued the ability to respect one another by listening to each other's input.

4.2.2 Balance of communication modes

Numerous participants recognized a difference between communicating through digital means and in-person. B4 recognized the lack of visual cues and one-to-one contact in messaging and text based affinity spaces. He gave the following advice to peers using affinity spaces:

Yeah, I would say to make sure that you're comfortable with this space you're working on and that everyone else around you working on the same space is also

10 An online social networking tool which allows users to broadcast messages at a rapid speed.
comfortable. I think it's harder to do when you're on an online space, versus just being together, because when you're together it's easier to talk it out or find someone who can be a moderator and help talk it out. When you're online, it's hard to communicate more truthfully, because you could say anything or you could not say anything and they can't read your face. So they don't know if you're actually comfortable. I think that it's very important that everyone is comfortable.

In this piece of advice, B4 acknowledges that in common productivity software there tends to be a lack of physical and visual cues. Unless the individual was engaging in a video conferencing conversation, the majority of the affinity spaces support text-based communication; therefore, members who are not as experienced or skilled in written communication are at a disadvantage and in a position of vulnerability. In working solely online and without a moderator, B4 expresses it is more difficult to communicate in an online context as a result of inexperience or novice written capabilities. Discomfort, unfamiliarity with the space, technology, or a multitude of other factors, can bring further stressors and more difficulty to a new learner. Cyberbullying has been related to the use of digital means as a form of contact with lower levels of supervision (Patchin & Hinduja, 2006) and without supervision or guidance, a long recurrence of problems may result from an initial issue which never received attention from a more knowledgeable or communicatively skilled figure, such as a forum moderator, teacher, or adult.

Similarly to B4, C2 reflected on problems that took place during their collaborative group project.

When you're using technology like this and are typing out a limited number of words rather than speaking, and being there to answer questions. Sometimes things can be misinterpreted. Because you're not really there to answer questions it could cause some misinterpretation and confusion in terms of the work.
C2's experience with misunderstanding and misinterpretation of words can be attributed to the process of learning as described by Vygotsky's Sociocultural theory. While it is possible for students to improve their manner of speaking, behaviour, and use of technology in the process of collaboration (Tudge, 1990), adult guidance becomes necessary when the students are at the same level of competency, or the students are struggling to acquire semiotic and technological fluency at the same time. Learning is best facilitated under adult guidance or in collaboration with more experienced peers (Vygotsky, 1978, p. 86). Participants stated a preference for face-to-face communication if they were in class rather than writing or sending messages. B2 reflected that while he appreciated online collaboration, he recognized that his group members sat in a row beside each other. "Why type in the thing when we could just talk to each other?" Members of group H reflected on how technology negatively affected their group:

H1: Communication definitely.
H3: Maybe face-to-face as well, it helps to be there.
H1: It's hard to get your ideas down too with technology.
H3: We've all had the situation where you've sent a text and it's taken the wrong way. So things can get miscommunicated or interpreted the wrong way and this could be solved with talking face-to-face.

A multitude of participants also echoed the need for a blend of face-to-face and in-person communication in conjunction with online collaborative work. Participant D1 spoke to their preference of pointing at areas on the screen while E3 reflected on the ideal way to do group work:

I think balance is key. The internet is a wonderful resource if used carefully, but it's unable to replace human interaction. I think that there would be a balance between online and in-person communication. Group work online should mainly consist of recording ideas and notes. It's not really good for communication, because it's harder to express written ideas for most people.
It is vital to note that E3 is explicating the best way for herself and her peer to conduct group work; thus, for herself and her peers, it is more difficult to express ideas through written than spoken language. She notes that it is more difficult to communicate ideas online and not in-person. Group A, D, and G also reflected on the need for a combination of face-to-face and in-person communication. G1 stated that "talking face-to-face and coming up with ideas that way is more natural than brainstorming on the computer"; in addition, group B included a specific rule within their set of affinity space guidelines:

Failure to comply with the above rules three times will result in a physical gathering with the user where their seriousness and commitment to the group's well being will be questioned. The other users are then allowed to vote if the user is to be kept in the group or removed.

This rule insists that discussions involving serious matters are to be discussed in a face-to-face context and not in their group's digital space, which demonstrates that matters of a serious or sensitive nature be spoken in person, to avoid miscommunication and misinterpretation through inarticulate, inexperienced, or imprecise writing.

4.2.3 Online communication

Within this research study, participants were concerned with being able to credit specific individuals with their collaborative efforts. For clarity of online communication, all groups in this research study employed a mode of digital identification within the collaborative journals. Five of the groups explicitly stated that each member would be required to write all their work in a specific colour for immediate visual identification of written work. As a guideline, two groups required names to be attached to all sections of
work. Group D specifically included guidelines associated with a value. "Respect: Being 'anonymous' will not be tolerated"; in this case, anonymity was associated with disrespect. Their ‘no tolerance’ policy for anonymity requires all participants in the space to identify themselves and take responsibility for their actions within the affinity space.

Online technologies have been found to increase the potential of anonymity for the perpetrator (Slonje & Smith, 2008) and that the target experiences increased levels of frustration, insecurity, fear, and powerlessness (Dooley et al. 2009; Nocentini et al. 2010; Slonje & Smith 2008; Smith et al. 2008; Vandebosch & Van Cleemput 2008). Anonymity has the capability to empowering individuals, as community members of targets of offensive or undesirable behaviour cannot address an unknown individual. Anonymity grants the actor power as they are untraceable and can present a semblance of omnipotence (Latour, 2005). By associating names and identifying markers with written work or comments, it is possible to address the individual without detracting from the working dynamic of the entire group or network.

The rules devised by group E are unique as they are specific to digital modes of communication (see Artifact 1). The rules are organized in three sections: online resources, digital community, online organization. Two rules which were of notice are rules five and six under "Digital Community": "5. Use appropriate online language. 6. Remember the golden rule: ‘What ever you write online will remain online forever’". During class observations, I noticed E3 working exclusively on Google Drive. As I asked what E3 was doing, a small message box popped open at the bottom of her screen. I asked what it was and she explained that it was a chat function and that the entire class was logged into Google Hangouts. She continued and said that the class would "talk to each other normally in class", but on Google
Hangouts they used it "for leisure and yelling at people or the whole class". She clarified that it was also used to call someone back to group work and as a place to vent. As she spoke, I saw two new messages open in the chat box, "Why do we have to do this?" "I don't see the point". A week later after the conversation with E3 took place, I noticed that the fifth rule, "Use appropriate online language" had been added on March 9 by E3 (see Artifact 1). Since names are associated with what is written on the Google chat, E3 posted the rule within their affinity space at a later date, possibly as a reminder to herself and her group members to use appropriate language in an online space. Similarly to E3, group F engaged in a conversation regarding the empowerment of anonymity and how anonymity encouraged different types of communication.

F1:  [Technology] might take away the quality of communication. Like if you can spam out a paragraph in 10 seconds, it may lead to people not thinking stuff through."
F2:  Also people can feel empowered if they're behind a screen. Like they can say more than they would say in person. Whether they're anonymous or not so that can sometimes be a problem. You can sometimes say something that can offend someone or maybe you could see something offensive that would be very unlikely to be said, than if they were talking person to person.
F3:  Yeah a lot of people including myself, can get angry and take my frustrations out online like in games.

When engaging online, the participants were socially interacting to engage in communication and mutual regulation as the focal point of the communication was to facilitate the completion of a collaborative project. In this case, E3 recognized the different speech functions in accordance with Vygotsky's proposal of egocentric and inner speech (Vygotsky, 1962), a reinterpretation of Piaget's notion of egocentric speech (Piaget, 1926). While Piaget argued that egocentric speech dissipates as a result of the child's socialization, Vygotsky argued that as the child began to master social speech, egocentric speech 'goes underground'
and turns into 'inner-speech' (1962, p. 18). The resulting inner-speech is as Vygotsky deems, "quasi-social". Communication in chat functions, like inner speech, is often "condensed, fragmentary, disconnected, unrecognizable, and incomprehensible in comparison to external speech" (as cited in Wertsch & Stone, 1985, p. 173). In this online context, the participants engaged in leisurely unregulated "inner-speech".

While in a face-to-face context, socially developed adolescents engage in social-speech as a result of progressive differentiation; this re-emergence of egocentric speech is due to communicating through a seemingly private or internal tool. Group F recognizes the unregulated quality of anonymous speech in online contexts through reflexive and demonstrates progressive differentiation through socialization. E3 also experiences this progressive differentiation and reminds her group members to communicate using social speech in this online context as one would within a face-to-face environment. Group E engages and reminds each other of mutual regulation through the new addition to the group's guidelines.

In my findings, groups B and F explicitly discussed cyberbullying in relation to the design of affinity spaces. In the post interview, group B engaged in a conversation regarding perceived differences between online and face-to-face conversation. In the collaborative workspace, B4 added the following rule: "Users must communicate as they would in real life; nothing that would not be said face-to-face should also not be said"; B4 created this rule and spoke to this importance during the post-interview in relation to cyberbullying. In the post interview, group B noted that the rules were a work in progress and added to as they began to use the space and think about their use. In reflection of problems, which could be caused or worsened by technology, B4 stated:
I find that a lot of things people say online, they wouldn't regularly say in person. Or things that they regularly say, they wouldn't say online. And I think that they need to be both online and talk to people face-to-face, to be able to exercise both of them. Of what they would say online and what they would actually say, face-to-face. And I don't think it's the same. So I think that using too much technology can take away from what you would get from not using technology.

B2 added to this statement:

Yeah, cyberbullying is a pretty big problem. I think it's probably worse online, because you can't actually see the people who say mean things, so you really have no idea who's online. That might make people inclined to say mean things.

B4 speaks from personal experience; in observing individuals he knows in real life, and having observed their communications in both and online and face-to-face context, B4 has noted that people can speak and behave differently when comparing face-to-face and online conversations. B4 continues and advises that in order for individuals to recognize how their behavior differs when conversing in an online context, individuals need to be able to have face-to-face interactions in conjunction with online conversations. It is possible that without mutual regulation, adolescents who participate anonymously in online communications, do not progress and appropriate social communication in this new digital context. Without mutual regulation, B2 recognizes the propensity for online communication to become an act of cyberbullying. B4 concludes that in conversing too frequently in solely an online context would detract from what one would benefit from a face-to-face conversation; the individual would not recognize the progressive differentiation they experienced in a face-to-face context and would fail to transfer the social communication of their face-to-face context to the online context. B4 believes that a combination of face-to-face and online communication is necessary for adolescents to become cognisant of these differences.
4.2.4 Digital versus physical space

Similarly to the revelations of group B and F in the prior section, group E openly discussed their experiences regarding digital and physical spaces. E1 reflected on the problems caused by technology and spoke during her pre and post interview about her middle school experiences.

I find that a balance between actual physical communication while also using the help of online technology like Google Drive and [OneNote] notebook and stuff, that the ideal way personally, it would be to work in a group project. Last year in my elementary school, our teacher was really technology centralized [...] I never learned anything because he never regulated and never checked on us. He just wanted to see us on the computers at school on the website and that was all he asked for.

E2 added in response to E1 during both the pre and post interview:

I agree because for each person there are different and diverse learning styles and ways. You can’t just revolve learning or education around technology. There's a need for hands on work or physical communications like one-to-one communication. Emotions can also influence somebody's learning experience, but technology doesn't always include that within the experience that you may have. There should be a balanced view and value between technology and personal and physical communication.

In these excerpts from the post interview, both E1 and E2 caution against a technology-centric curriculum from experience; the two group members advocate for the appreciation and recognition of student values and diverse learning preferences into account when designing curriculum or considering pedagogical methods. E2 recognizes the relevance of hands on work and physical face-to-face communication where contextually relevant, to inspire and appeal to students. The two participants speak of a balance between technology and communication, which is both physical and personal. Group E summarized three key findings echoed by other participants in the other groups. When asked how they would
advise students using online collaborative spaces, the group succinctly stated:

E1: Have good communication.
E2: Have human interaction.
E3 Make sure everyone understands what's going on and the project itself.

As E2 discussed her extensive use of technology at her elementary school, it is possible that an early introduction of online collaborative spaces provided E2 with the ability to recognize differences and draw parallels between face-to-face contexts and online; however, it vital to include technology in a purposeful manner which adds meaning to the context. During the post interview Group A also discussed the function of technology within the assigned project. A1 shared, "This is more like a supplement to group projects. [OneNote] isn't a project. This is just a way to help us get the project done". Group A decided that they wanted to have a fun working dynamic and created rules to facilitate an enjoyable experience. While they appreciated memes in a leisurely context and would share them before class when "hanging-out", memes were not appropriate in their working space. MMO games and the name "Google Hangouts" suggests an openness to students; however, with a proper introduction to use and a purposeful meaning, technology can be regarded as complex and problematic, rather than a toy.

4.3 Conclusion

This chapter reported findings derived from initial and closing interviews, OneNote journals, and participant observations. Excerpts from each of these data sources illustrated the themes which emerged and assisted in triangulation; this resulted in a deeper understanding of how the participants designed affinity spaces for collaborative group work and provided themes through which to understand the participants' designs. The findings
inform how adolescents design affinity spaces (real and virtual) and emphasize design features they recommend to serve as functioning collaborative workspaces, both in and out of the classroom, to prevent or counter cyberbullying. Student-informed or student-designed spaces provide a sense of ownership or self-regulation and give insight as to how codes of conduct inform these spaces and vice versa. Chapter Five follows with conclusions drawn from this study, the implications, and recommendations for future areas of research.
Chapter 5: Conclusions, Implications, and Recommendations

The purpose of this research was to gain insight into how adolescents design affinity spaces for collaborative work and how affinity space design informs cyberbullying awareness. The case study focused on 28 students who entered Grade 8 in the fall of 2015. The findings of this research reflect how students design their online spaces and organize their collaborative efforts within these digital spaces. Through analysis of the data, I explored how educators should support secondary study use of online affinity spaces and for collaborative work while adhering to issues related to cyberbullying. This chapter first summarizes and discusses the findings, then provides recommendations for practical classroom applications of affinity spaces in secondary schools and areas of future research.

5.1 Summary

As adolescents are increasingly turning to online sources for research, study, and entertainment (Asselin & Moayeri, 2010, 2011; Curwood, 2013; Johnson, 2010; Marsh, 2011; McTavish, 2009; Neuman & Neuman, 2014), it is pertinent to investigate the effects of increased participation in affinity spaces. Adolescent designed affinity spaces provide insight into how these spaces are interpreted and utilized for collaborative enterprises and how democratic participation may be further fostered in these spaces. This research is situated in Gee’s concept of affinity space design (2005), and recognizes the intersection of sociocultural theory (Vygotsky, 1978), activity theory (Leont'ev, 1981), actor-network theory (Law & Callon, 1992; Latour, 2005) and design-based research (Collins et al., 2004) for future research endeavors. Gee's concept of affinity spaces facilitates the intricate tracings of online identities, affinity space design, and group membership. Vygotsky's sociocultural
theory and Leont'ev's activity theory provide an approach to discerning how adolescents
learn and appropriate mannerisms through the use of tools within these designed spaces.
Latour's actor-network theory assists with recognizing the power of non-human actors (e.g.,
technologies and applications) in online spaces. Finally, Collins' design-based theory can be
used to reconfigure and re-order the six phases of this research study in future iterations of
this research. By analyzing the data collected through Gee’s concept of affinity spaces
(2005), this research presents what students recommend for the design of affinity spaces for
collaborative work both in and out of the classroom, and how students interpret the design of
affinity spaces in connection with cyberbullying awareness.

5.2 Student design and affinity spaces

The collaborative OneNote journals and post interviews provided rich data which
informed the first research question: What do students recommend for the design of affinity
spaces (i.e., physical and digital) to serve as functioning collaborative workspaces, both in
and out of the classroom? Participants in the post interviews reported that they valued a blend
of working face-to-face and online collaborative work; they also preferred to set a specific
time, date, and location (i.e., physical, application, software, program) through a face-to-face
discussion prior to the online meeting, to minimize confusion or misunderstanding.

The participants in this case discussed the importance of having individual digital
spaces for experimentation and individual work. Through in-class observations, the
interviews, and analyzing the rules and guidelines section of the collaborative OneNote
journals, it was evident that students valued a sense of privacy and autonomy within a space
relegated to one's own work. The participants achieved democratic participation in their
OneNote journals through designated pages or sections so that each group member would be able to express and investigate their own ideas. In addition, to overcome misunderstandings or synching issues with the applications, some participants included a rule to ask in a face-to-face context as to whether material could be deleted.

One of the tasks specifically asked participants to set aside a space within the OneNote journal to discuss individual and shared rules, values, or guidelines. While only three of ten groups explicitly stated the importance of having individual team members’ needs and goals reflected in the finalized group guidelines, all groups recognized how their own developed codes of conduct guided and facilitated their collaborative work experience. The inclusion of a digital space relegated to group rules and guidelines facilitated a group discussion regarding shared rules, personal values, or group dynamic.

5.3 Interpreting affinity spaces and cyberbullying awareness

The interviews and group guidelines in the collaborative OneNote journals revealed participants' awareness and effect of web culture in their online collaborative spaces. As adolescents may have limited life experience to cite as example, students cited web culture phenomena such as fandoms, memes, and individuals with a strong online presence (i.e., Donald Trump) to clarify their ideas and strengthen communication amongst one another. Including personal preferences regarding the use of web culture assisted in preventing undesired behaviour within the affinity spaces (i.e., both physical and digital) and encouraged participants to reflect on the impact of certain web culture phenomena; this discussion also led to student discussions regarding aspects of a professional working environment and what would be deemed inappropriate or unrelated to their shared goal.
Participants in this study recognized the potential harm caused by anonymity; participants required all group members to identify themselves either by name or colour in their online affinity spaces, as problems could not be addressed if the source was unrecognizable. In order to promote and encourage mutual regulation within the group, anonymity was not allowed in the online affinity spaces. Mutual regulation was essential to assisting students to recognize and address inappropriate behaviour, which could turn into cyberbullying if not immediately addressed and become repetitive (Tokunaga, 2010). Groups B, E, and F showed that they had previous experience participating in online affinity spaces and recognized that novice affinity space participants frequently had difficulty realizing their online communication different from how they would communicate in a face-to-face context; Group B and F recommended for students to communicate face-to-face in conjunction with digital communication, to scaffold and guide students to draw parallels of appropriate behaviour and language between these two different modes of communication. As exemplified by Groups B and E, an appropriate introduction and use of technology within the curriculum can bring awareness to digital literacy and to issues of communication that are correlated to cyberbullying. Educators can help students recognize and understand the intricacy and complexity of digital communication; technology is complex and can be problematic if regarded simply as a toy.

Bill C-13, the Protecting Canadians from Online Crime Act, was passed into law in March 2014. It was nicknamed the Cyberbullying Bill by Justice Minister Peter MacKay, who stated that it was intended to protect youth and children from online predators and exploitation. The Act offers an alternative to dealing with individuals under the age of 18 who are alleged to have been involved with the distribution of intimate images of other
children or youth. In essence, this Act allows for moderate options and more flexibility when children or youth are perpetrators of such a crime. The Act itself makes no mention of cyberbullying. Cyberbullying is not a form or subset of cybercrime. Rather, cyberbullying has the potential to become a cybercrime if there is no intervention. As indicated in Chapter Two, it is misguided to consider cyberbullying as a subcategory of cybercrime. The charges in various cases demonstrate a greater depth of malicious intent to do psychological harm and are examples of cybercrime, not cyberbullying.

An all-encompassing concept of cyberbullying can be frustrating for parents, educators, and children. Research suggests that middle school students lack the ability to recognize cyberbullying behaviors or that inappropriate behaviours leading to cyberbullying (Kite et al., 2010). The lack of knowledge in regards to conduct and consequences is one of the attributed factors in cyberbullying and this thesis research into affinity space design could prove helpful demonstrating to youth how specific behaviours can contribute towards cyberbullying.

This research provides a new and innovative approach to facilitating students’ digital literacy practices, which includes understanding how cyberbullying could occur in affinity spaces. The social dynamic of learning in affinity spaces provides the right set of conditions for adolescents to discuss and reflect on their own digital communication practices. Providing students with activities and projects to design and explore affinity spaces may serve as an intervention and help them develop reflective practices with digital media. Countering cyberbullying challenges researchers and teachers to recognize the importance of reflective digital practices through conscientious digital communication (Asselin & Moayeri 2010, 2011; MacDowel, 2015; Petrina, 2000, 2014, 2016).
5.4 Recommendations

The recommendations and future directions resulting from the findings of this study can be divided into two areas of application; first I will discuss possible areas of research and then move to discuss recommendations for classroom applications.

5.4.1 Classroom applications

Findings from this case study have resulted in recommendations to assist educators in facilitating the introduction of online collaborative workspaces, which may help understand and potentially counter cyberbullying, in the secondary school classroom. Requiring students to create a page of group rules and guidelines was one of the pivotal modes of data collection in the research study and yielded rich data regarding affinity space design. This task encouraged a discussion regarding personal values and shared group guidelines. Educators should encourage students to create their own and explicitly state that this was a "living document" which could be added to or adjusted throughout their collaborative enterprise with the approval of all group members. I also recommend that educators provide students with a number of activities to scaffold the introduction of specific applications; having the students first investigate, experiment, test out, and compare a variety of applications enabled them to recognize the affordances and limitations of each program. Students were able to create rules and guidelines that considered the "bugs" or limits to each technology; students were able to diffuse problems regarding the applications and did not blame each other for the technological problems.
Students also require guidance in recognizing the rules of sharing a physical workspace so that they may be able to make parallels and apply their knowledge of physical space rules to online space rules. This correlation will encourage students to regard online spaces as places with real-world implications. Educators should encourage students to meet face-to-face in order to establish and design online affinity spaces; having face-to-face discussions will assist students who are not yet proficient or experts in written communication. A combination of face-to-face and online interaction to design the affinity space will help to foster a positive experience with online collaboration and minimize misunderstandings regarding the chosen software and applications or frustrations in communication.

I also suggest that using real-world examples of individuals with a strong online presence would assist students to recognize desirable and inappropriate online behavior. Educators should use a variety of media examples (e.g., image, sound, text) to illustrate online behaviours, such as showing tweets or self-authored YouTube videos from prolific individuals with a strong online presence. Offering students opportunities for self-reflexivity in relation to the term “digital citizenship” could engage students in an ongoing dialogue over cyberbullying; this would present an opportunity for students to engage with their group guidelines as a “living document” and assist in the re-evaluation and revisiting of the shared rules and values.

A combination of these recommendations would assist educators in introducing collaborative online spaces to students and encourage the student designs of democratic affinity spaces (online and in-person); thus, encouraging students of all levels of experience, regardless of age, class, disability, gender, race, or sexuality. These recommendations have
the potential to support a variety of forms of participation from students in a multitude of ways.

5.4.2 Future research

The integration of ANT and affinity spaces generated vital knowledge required to understand how democratic participation and collaborative interactions can be facilitated and encouraged in online spaces. An ANT-framed study of a case of cyberbullying could prove illuminating. Applications of theories focusing on socio-cultural dynamics and learning through activity allowed for the critical dissection of online communication in comparison to face-to-face communication are needed; further study into how students differentiate between online and face-to-face communication would give further insight and assist in the development of technology enhanced curriculum. Further experimentation and testing with the six stages of this research study would help to determine how to scaffold participant reflections and investigations into the use of affinity spaces for collaborative group work. Future research could further test the sequence and components of the six stages, and further exploration of possible affinity spaces design activities could be tested through the use of DBR (Wang, 2012; Wang, Petrina, & Feng, 2015).

With careful tracing and collaborative efforts, administrators, teachers, and researchers can come to fuller understanding of cyberbullying, which may lead us to re-evaluate current practices in teacher education and curriculum design. A final recommendation is to explore links between cases of cyberbullying with the types infrastructure or affinity spaces implicit in the cases. While cyberbullying cases are difficult to trace and come with multiple layers of complexity, there is a desperate need to research
and gather the stray threads. The benefit of following these difficult tracings is the ability to recognize the larger systems and hierarchies that exist and directly impact our students. At times, the actions of students are merely symptoms of a larger pre-existing problem in society: virtual worlds have real life consequences.
References


Appendices

Appendix A: Initial Peer Interview Questions

**What Do You Think?**

- Answer the following questions in your groups using the materials (paper, pens, felts, iPads) made available.
- Group members should take turns to answer each question, but may choose to skip questions if they do not feel comfortable.
- If group members prefer to write down answers, instead of interviewing each other with the iPad, please write the corresponding name or names beside each answer; this is to make sure each person is recognized for their response.

1. Describe and explain the following words.
   - a. Technology
   - b. Digital Citizenship
   - c. Group Work
   - d. Online Collaboration
   - e. Cyberbullying

2. What do you think is the ideal way to do group work using technology? What kinds of problems could technology solve? What kinds of problems could be caused or worsened by technology?

3. Include at least 2 questions or comments of your own choosing and address them individually or as a group.
Appendix B: Stage Three Activity Instructions

Investigate an Online Collaborative Workspace

In your groups, select at least one of the following applications to investigate:

- Evernote
- Google Drive
- Weebly
- Dropbox

Assess the application your group chose. Document your assessment in your collaborative OneNote notebooks.

1. What did you group like or dislike about the application? Explain and describe how this application could help or hinder or your group collaboration.

2. Describe a minimum of two features which would make it easy or difficult for your group to complete your project, while following your group’s code of conduct. Clearly state your group’s code of conduct.
Appendix C: Stage Four and Five Activity Instructions

Creating an Online Collaborative Workspace

Using ideas from your investigation and assessment of your application, create a collaborative workspace using the application of your choice for your "Surprise Me" group project.

A completed group project must include 2 things:

1. A collaborative workspace documenting your group work
2. Your completed group project
Appendix D: Closing Group Interview Questions

After Your Project: What Do You Now Think?

1. Reflect if any of the following words have changed in meaning since you have completed your group project. Describe and explain how these words have changed and why.
   a. Technology
   b. Digital Citizenship
   c. Group Work
   d. Online Collaboration
   e. Cyberbullying

2. What do you now think is the ideal way to do group work using technology? What kinds of problems could technology solve? What kinds of problems could be caused or worsened by technology?

3. If you were to give students advice on how to use online collaborative workspaces, what advice would you give?
Appendix E: Sample of Closing Group Interview Transcript — Group A

Reflect if any of the following words have changed in meaning since you have completed your group project.
A1 & A2: Online collaboration and Group Work
A1: I thought that group work wasn't as much fun, but it was okay.
A4: But in person it's better though.
A2: This was the first group project where I haven't ended up hating everybody afterwards.
A1: This is like a good way to organize our thoughts.
A3: And I think that we understood where we were at all times. Like we admitted it if we were a bit behind, "oh yeah, we forgot that was due".

What do you now think is the ideal way to do group work using technology?
A1: This was a good way.
A4: I like google docs better.
A1: I like this one better.
A4: This was just kinda slow.
A3 A2 nodding.
A1: Yeah, I like the chat thing. A4: Yeah with Google Docs
A2: I like google docs with this pretty equally but with this one it was easier, because you could have more pages.
With this one it was easier because you could have more pages, and it wasn't just like one file.
A4: yeah yeah.
A2: But with Google docs they had the chat thing.
A4: And this was easier to invite people on.
A1: I like this one because this is good to supplement real long stuff [projects]. And google docs is good if you can't communicate. Like over a weekend or something, I prefer google doc because you can have a chat. With this [OneNote] like in class, it's easier.
A3: But I think it's important to stay with one technology because it can get confusing if you're using multiple things [programs].
A4: Yeah, like "Oh, we're using google docs today" and then later you're going on another thing.
A3: Yeah that's where you can lose information, if you're using different technologies. [5:07]

What kinds of problems could technologies solve?
A1: It was nice to have the pictures.
A3: It was nice to organize my thoughts, but since we made our models, like physically, it was good to have our brainstorming.
A1: The organization in general just helped, because it's really things for pages to get lost, but this is forever.
A4: Until we delete it.

What kinds of problems could technology worsen?
All: Slow. It was slow.
A2: This didn't happen in our group, but it's happened to me in the past, when I work with people online, where they were like "Oh yeah, I uploaded it, but I guess it didn't go on", but I was pretty sure they just didn't do it and were making excuses.

**If you were to give students advice on how to use online collaborative workspaces, what advice would you give?**

A3: When you're talking in person, you need to go over, "we're going to be meeting at this time, on this thing, and you're going to be doing this, I'm doing this, you're doing that."

A4: Yeah

A3: Like, setup guidelines.

A1: Also don't be afraid to tell people what to do, "You have to pick a colour. Pick a colour."

A2: Also if you're using technology, after people have worked on stuff at home, go over it, to make sure everybody knows what people did, and make any changes that they feel are necessary.

A1: This is more like a supplement to group projects. Like this isn't a project. This is just a way to help us get the project done.

A4: Just make sure you have a way of communicating outside of that, like if you're not in-person.

A3: Like a secondary way.

A1: OneNote is slow.

A1: It's a lot easier when you have a lot of tabs

A4: Oh and use colours.

All nod and said yes, it was good.

A1: It was good because you didn't have to put your name.

A4: It was more fun because we're all friends.

A2: I thought I was gonna end up hating you guys, but you were all cool.

A4: I hate it when you have random people in your groups, and then you don't get along.

A1: It's like you're clashing, but you don't wanna tell or say that you're clashing. We don't really clash.

A1: We can yell at each other, but we're not actually yelling at each other. We can tell that it's not like really...

A4: anger.

A2: There was never double sided yelling.

A4: It was just like "okay" or "go away".
Appendix F: Sample of Closing Group Interview Transcript — Group B

Reflect if any of the following words have changed in meaning since you have completed your group project.
B4: Digital Citizenship, because before doing our rules and values, I never really thought about it much. It was just kind of like an idea we had for social communication that I applied here, but after we made the rules clear, what we could do and should not do, it was better because then everybody knew the rules for our whole group. These rules are not just for ourselves, because everyone could be brought up differently.
B2: Technology sounds a bit differently. 3D printers. I’ve never seen one before. It was a new experience.
B2: Online Collaboration. We sat in a row beside each other. Why type in the thing when we could just talk to each other.
B1: I worked on it at home, and on my own laptop screen;
B2: I did some individual work on my own tablet and I reviewed it at home.

What do you now think is the ideal way to do group work using technology?
B4: For me, because we all used Google Drive, switching to OneDrive, it was the same kind of experience;
B1: At my old school, we did lots of online collaboration, so I'm used to it, this doesn't really change my perspective.

What kinds of problems could technologies solve?
B4: The tabs were helpful. It solved the categorization issue.
B2: Because we had the grace of working near each other, if we were in a different country, then communication wise it probably would've solved a lot of issues

What kinds of problems could technology worsen?
B1: De-socialization; being less social
B2: Addiction, like spending all your life, i mean of course being on a screen for a little bit is okay, but if you're just holed up inside, you don't really get to see much of the outside.
B4: I find that a lot of things people say online, they wouldn't regularly say in person. Or things that they regularly say, they wouldn't say online. And I think that they need to be both online and talk to people face-to-face, to be able to exercise both of them. Of what they would say online and what they would actually say, face to face. And I don't think it's the same. So I think that using too much technology can take away from what you would get from not using technology.
B2: Yeah, cyberbullying also is a pretty big problem, and I think probably is worse online, because you can't actually see the people who say mean things, so you really have no real idea online, so that might make people inclined to say mean things.

If you were to give students advice on how to use online collaborative workspaces, what advice would you give?
B1: Backups
B2: Backup your files, you never know when something could get deleted.
B4: Yeah, I would say to make sure that you're comfortable with this space you're working on and that everyone else around you working on the same space is also comfortable. I think it's harder to do when you're on an online space, versus just being together, because when you're together it's easier to talk it out or find someone who can be a moderator and help talk it out. When you're online, it's hard to communicate more truthfully, because you could say anything or you could not say anything and they can't read your face. So they don't know if you're actually comfortable. I think that it's very important that everyone is comfortable.

B2: Get to know your software, just so you don't mess anything up by accident. You could probably just play with it at home your own time, instead of experimenting with the product or what your group is making. Just make, for example, Google drive, if you don't know about something, make a separate document that only you can access and play around with it, so you can get to know your software. So you don't delete something important.
Appendix G: Parent/Guardian Consent Form

Department of Curriculum and Pedagogy

Consent Form
How We Learn (Media & Technology Across the Lifespan)

Investigators
The principal investigators for this study are Dr. Stephen Petrina and Lesley Liu, members of the Faculty of Education and who may be reached at (604) 822-5325. This research will be used for the MA thesis of Lesley Liu, a graduate student in the Faculty of Education, who may be reached at UBC (604) 822-5477.

Study Purpose and Procedures
The purpose of this research is to provide an understanding of how youth interact with collaborative technology, such as Google Drive, Evernote, Microsoft One Note, Dropbox, and Weebly. We are interested in the cognitive demands of these technologies. This study addresses learning over time and the total time necessary for youth to participate in this study is approximately 15 hours over a period of time.

Confidentiality
The child's identity will be kept strictly confidential. All documents will be identified only by code. Physical hard copies will be kept in a locked filing cabinet. Electronic copies will be encrypted and protected by password. This data will be kept in the research office in the Neville Scarfe building on the UBC campus and will be accessed only by research team members.

Contact Information
If you have any questions or desire further information with respect to this study, you may contact Dr. Stephen Petrina at (604) 822-5325. If you have any concerns about the treatment of children or rights as a research subject, you may contact the Research Subject Information line in the UBC Office of Research Services at (604) 822-8598.

Consent
Your child's participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time. Visual data analysis will be conducted only with your assent or consent of the use of photo and video clips. Please use the attached form for providing assent for the use of images or visual data.

______________________________  ________________________________
Parent/Guardian Signature           Date

______________________________
Printed Name of the Parent/Guardian signing above
Appendix H: Visual Analysis Assent Form

Department of Curriculum and Pedagogy

Visual Analysis Assent Form
How We Learn (Technology Across the Lifespan)

Use of Images (Photos or Video Segments) for Research and Presentation

Principal Investigator: Dr. Stephen Petrina, Professor
Department of Curriculum Studies
University of British Columbia
604-822-5325

Co-Investigators: Lesley Liu

Purpose:
The purpose of this research is to provide an understanding of how youth interact with collaborative technology, such as Google Drive, Evernote, Dropbox, Microsoft One Note, and Weebly. We are interested in the cognitive demands of these technologies. This study addresses learning over time and the total time necessary for youth to participate in this study is approximately 15 hours over a period of time.

Assent
Your signature here means that you assent to appropriate use of images of your child for research and presentation associated with this project. Your child’s participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time. Visual data analysis will be conducted only with your assent of the use of photos and video clips. Please use this form for providing assent for the use of images or visual data.

Please check the box indicating Permission
I have reviewed the photographs or videotape segments of my child that are being used in the research report and communications about this project and

☐ I ASSENT to the use of photos or videotape clips of my child in this way.

☐ I DO NOT ASSENT to the use of photos or videotape clips of my child in this way.

Student’s Name (please print)_____________________________________________
Student’s Parent or Guardian’s Name (please print)____________________________
Signature_____________________________________ Date:___________________
Appendix I: Parent/Guardian Release Form

Department of Curriculum and Pedagogy

Parent/Guardian Release Form
How We Learn (Media & Technology Across the Lifespan)

Parent/Guardian Release
I hereby authorize my child's participation in this UBC Affinity Space Design and Digital Citizenship research study. I know of no physical or mental problems that may affect my child's ability to safely participate in this research study. By signing this document, it is my intention to exempt and relieve UBC, its instructors and employees, agents and servants from any and all liability of personal injury. I am aware that UBC does not provide medical/accident insurance for the enrolled participant and I understand that the responsibility to arrange such insurance, or to otherwise cover any medical costs, is mine.

I hereby authorize the staff of the UBC Affinity Space Design and Digital Citizenship research study to act on my behalf in the case of illness or injury involving my child. I agree that UBC and/or its instructor(s), agents, employees, servants or any of them, shall not be held liable for any injuries or damages which may rise out of the research study's activities, regardless of cause, unless such injuries or damages result expressly from the sole negligence of UBC and/or its instructor(s), agents, employees and servants while acting within the scope of their duties.

Student's Name (please print) ______________________________________________
Age ____________________
Parent or Guardian's Name (please print) ______________________________________
Phone Number ____________________  Email Address__________________________
Emergency Contact _______________________________________________________

Parent/Guardian Signature  Date
Appendix J: Vancouver School Board Letter of Approval

VANCOUVER BOARD OF EDUCATION
School District No. 39
ASSOCIATE SUPERINTENDENT
1580 West Broadway
Vancouver, B.C. V6J 5K8

Dec. 10, 2015

Lesley Liu
MA Student, How We Learn Lab
Department of Curriculum and Pedagogy
Faculty of Education
University of British Columbia
2125 Main Mall
Vancouver, B.C. V6T 1Z4

Dear Ms. Liu,

Thank you for your research proposal on “How We Learn - Media and Technology Across the Lifespan.” On behalf of the VSB Research Committee please accept this letter as approval for you to continue your research at Eric Hamber Secondary. You have permission to contact teachers, parents and students there. Please contact the Principal of the school first and note that teachers and Administrators have the right of refusal. The Vancouver School District does not find subjects for researchers.

The VSB Research Committee would be very interested in learning of your results and its implications for students. When your research is completed please send us an abstract of the results.

Thank you for focusing your work within the Vancouver School District. I wish you the best of luck as you proceed with your inquiry.

Sincerely,

Nancy Brennan,
Associate Superintendent